

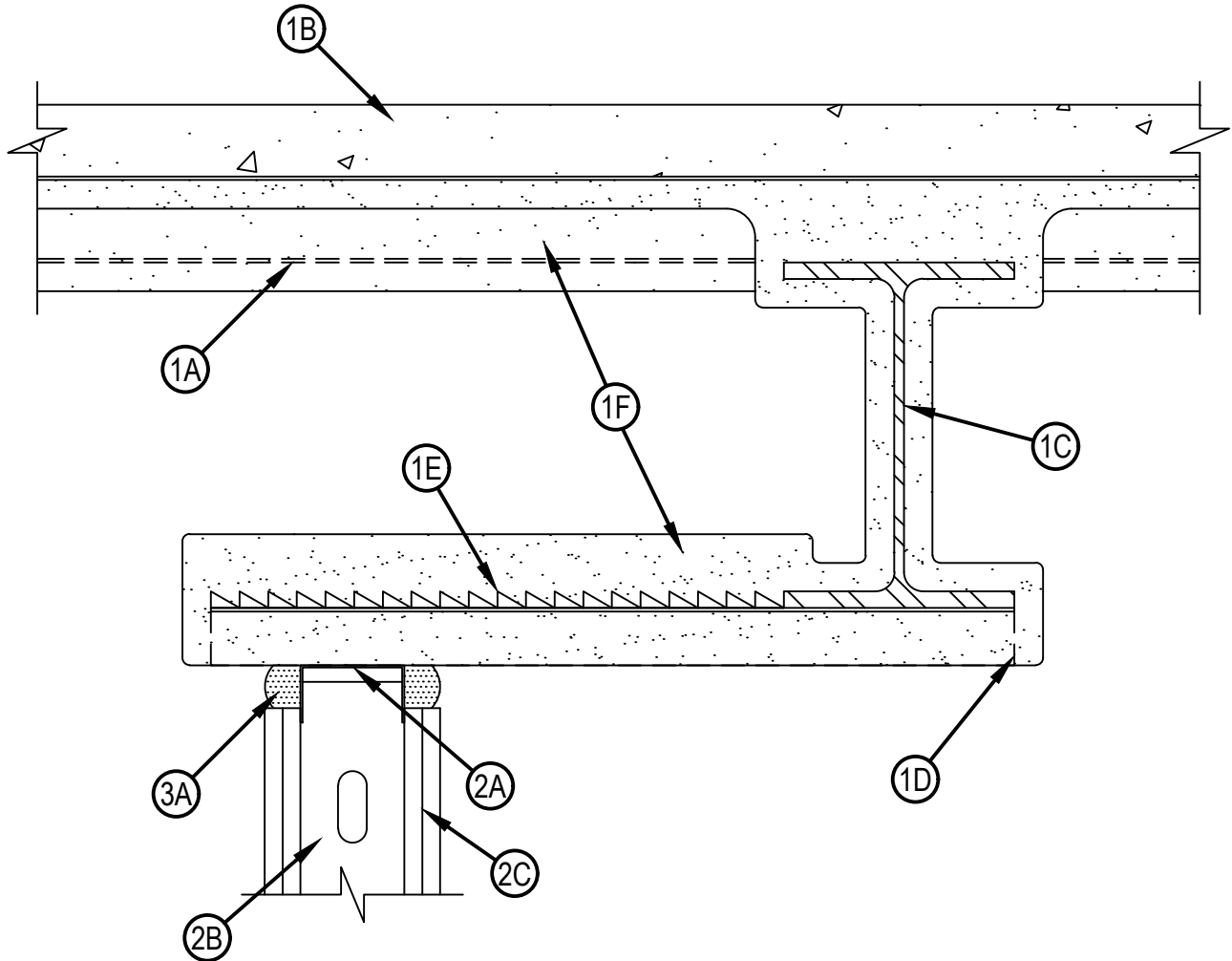


Classified by  
Underwriters Laboratories, Inc.  
to UL 2079 and CAN/ULC-S115

# System No. HW-D-0956

HWD 0956

ANSI/UL2079	CAN/ULC S115
Assembly Ratings — 1 and 2 Hr (See Items 1 and 2)	F Ratings — 1 and 2 Hr (See Items 1 and 2)
Nominal Joint Widths — 7/8, 1 or 1-1/2 In (See Item 3)	FT Ratings — 1 and 2 Hr (See Items 1 and 2)
Class II or III Movement Capabilities — 62% Compression and 50 % Extension, 86 %Compression and 83% Extension or 92% Compression only (See Item 3-Table 1)	FH Ratings — 1 and 2 Hr (See Items 1 and 2)
L Rating At Ambient — Less Than 1 CFM/lin ft	FTH Ratings — 1 and 2 Hr (See Items 1 and 2)
L Rating At 400°F — Less Than 1 CFM/lin ft	Nominal Joint Widths — 22, 25 or 38 mm (See Item 3)
	Class II or III Movement Capabilities — 62% Compression and 50 % Extension, 86% Compression and 83% Extension or 92% Compression only (See Item 3-Table 1)
	L Rating At Ambient — Less Than 1.55 L/s/m
	L Rating At 204°C — Less Than 1.55 L/s/m



**Hilti Firestop Systems**

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1. Floor Assembly —The fire-rated fluted steel deck/concrete floor assembly shall be constructed of the materials and in the manner described in the individual D700 or D900 Series Floor-Ceiling Design in the UL Fire Resistance Directory and as noted below. The hourly fire rating of the floor assembly shall be equal to or greater than the hourly fire rating of the wall assembly. The floor assembly shall include the following construction features:

- A. Steel Floor and Floor Units\* —Max 3 in. (76 mm) deep galv steel fluted floor units.
- B. Concrete —Min 2-1/2 in. (64 mm) thick reinforced concrete, as measured from the top plane of the floor units.
- C. Structural Steel Support —Steel beam, as specified in the individual D700 or D900 Series Floor-Ceiling Design, used to support steel floor units. Structural steel support oriented parallel to and max 12 in. (305 mm) from wall assembly.
- D. Steel Furring —Z-shaped bars or channels, located to span from steel beam to min 1 in. (25 mm) beyond face of wall and spaced max 24 in. (610 mm) on center. Z-shaped bars are nom 1-1/2 to 2 in. (38 to 51 mm) deep and formed from min 16 gauge painted or galvanized steel. Channels are nom 1-1/2 in. (38 mm) or 2 in. (51 mm) deep and formed from min 16 gauge painted or galvanized steel. Each bar or channel welded or fastened with steel fasteners to steel beam and welded, bolted or screwed to ceiling runner of wall. Each bar or channel shall be fully covered with spray applied fire resistive material to the minimum thickness of material required on the flanges of the steel beam.
