

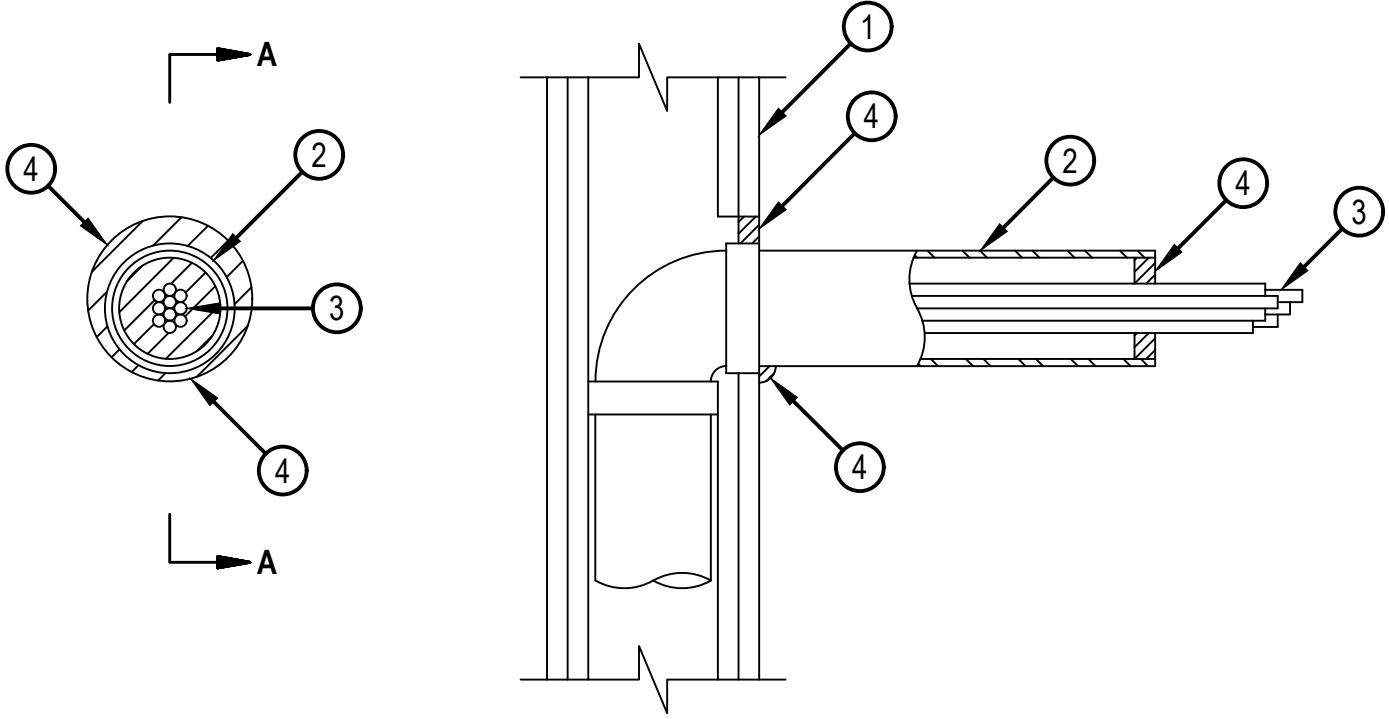


Classified by
Underwriters Laboratories, Inc.
to UL 1479 and CAN/ULC-S115

System No. W-L-3320

WL 3320

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings — 1 & 2 Hr (See Item 1)	F Ratings — 1 & 2 Hr (See Item 1)
T Rating — 0 Hr	FT Rating — 0 Hr
L Rating at Ambient — Less Than 1 CFM/sq ft	FH Ratings — 1 & 2 Hr (See Item 1)
L Rating at 400°F — Less Than 1 CFM/sq ft	FTH Rating — 0 Hr
	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



SECTION A-A



Hilti Firestop Systems

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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 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.
 - B. Gypsum Board* — One or two layers of nom 5/8 in. (16 mm) thick gypsum board as specified in the individual Wall and Partition Design. The max diam of opening is dependent upon the type of fill material as shown in Item 4.
The hourly F, FH Ratings of the firestop system are equal to the hourly fire rating of the wall assembly.
2. Sleeve — Nom 3 in. (76 mm) diam (or smaller) steel EMT, steel conduit or Schedule 5 (or heavier) steel pipe. The annular space used between the steel sleeve and periphery of opening is dependent upon the type of fill material as shown in Item 4. Maximum projection from wall is 12 in. (305 mm). Sleeve to be rigidly supported on penetrated side of the wall assembly.
3. Cables — Aggregate cross-sectional area of cable in opening to be min 0 to max 45 percent of the cross-sectional area of the opening. The annular space between the cable bundle and the periphery of the opening to be min 0 in. (point contact). Cables to be rigidly supported on penetrated side of the wall assembly. Any combination of the following types and sizes of copper conductor cables may be used:
 - A. Max 7/C No. 12 AWG with polyvinyl chloride (PVC) insulation and jacket.
 - B. Max 25 pair No. 24 AWG telephone cable with PVC insulation and jacket.
 - C. Type RG/U coaxial cable with polyethylene (PE) insulation and PVC jacket having a max outside diameter of 1/2 in. (13 mm).
 - D. Multiple fiber optical communication cable jacketed with PVC and having a max OD of 5/8 in. (16 mm).
 - E. Through Penetrating Products*— Max three copper conductor No. 8 AWG . Metal-Clad Cable+.
AFC CABLE SYSTEMS INC
 - F. Max 3/C (with ground) No. 8 AWG (or smaller) copper conductor cable with PVC insulation and jacketing.
 - G. Max 3/4 in. (19 mm) diam copper ground cable with or without a PVC jacket.
 - H. Fire Resistive Cables* — Max 1-1/4 in. (32 mm) diam single conductor or multi conductor Type MI cable. A min 1/8 in. (3 mm) separation shall be maintained between MI cables and any other types of cable.
4. Fill, Void or Cavity Material*— Sealant — Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with surface of wall. Min 1/2 in. (13 mm) diam bead of sealant applied at point contact location.

Type of Fill Material	Max Diameter of Opening, in. (mm)	Min Annular Space, in. (mm)	Max Annular Space, in. (mm)
FS-ONE MAX Intumescent Sealant	6 (152)	0 (0), point contact	2 (51)
CFS-S-SIL GG Sealant	5 (127)	0 (0), point contact	1 (25)
CP601S Elastomeric Sealant	5 (127)	0 (0), point contact	1 (25)
CP 606 Sealant	5 (127)	0 (0), point contact	1 (25)
CP618 Putty	5 (127)	0 (0), point contact	1 (25)

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE MAX Intumescent Sealant, CFS-S SIL GG Sealant, CP601S Elastomeric Sealant, CP 606 Sealant, CP618 Putty

5. Packing Material — (Optional, Not Shown) — Mineral wool forming material may be used as a backer for the sealant. When used, it shall be firmly packed into annular space between cables and sleeve as a permanent form and recessed from end of sleeve to accommodate the required thickness of fill material.

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

