

## XHBN.HW-D-0218 - Joint Systems

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

## XHBN - Joint Systems

### XHBN7 - Joint Systems Certified for Canada

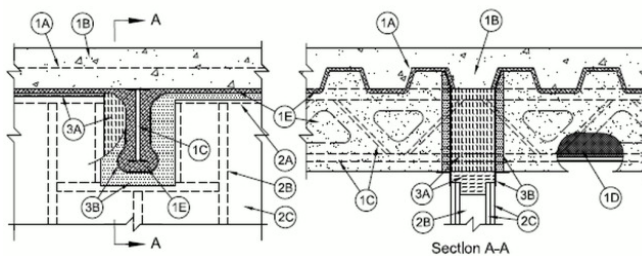
[See General Information for Joint Systems](#)

[See General Information for Joint Systems Certified for Canada](#)

#### System No. HW-D-0218

December 03, 2020

ANSI/UL2079	CAN/ULC S115
Assembly Ratings — 1 and 2 Hr (See Item 2)	F Ratings — 1 and 2 Hr (See Item 2)
Nominal Joint Width - 1-1/2 In.	FT Ratings — 1 and 2 Hr (See Item 2)
Class II Movement Capabilities — 25% Compression or Extension	FH Ratings — 1 and 2 Hr (See Item 2)
L Rating At Ambient — Less Than 1 CFM/in ft	FTH Ratings — 1 and 2 Hr (See Item 2)
L Rating At 400 F — Less Than 1 CFM/in ft	Nominal Joint Width - 1-1/2 In.
	Class II Movement Capabilities — 25% Compression or Extension
	L Rating At Ambient — Less Than 1 CFM/in ft
	L Rating At 400 F — Less Than 1 CFM/in ft



**1. Floor Assembly** — The fire-rated fluted steel floor unit/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 Fire Resistance Directory and shall include the following construction features:

**A. Steel Floor and Form 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 (Optional) - Steel beam or open-web steel joist, as specified in the individual D700 or D900 Series Floor-Ceiling Design, used to support steel floor units. Structural steel support oriented perpendicular to wall assembly.** — Steel beam or open-web steel joist, as specified in the individual D700 or D900 Series Floor-Ceiling Design, used to support steel floor units. Structural steel support oriented perpendicular to wall assembly.

**D. Steel Lath** — Where open-web steel joists pass through the fire rated wall, 3/8 in. diamond mesh expanded steel lath having a nom weight of 1.7 to 3.4 lb per sq yd (0.9 to 1.8 kg/m<sup>2</sup>) shall be secured to one side of each joist with steel tie wire and the lath shall be fully covered with no min thickness requirement.

**E. Spray-Applied Fire Resistive Material\*** — After the installation of the ceiling runner, (Item 2A, 2A1 or 2A2) steel floor units to be sprayed with the thickness of material specified in the individual D700 Series Design or the structural steel supports to be sprayed in accordance with the specifications in the individual D900 Series Design. Material is to be excluded from the steel floor units, directly above the gypsum board and from the flanges of the ceiling runners.

**ISOLATEK INTERNATIONAL** — Type 300, Type 400

**GCP APPLIED TECHNOLOGIES INC** — Types MK-6/HY or MK-10HB

**1A. Roof Assembly** — (Not Shown) — As an alternate to the floor assembly, a fire rated fluted steel deck roof assembly may be used. The roof assembly shall be constructed of the materials and in the manner described in the individual P700 or P900 Series Roof-Ceiling Design in the UL Fire Resistance Directory. The hourly rating of the roof assembly shall be equal to or greater than the hourly rating of the wall assembly. The roof assembly shall include the following construction features as applicable:

**A. Steel Roof Deck** — Max 3 in. (76 mm) deep galv steel fluted roof deck.

**B. Roof Insulation** — Min 2-1/4 in. (57 mm) thick poured insulating concrete, as measured from the top plane of the steel roof deck.

**C. Structural Steel Support — (Optional) - Steel beam or open-web steel joist, as specified in the individual P700 or P900 Series Roof-Ceiling Design, used to support steel roof deck. Structural steel support oriented perpendicular to wall assembly.** Steel beam or open-web steel joist, as specified in the individual P700 or P900 Series Roof-Ceiling Design, used to support steel roof deck. Structural steel support oriented perpendicular to wall assembly.