- E. Steel Lath —Nom 3/8 in. (10 mm) diamond mesh expanded steel rib lath having a nom weight of 3.4 lb/yd<sup>2</sup> (1.8 kg/m<sup>2</sup>) shall be installed over and attached to the steel furring bars or channels (Item 1D) to completely cover the exposed area from the flange tip of the steel beam to the end of the bar/channel framing extending beyond the wall surface. The lath shall be secured with steel fasteners or tie wire and shall be fully covered with spray applied fire resistive material (see Item 1F).
- F. Spray-Applied Fire Resistive Material\* —After installation of ceiling runner and Top Track Seal (Item 3A), steel floor units (as applicable) and structural steel beam to be sprayed with the thickness of material specified in the individual D700 or D900 Series Design. The flutes of the steel floor units above the structural steel beam shall be filled with spray-applied fire resistive material across the entire top flange of the steel beam. Each bar or channel furring member (Item 1D) shall be fully covered with spray applied fire resistive material to the minimum thickness of material required on the flanges of the steel beam. SFRM shall not be applied over the joint protection material (Item 3A) but shall cover all other exposed surfaces of the bar or channel furring. The thickness of material applied to the expanded steel lath shall be sufficient to completely fill the spaces between the bar/channel furring above the wall. Additional spray-applied fire resistive material shall be applied to the web of the steel beam. For a 1 hr Assembly Rating, the thickness of material applied to each side of the steel beam web shall be 13/16 in. (21 mm). For a 2 hr Assembly Rating, the thickness of material applied to each side of the steel beam web shall be 1-3/8 in. (35 mm). In addition, the thickness of material applied to the expanded steel lath shall cover the top surface of the lath with a minimum 1-5/8 in. (41 mm) of material for the 1 hr Assembly Rating and 2-5/8 in. (67 mm) of material for the 2 hr Assembly Rating. For D700 floors, the remainder of the steel floor units shall be sprayed as specified in the individual D700 design.

