

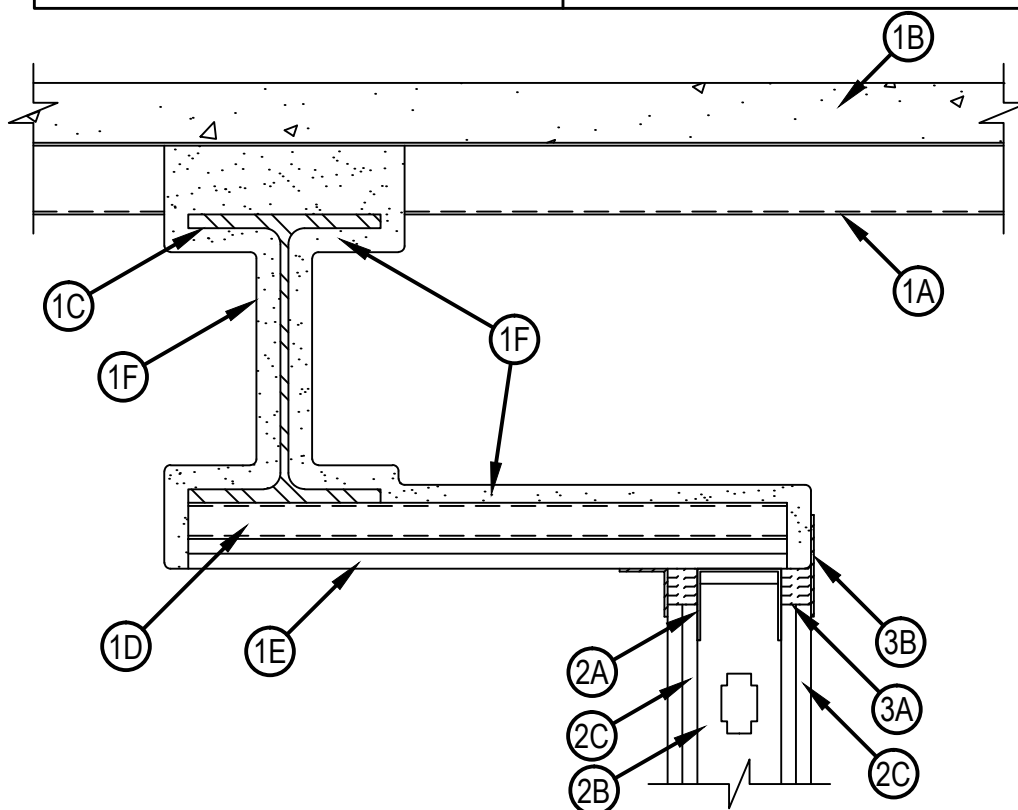


Classified by  
Underwriters Laboratories, Inc.  
to UL 2079 and CAN/ULC-S115

## System No. HW-D-0635

HWD 0635

| ANSI/UL2079  | CAN/ULC S115   |
|--|--|
| Assembly Rating — 1 and 2 Hr (See Items 1 and 2)                     | F Rating — 1 and 2 Hr (See Items 1 and 2)                            |
| Nominal Joint Width - 1-1/2 In.                                      | FT Rating — 1 and 2 Hr (See Items 1 and 2)                           |
| Class II or III Movement Capabilities — 50% Compression or Extension | FH Rating — 1 and 2 Hr (See Items 1 and 2)                           |
| L Rating At Ambient — Less Than 1 CFM/sq ft                          | FTH Rating — 1 and 2 Hr (See Items 1 and 2)                          |
| L Rating At 400 F — Less Than 1 CFM/sq ft                            | Nominal Joint Width - 1-1/2 In.                                      |
|  | Class II or III Movement Capabilities — 50% Compression or Extension |
|  | L Rating At Ambient — Less Than 1 CFM/sq ft                          |
|  | L Rating At 400 F — Less Than 1 CFM/sq ft                            |



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 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 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 Attachment Clips — Min 1 in. (25 mm) wide Z-shaped clips or channels formed from min 16 ga galv or painted steel. Clips to be sized to extend through the thickness of the spray-applied fire-resistive material on the bottom flange of the steel beam with 1-1/2 in. (38 mm) long upper and lower legs. Legs of clips fastened to bottom of beam (prior to application of spray-applied fire-resistive materials) with steel



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fasteners or welds and to ceiling runner of wall with bolts or screws. Clips spaced max 16 in. (406 mm) OC and extend from steel support beam to flush with non-beam face of wall.