**D. Steel Lath** — Where open-web steel joists pass through the fire rated wall, 3/8 in. diamond mesh expanded steel lath having a nom weight of 1.7 to 3.4 lb per sq yd (0.9 to 1.8 kg/m<sup>2</sup>) shall be secured to one side of each joist with steel tie wire and the lath shall be fully covered with no min thickness requirement.

**E. Spray-Applied Fire Resistive Material\*** — After the installation of the ceiling runner, (Item 2A, 2A1 or 2A2) steel roof deck to be sprayed with the thickness of material specified in the individual P700 Series Design or the structural steel supports to be sprayed in accordance with the specifications in the individual P700 or P900 Series Design. Material is to be excluded from the steel roof deck, directly above the gypsum board and from the flanges of the ceiling runners.

**ISOLATEK INTERNATIONAL** — Type 300, Type 400

**GCP APPLIED TECHNOLOGIES INC** — Types MK-6/HY or MK-10HB

**2. Wall Assembly\*** — The 1 or 2 h fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified 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 min No. 25 gauge galv steel channels sized to accommodate steel studs (Item 2B). Flange height of ceiling runner shall be min 1/4 in. (6 mm) greater than max extended joint width. Ceiling runner centered beneath and parallel with valley of steel floor units (Item 1A). Ceiling runner secured to steel floor units with masonry anchors, steel fasteners or welds spaced max 24 in. (610 mm) OC. A clearance of 1-1/2 in. (38 mm) shall be maintained between the ceiling runner and the spray-applied fire resistive material on the structural steel support members.

**A1 Light Gauge Framing\*-Slotted Ceiling Runner** — As an alternate to the ceiling runner in Item 2A, slotted ceiling runner to consist of galv steel channel with slotted flanges sized to accommodate steel studs (Item 2B). Slotted ceiling runner installed parallel to direction of fluted steel deck, centered beneath valley, prior to the application of spray-applied fire resistive material, and secured with steel masonry anchors, steel fasteners or welds spaced max 24 in. (610 mm) OC.

**BRADY CONSTRUCTION INNOVATIONS INC, DBA SLIPTRACK SYSTEMS** — SLP-TRK, SLPTRK325

**CALIFORNIA EXPANDED METAL PRODUCTS CO** — CST, CST325

**CLARKDIETRICH BUILDING SYSTEMS** — Types SLT, SLT-H

**MARINO/WARE, DIV OF WARE INDUSTRIES INC** — Type SLT

**RAM SALES L L C** — RAM Slotted Track

A2. **Light Gauge Framing\*-Vertical Deflection Ceiling Runner** — As an alternate to the ceiling runners in Item 2A and 2A1, vertical deflection ceiling runner to consist of galv steel channel with slotted vertical deflection clips mechanically fastened within runner. Slotted clips, pushed with step bushings, for permanent fastening of steel studs. Flanges sized to accommodate steel studs (Item 2B). Vertical deflection ceiling runner installed parallel to direction of fluted steel deck, centered beneath valley, prior to the application of spray-applied fire resistive material, and secured with steel masonry anchors, steel fasteners or welds spaced max 24 in. (610 mm) OC.

A3. **Light Gauge Framing\*- Notched Ceiling Runner** — As an alternate to the ceiling runners in Items 2A through 2A2, notched ceiling runners to consist of C-shaped galv steel channel with notched return flanges sized to accommodate steel studs (Item 2B). Notched ceiling runner installed parallel to direction of fluted steel deck, centered beneath valley, prior to the application of spray-applied fire resistive material, and secured with steel masonry anchors, steel fasteners or welds spaced max 24 in. (610 mm) OC.  
**OLMAR SUPPLY INC** — Type SCR

A4. **Light Gauge Framing\* — Slotted Ceiling Runner** — As an alternate to the ceiling runner in Item 2A through 2A3, ceiling runner to consist of galv steel channel with slotted flanges sized to accommodate steel studs (Item 2B). Flange height of slotted ceiling runner shall be 3-1/4 in. (83 mm) with 2 in. (51 mm) deep slots. Slotted ceiling runner installed parallel to direction of fluted steel deck, centered beneath valley, prior to the application of spray-applied fire resistive material, and secured with steel masonry anchors, steel fasteners or welds spaced max 24 in. (610 mm) OC.  
**SCAFCO STEEL STUD MANUFACTURING CO** — Slotted Track-Type SDLT

