

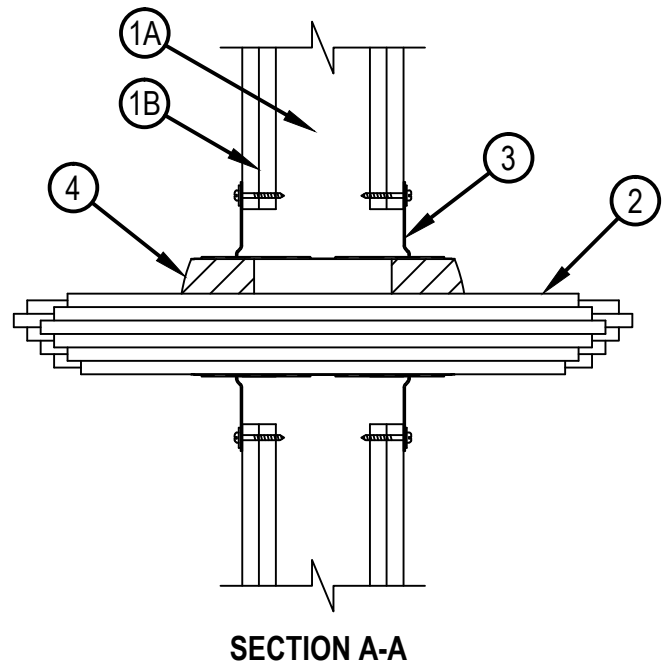
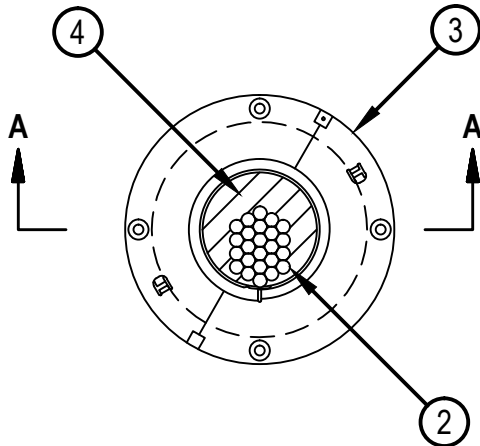


Classified by
Underwriters Laboratories, Inc.
to UL 1479 and CAN/ULC-S115

System No. W-L-3393

WL 3393

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 - 0, 3/4 and 1 Hr (See Items 2 and 3)	FT Ratings - 0, 3/4 and 1 Hr (See Items 2 and 3)
L Rating At Ambient - See Item 4	FH Ratings - 1 and 2 Hr (See Item 1)
L Rating At 400F - See Item 4	FTH Ratings - 0, 3/4 and 1 Hr (See Items 2 and 3)
	L Rating At Ambient - See Item 4
	L Rating At 400F - See Item 4



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 within the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall incorporate 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 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.
- B. Gypsum Board* — Nom 5/8 in. (16 mm) thick gypsum board as specified in the individual Wall and Partition Design. Opening in gypsum board to be max 8 in. (203 mm) diam for 4" device and max 6 in. (152 mm) diam for 2" device.

The hourly F and FH Ratings of the firestop system are dependent upon the hourly rating of the wall in which it is installed.



Hilti Firestop Systems

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January 25, 2013

2. Cables — Within the loading area for each firestop device, the aggregate cross-sectional area of cables to be min 0 to max 60 percent fill. Cables to be tightly bundled within the device and rigidly supported on both sides of wall assembly. Any combination of the following types of cables may be used:

- A. Max 100 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) jacketing and insulation.
- B. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
- C. Max 4/0 AWG Type RHH ground cable.
- D. Max 4 pr No. 22 AWG Cat 5 or Cat 6 computer cables.
- E. Max RG 6/U coaxial cable with fluorinated ethylene insulation and jacketing.
- F. Fiber optic cable with polyvinyl chloride (PVC) or polyethylene (PE) jacket and insulation having a max diam of 1/2 in. (13 mm).
- G. Max 3/C No 12 AWG MC Cable.

For opening with cables, when the hourly rating of the wall assembly is 1 hr, the T, FT and FTH Ratings are 0 hr. For opening with cables, when the hourly rating of the wall assembly is 2 hr, the T, FT and FTH Ratings are 1 hr except that when Item 2C is used, the T, FT and FTH Ratings are 3/4 hr.

3. Firestop Device* — Firestop device consists of a corrugated steel tube with a flange at each end that is spun clockwise onto device threads, butting tightly to both sides of wall. Each flange is secured to face of wall with min four No. 10 by 1-1/2 in. (38 mm) steel laminating screws through prepunched holes in flange. Device is designed to allow installation before or after the cable penetrants are in place. Device slid into wall such that ends project an equal distance from the approximate centerline of the wall assembly. The annular space between the device and the periphery of the opening shall be min 0 in. (point contact) to max 2 in. (51 mm). For blank openings (no cables) in 2 hr rated walls, the T, FT and FTH Ratings for the firestop system are 1 hr. For blank openings (no cables) in 1 hr rated walls, the T, FT and FTH Ratings are 0 hr.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CFS-SL RK 2" and 4" Firestop Sleeve

4. Fill, Void or Cavity Material* - Plug — Nom 2 or 4 in. (51 or 102 mm) plug sized for the firestop device (Item 3) friction fit within the sleeve flush with the end of the sleeve on both sides of the wall assembly. Plug cut to fit around the cable bundle and installed tightly within the sleeve.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CFS-PL Firestop Plug

The following L Ratings are covered. Cable bundle shall be centered within the device.

	CFM (per device)		CFM/Sq Ft Opening	
	Ambient	400°F	Ambient	400°F
Blank Opening (no cables)	1.3	1.1	3.8	3.0
Max 33% aggregate cable fill	2.8	1.2	8.1	3.3

