

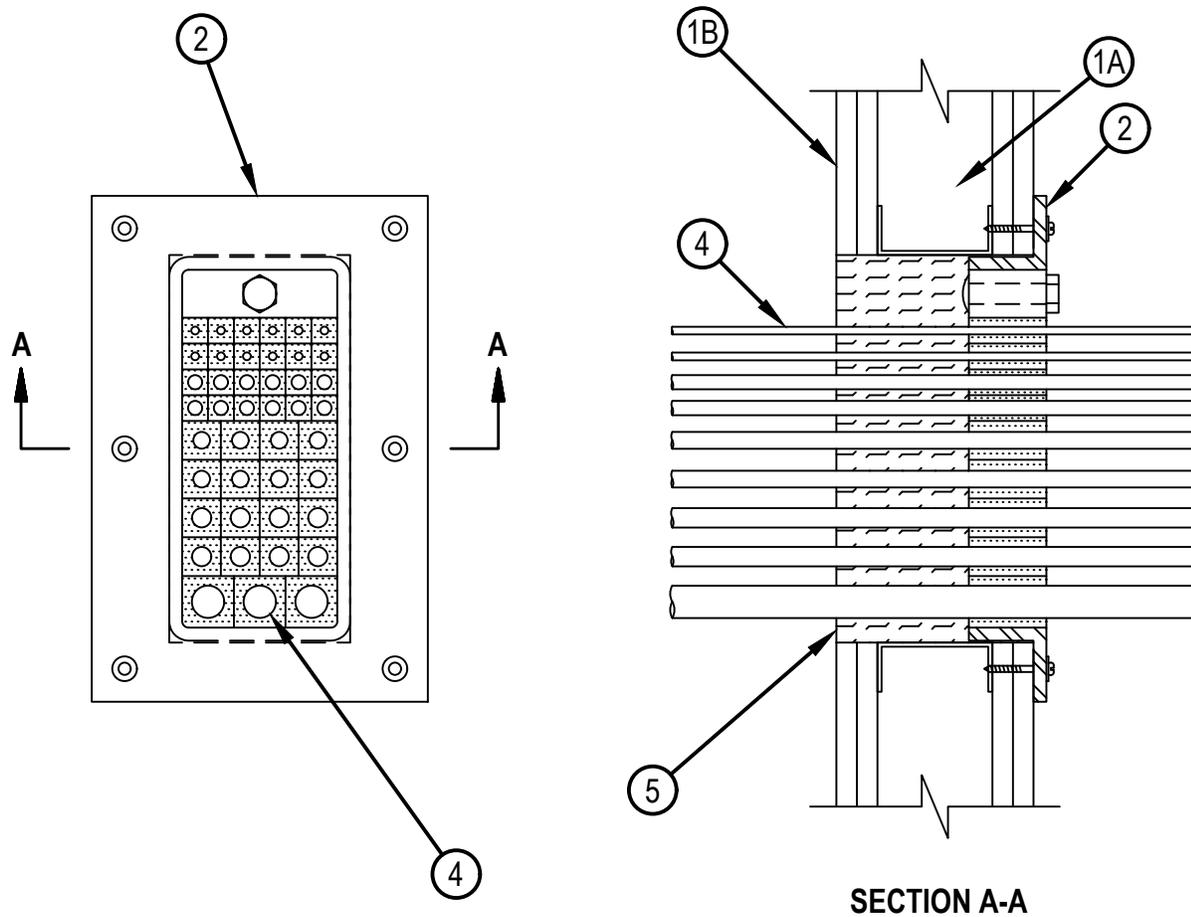


Classified by  
Underwriters Laboratories, Inc.  
to UL 1479 and CAN/ULC-S115

## System No. W-L-3391

WL 3391

| 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 and 1/2 Hr (See Item 1) | FT Ratings — 1 and 1/2 Hr (See Item 1)  |
|                                       | FH Ratings — 1 and 2 Hr (See Item 1)    |
|                                       | FTH Ratings — 1 and 1/2 Hr (See Item 1) |



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 U400, V400 or W400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:

- A. Studs — Wall framing to consist of steel channel studs. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced 24 in. (610 mm) OC. Additional stud members shall be used to completely frame the opening. Size of opening in wall to equal OD of transit frame (Item 2A) width and height (excluding mounting flanges) with a tolerance of +9/32 in. (+7mm). Maximum area of opening to be 65 in<sup>2</sup> (420 cm<sup>2</sup>) with a maximum dimension of 11-3/4 in. (300 mm).
- B. Gypsum Board\* — Thickness, type, number of layers, orientation and fasteners shall be as specified in the individual Wall and Partition Design. The hourly F and FH Rating of the firestop system is equal to the hourly fire rating of the wall assembly. The T, FT and FTH Rating of the firestop system is 1/2 hr (for 2 hr fire Rating) and 0 hr (for 1 hr fire Rating).