B. **Studs** — Steel studs to be min 3-5/8 in. (92 mm) wide. Studs cut 1/2 to 3/4 in. (13 to 19 mm) less in length than assembly height with bottom nesting in, resting on and fastened to the floor runner and with top nesting in ceiling runner without attachment. When slotted ceiling runner (Item 2A1) is used, steel studs secured to slotted ceiling runner with No. 8 by 1/2 in. (13 mm) long wafer head steel screws at midheight of slot on each side of wall. When vertical deflection runner (Item 2A2) is used, studs secured to vertical clip through slip bushing, supplied, with No.8 by 1/2 in. (13 mm) steel screws at midheight of slot of each slot. When slotted ceiling runner (Item 2A4) is used, steel studs cut in lengths 3/4 to 1-3/4 in. (19 to 44 mm) less than floor to ceiling height and secured to slotted ceiling runner with No. 8 by 1/2 (13 mm) long wafer head steel screws at +/- 3/16 in. (5 mm) of the mid-height of slot on each side of wall. A framed opening shall be constructed around each steel structural member A min clearance of 1 in. (25 mm) to a max of 4 in. (102 mm) shall be maintained between the framing and the spray-applied fire resistive material on the two sides of the structural support. The clearance between the framing and the spray-applied fire resistive material on the bottom of the structural steel support shall be max 2 in. (51 mm). Stud spacing not to exceed 24 in. (610 mm) OC.

C. **Gypsum Board\*** — 5/8 in. (16 mm) thick, 4 ft (1.2 m) wide with square or tapered edges. The gypsum board type, number of layers and sheet orientation shall be as specified in the individual U400, V400 or W400 Series Design in the Fire Resistance Directory, except that a max 1-1/2 in. (38 mm) gap shall be maintained between top of gypsum board and bottom plane of steel floor units and between the top edge of the gypsum board and the spray applied fire resistive material on the structural steel support. The top row of screws shall be installed into the studs 1-1/2 to 2 in. (38 to 51 mm) below the bottom of the ceiling runner.  
**The hourly ratings of the joint system are dependent on the hourly rating of the wall.**

3. **Joint System — Max separation between bottom of floor units and top of gypsum board at time of installation is 1-1/2 in. (38 mm). Max separation between spray-applied fire resistive material on bottom of structural support and framed opening in top of wall is 2 in. (51 mm). The joint system is designed to accommodate a max 25 percent compression or extension from its installed width.** The joint system consists of a forming material and a fill material between the top of the gypsum board and the bottom of the floor, as follows  
A. **Forming Material\*** — Nominal 4 in. (102 mm) thick pieces of nominal 4 pcf (64 kg/m<sup>3</sup>) forming material, sized to be flush with both surfaces of wall, placed to fully fill the framed opening around the structural steel support. Forming material to be installed with fibers vertical along the sides of the beam and pieces sized to attain a min compression rate of 25 percent in the thickness direction. Forming material to be installed with fibers horizontal at the bottom of the beam and pieces sized to attain a min compression rate of 50 percent in the thickness direction. Additional mineral wool batt insulation cut into strips to fill the gap between top of the gypsum board and bottom of floor units. Width of the strips shall be equal to the total thickness of the gypsum board. The strips of mineral wool shall be compressed 50 percent in thickness and firmly packed into the gap between the top of gypsum board and bottom of floor units.  
**INDUSTRIAL INSULATION GROUP L L C** — MinWool-1200 Safing

**JOHNS MANVILLE** — Safing

**ROCK WOOL MANUFACTURING CO** — Delta Board

**ROCKWOOL** — SAFE

**THERMAFIBER INC** — Type SAF

B. **Fill, Void or Cavity Material\* - Sealant** — A min 1/16 in. (1.6 mm) dry thickness (min 1/8 in. or 3.2 mm wet thickness) of 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 gypsum board and min 2 in. (51 mm) onto the steel floor units or the spray applied material on the steel floor unit and on the structural support member on both sides of wall.  
**HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC** — CFS-SP WB Firestop Joint Spray

**\* 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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