E. Gypsum Board\* — Two layers of 5/8 in. (16 mm) thick glass mat faced (moisture resistant) gypsum board applied to bottom of steel attachment clips. The boards are cut to the length of steel attachment clips and secured to each clip. Base layer attached to the clips using 1 in. (25 mm) long Type S bugle-head steel screws spaced 12 in. (305 mm) OC, 1 in. (25 mm) max from ends. Outer layer attached to the clips using 1-5/8 in. (41 mm) long Type S bugle-head steel screws spaced 12 in. (305 mm) OC, 1 in. (25 mm) max from ends. Butted joints are centered over clips and joints in base and outer layers to be offset. Joints and screw heads in outer layer covered with two coats of joint compound.

F. Spray-Applied Fire Resistive Material\* — After installation of the steel attachment clips, the structural steel support and steel floor units (as applicable) are to be sprayed with the min thickness of material specified in the individual D700 or D900 Series Design. Each steel attachment clip to be covered with spray applied fire resistive material after the attachment of the gypsum board (Item 1 E), to the minimum thickness of material required on the flanges of the steel beam and the spaces between the clips shall also be fully filled from beam and over the entire thickness of the wall. Additional material shall be applied to the web of steel beam on each side of wall. The min total thickness of material applied to each side of steel beam web shall be 13/16 in. (21 mm) for 1 hr fire rating and 1-1/2 in. (38 mm) for 2 hr fire rating. When Item 3A is not used, the flutes of the steel floor units are to be filled with material across the entire top flange of the steel beam. For D700 floors, the remainder of the steel floor units shall be sprayed as specified in the individual D700 design.

ISOLATEK INTERNATIONAL — Type 300

W R GRACE & CO - CONN — Type MK-6/HY

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 or V400 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 1/4 in. greater than the extended joint width.. 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). Ceiling runner to be secured through gypsum board material to steel attachment clips with min 2 in. (51 mm) long steel fasteners spaced at a max spacing of 16 in. (406 mm) OC (min one fastener into each clip).

B. Studs — Steel studs to be min 3-1/2 in. (89 mm) wide. Studs cut 1/2 in. to 3/4 in. (13 to 19 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 or V400 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 bottom plane of the spray applied fire resistive material on the 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.



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3. Joint System — Max separation between the gypsum board on the steel attachment clips and top of wall (at time of installation of joint system) is 1-1/2 in. (38 mm). The joint system is designed to accommodate a max 50 percent compression or extension from its installed width. The joint system shall consist of forming and fill materials, as follows:

A. Forming Material\* — Nom 4 pcf (64 kg/m<sup>3</sup>) density mineral wool batt insulation cut to the shape of the fluted steel floor or roof deck units, approx 33 percent larger than the area of the flutes. Pieces compressed and inserted into and completely filling the flutes above the structural support member. As an option, the spray-applied fire resistive material described in Item 1 can be used in place of the packing material within the area of the flutes. Additional sections of mineral wool batt cut to a thickness equal to the overall thickness of gypsum board and compressed a min of 50 percent into the gap at the top of the gypsum board, flush with both surfaces of the wall assembly.

ROCK WOOL MANUFACTURING CO — Delta Board

ROXUL INC — SAF Mineral Wool

THERMAFIBER INC — Type SAF

A1. Forming Material\* - Strips — As an alternate to Item 3A, the strips are stacked to a height twice larger than the distance between the top of the gypsum board and the bottom of the steel floor unit. Strips compressed 50 percent and installed within ceiling runner above top of liner panel flush with the inside surface of the panel. Strips compressed and installed on finished side of the wall between the top of the gypsum board and the bottom of the steel floor units, flush with the surface of the wall.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 767 Speed Strips or CP 777 Speed Plugs

B. Fill, Void or Cavity Material\* - Sealant — Min 1/16 in. (1.6 mm) dry thickness (1/8 in. or 3.2 mm wet thickness) fill material sprayed or troweled on each side of wall to completely cover mineral wool forming material and to overlap min 1/2 in. (13 mm) onto wall and min 2 in. (51 mm) onto spray-applied fire resistive material.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP672 Firestop Spray or CFS-SP WB Firestop Joint Spray

\*Bearing the UL Classification Mark



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