GCP APPLIED TECHNOLOGIES INC — Type MK-10HB, MK-6/HY, MK-6/HY ES, MK-6s, RG

- F1. Spray-Applied Fire Resistive Material\* — (Not Shown) As an alternate to Item 1F - After installation of ceiling runner and Top Track Seal (Item 3A), steel floor units (as applicable) and structural steel support to be sprayed with the min thickness of material specified in the individual D700 or D900 Series Design. The flutes of the steel floor units above the structural steel beam shall be filled with spray-applied fire resistive material across the entire top flange of the steel beam. Each bar or channel furring member (Item 1D) shall be fully covered with spray applied fire resistive material to the minimum thickness of material required on the flanges of the steel beam. SFRM shall not be applied over the joint protection material (Item 3A) but shall cover all other exposed surfaces of the bar or channel furring. The thickness of material applied to the expanded steel lath shall be sufficient to completely fill the spaces between the bar/channel furring above the wall. Additional material shall be applied to the web of the steel beam on each side of the wall. For a 1 hr Assembly Rating, the thickness of material applied to each side of the steel beam web shall be 11/16 in. (18 mm). For a 2 hr Assembly Rating, the thickness of material applied to each side of the steel beam web shall be 1-1/2 in. (38 mm). In addition, the thickness of material applied to the expanded steel lath shall cover the top surface of the lath with a minimum 1-5/8 in. (41 mm) of material for the 1 hr Assembly Rating and 2-5/8 in. (67 mm) of material for the 2 hr Assembly Rating. For D700 floors, the remainder of the steel floor units shall be sprayed as specified in the individual D700 design.

ISOLATEK INTERNATIONAL — Type 300, Type 400



# System No. HW-D-0956

HWD 0956

2. Wall Assembly —The 1 or 2 hr fire rated gypsum board/steel stud wall assembly shall be constructed of the materials and in the manner described 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. Steel Floor and Ceiling Runners —Floor and ceiling runners of wall assembly shall consist of galv steel channels sized to accommodate steel studs (Item 2B). Flange height of ceiling runner shall be min 2 in. (51 mm). Ceiling runner is secured to steel furring (Item 1D) with steel fasteners or welds spaced max 24 in. (610 mm) OC. Ceiling runner to be installed parallel with structural steel support and located such that a max clearance of 12 in. (305 mm) is present between the finished wall and the flange of the steel beam (Item 1C).
- B. Studs —Steel studs to be min 3-1/2 in. (89 mm) wide. Studs cut 1/2 in. to 1 in. (13 to 25 mm) less in length than assembly height with bottom nesting in and secured to floor runner. Studs to nest in ceiling runner without attachment.
- C. Gypsum Board\* —Gypsum board sheets installed to a min total 5/8 in. (16 mm) or 1-1/4 in. (32 mm) thickness on each side of wall for 1 and 2 hr fire rated assemblies, respectively. Wall to be constructed as specified in the individual U400, V400 or W400 Series Design in the UL Fire Resistance Directory except that a max 1-1/2 in. (38 mm) gap shall be maintained between the top of the gypsum board and the spray applied fire resistive material on bottom of steel furring (Item 1D), on both sides of the wall assembly.

The hourly fire rating of the joint system is equal to the hourly fire rating of the wall.

3. Joint System —Max separation between the bottom of the steel furring (Item 1D) and the top of the wall (Item 2C) is 7/8 in. (22 mm), 1 in (25 mm), or 1-1/2 in (38 mm). See Item 3-Table 1 for additional details. The joint system consists of a fill material installed on the ceiling runner as follows:

- A. Fill, Void or Cavity Material\* — Top Track Seal —Factory supplied foam seal sized to width of ceiling runner and installed over the ceiling runner (Item 2A) prior to attachment of the runner, in accordance with the installation instructions. Butt joints in Top Track Seal to be compressed min 1/2 in. (13 mm).

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CFS-TTS MD OS or CFS-TTS MD 600 Firestop Top Track Seal

Table 1

Max Nom Joint Width, In. (mm)	Max Movement Capabilities, (% of nominal)		Max Movement, in. (mm)
	Compression	Extension	
7/8 (22)	Compression	86%	3/4 (19)
	Extension	83%	5/8 (16)
1 (25)	Compression	62%	5/8 (16)
	Extension	50%	1/2 (13)
1-1/2 (38)	Compression	92%	1-3/8 (35)
	Extension	0%	0

As an alternative to the movement percentages above, the joint system may move freely without restriction to the percentage of movement within the range of a min 1/8 in. (3.2 mm) to max 1-1/2 in. (38 mm) joint width.

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



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