Hilti Firestop Systems

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2. Firestop Device\* — The firestop device consists of a rectangular frame, elastomeric cable and filler modules, anchor plates, lubricant and wedge seal(s) compression unit. The firestop device shall be inserted into the framed opening on one side of wall assembly. The device shall be installed in accordance with the accompanying installation instructions and shall include the components as described below.

- A. CFS-T SB, or CFS-T SBF, GS MSP or GS Transit Frame — Transit frames in galvanized steel (GS) or primed steel (MSP) and in frame sizes of 8 x 1 or smaller (ie, 6 x 1, 4 x 1 etc). The steel frame of the firestop device shall be inserted into the framed wall opening on one side of wall. The flanges of the steel frame of the firestop device shall be secured to the steel studs framing the wall opening, through the gypsum board layers, by means of No. 8 by min 3 in. (76 mm) long self-drilling, self-tapping steel screws and 1-7/16 in. (36 mm) diam steel washers. One fastener shall be located in each corner of the device frame mounting flange and intermediate fasteners spaced max 6 in. (150 mm) OC.
- B. CFS-T Cable Modules — The annular space within the firestop device frame is filled with elastomeric cable modules, one specifically sized for the outer diameter of each cable penetrant. In areas within the opening with no penetrants, solid cable modules (solid cylindrical core of the unpenetrated module left in place) or filler modules can be used. The cable modules are installed in uniform rows within the frame with anchor plates (Item 2D) used to separate each row to retain the modules within the frame. A fixing anchor plate (Item 2D) and a wedge compression kit (Item 2E) are then installed to completely fill the opening and compress the modules in place to form an effective seal around the cables and elastomeric insert blocks. The total number of modules required within the device is specified by Hilti based on the frame size.
- C. CFS-T LUB — This lubricant is applied to each cable module (Item 2B) prior to installation within the device frame.
- D. CFS-T AP GS Anchor Plates and CFS-T FAP GS Fixing Anchor Plate — The steel anchor plates are installed between each layer of cable modules (Item 2B) and the fixing anchor plate is installed below the final layer to hold the modules in place. The Hilti Module Squeezer tool is then used to compress the layers of cable modules / anchor plates to allow room for installation of the wedge seal (Item 2E). Once compression is attained, the integral fasteners on the anchor fixing plate are engaged to hold the layers in compressed position and the wedge seal is then installed.
- E. CFS-T WD120 GS Wedge Seal — Installed as the final component within the firestop device frame to close off the unused opening above the fixing anchor plate.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CFS-T Cable Transit System

3. Fill, Void or Cavity Material\* — (Not Shown) - Prior to the installation of the firestop device frame (Item 2A), a min 1/8 in. (3 mm) thick by 1 in. (25 mm) wide strip of putty or a min 1/2 in. (13 mm) diam bead of sealant is installed beneath the device frame flanges around periphery of opening to seal the frame flanges to the gypsum board or wall framing.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 619T Putty Roll or FS-ONE MAX Intumescent Sealant

4. Cables — Cables to be rigidly supported on both sides of wall assembly. Any combination of the following types and sizes of copper conductor (unless otherwise noted) cables may be used, except that the total number of cables of types E, F and G below shall not exceed eight (8). Within each firestop device, cables can be used for a total visual cable fill of min 0 percent to max 100 percent (one cable in each cable module within the device).

- A. Max RG 6/U coaxial cable with fluorinated ethylene insulation and jacketing.
- B. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
- C. Max 24 fiber fiber optic cable with polyvinyl chloride (PVC) or polyethylene (PE) jacket and insulation having a max diam of 1/2 in. (13 mm).
- D. Max 3/C with ground No. 8 AWG (or smaller) copper conductor NM cable (Romex) with PVC insulation and jacket.
- E. Max 4/0 AWG 600V aluminum Type XHHW-2 ground cable with XLPE jacket and insulation.
- F. Max 150 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) jacketing and insulation.
- G. Max 7/C with ground, 600 V, No. 10 AWG (or smaller) copper conductor, aluminum armor TECK 90 cable with XLPE insulation and PVC inner/outer jacket.

5. Packing Material — Min 4 pcf (64 kg/m<sup>3</sup>) mineral wool batt insulation firmly packed into opening to completely fill the annular space remaining in the wall opening, including between and around cables, from the firestop device (Item 2) to flush with opposite face of wall.

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

