



# XHBN.HW-D-0570 - 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

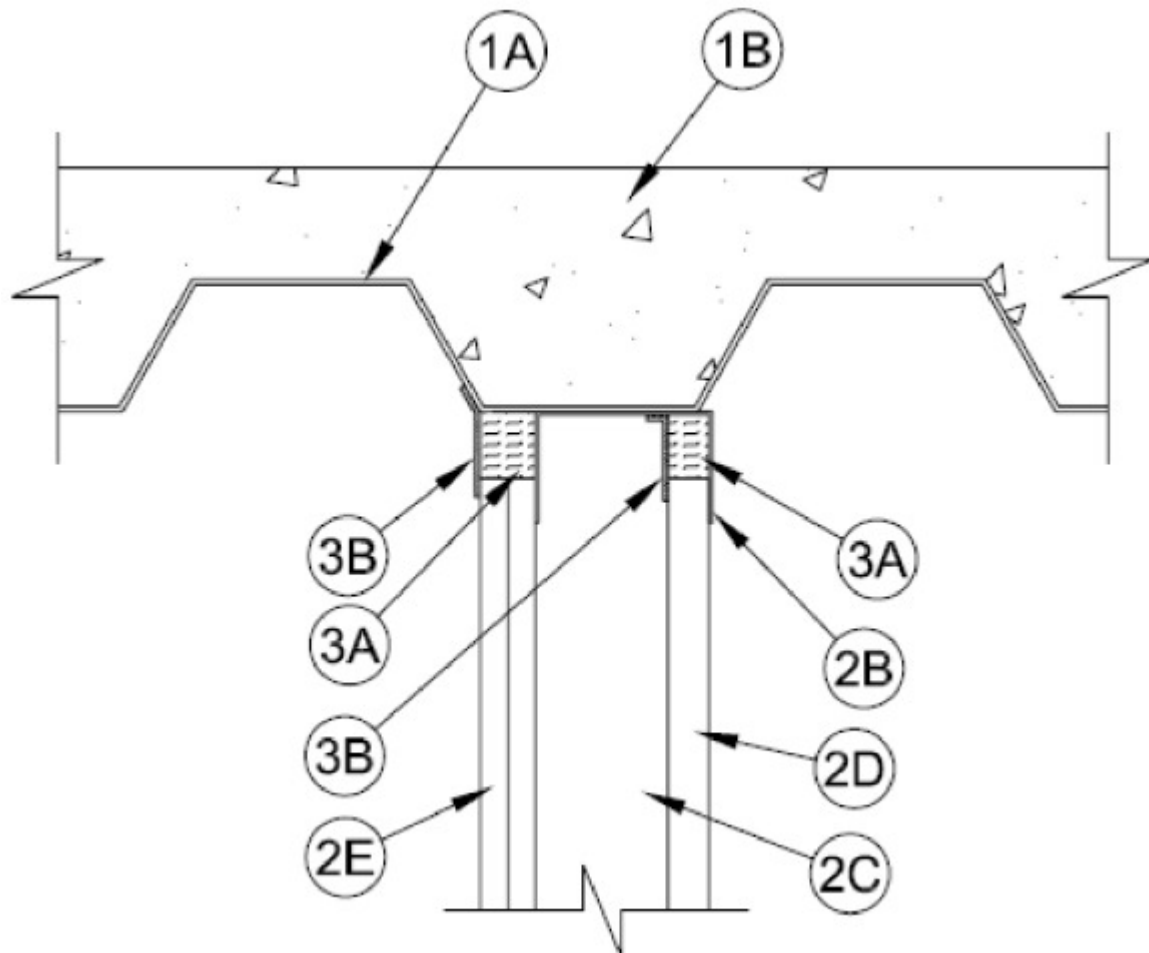
See General Information for Joint Systems

See General Information for Joint Systems Certified for Canada

### System No. HW-D-0570

September 01, 2016

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 — 50% Compression and Extension	FH Ratings — 1 and 2 Hr (See Item 2)
L Rating At Ambient — Less Than 1 CFM/Lin Ft	FTH Ratings — 1 and 2 Hr (See Item 2)
L Rating At 400°F — Less Than 1 CFM/Lin Ft	Nominal Joint Width - 1-1/2 In.
	Class II Movement Capabilities — 50% Compression and Extension
	L Rating At Ambient — Less Than 1 CFM/Lin Ft
	L Rating At 400°F — Less Than 1 CFM/Lin 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 or D900 Series Floor-Ceiling Design in the UL Fire Resistance Directory. The floor assembly shall include the following construction features:

A. **Steel Floor and Form Units\*** — Max 3 in. (76 mm) deep galv fluted floor units.

B. **Concrete** — Min 2-1/2 in. (64 mm) thick lightweight or normal weight (100-150 pcf or 1600-2400 kg/m<sup>3</sup>) concrete, as measured from the top plane of the floor units.

C. **Spray-Applied Fire Resistive Materials\*** — (Optional, Not Shown) — Prior to or after installation of the steel ceiling runners (Item 2B) the steel floor units may be sprayed with a min 5/16 in. (8 mm) to max 1 3/4 in. (45 mm) thickness of fire resistive material.

**ISOLATEK INTERNATIONAL** — Type 300

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

D. **Steel Attachment Clips** — (Optional, Not Shown) - Used to secure ceiling runner when spray-applied fire resistive material is applied to floor units prior to installation of ceiling runner or wall. Z-shaped clips formed from 1 in. (25 mm) wide strips of min 20 ga galv steel. Clips to be sized to extend through the thickness of the spray-applied fire-resistive material on the floor units with 1-1/2 in. (38 mm) long upper and lower legs. Legs of clips fastened to bottom of roof deck (prior to application of spray-applied fire-resistive materials) with steel fasteners or welds. Clips spaced max 16 in. (406 mm) OC and extend to within 1/4 to 3/4 in. (6 to 19 mm) from the surface of the wall.

**1A. Roof Assembly** — 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 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:

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.

1B. **Roof Assembly** — As an alternate to Items 1 and 1A, a fire rated protected 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 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:

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

B. **Steel Attachment Clips** — (Optional. Not Shown) - Used to secure ceiling runner when spray-applied fire resistive material is applied to roof deck prior to installation of ceiling runner of wall. Z-shaped clips formed from 1 in. (25 mm) wide strips of min 20 ga galv steel. Clips to be sized to extend through the thickness of the spray-applied fire-resistive material on the roof deck with 1-1/2 in. (38 mm) long upper and lower legs. Legs of clips fastened to bottom of roof deck (prior to application of spray-applied fire-resistive materials) with steel fasteners or welds. Clips spaced max 16 in. (406 mm) OC and extend to within 1/4 to 3/4 in. (6 to 19 mm) from the surface of the wall.

C. **Spray—Applied Fire Resistive Materials\*** — (Not Shown)—Prior to or after the installation of the steel ceiling runners, the roof assembly shall be sprayed with the type and thickness of fire resistive material indicated in the individual P700 Series design.

**ISOLATEK INTERNATIONAL** — Type 300

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2. **Shaft Wall Assembly** — The 1 hr or 2 hr fire rated gypsum board/steel stud shaft 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. **Floor and Wall Runners** — (Not Shown) - J-shaped runner, equal in width to steel studs (Item 2C), with unequal legs of 1 in. (25 mm) and 2 in. (51 mm), fabricated from 24 MSG galv steel. Runners positioned with short leg toward finished side of wall. Runners attached to floor with steel fasteners located not greater than 2 in. (51 mm) from ends and not greater than 24 in. (610 mm) OC.

B. **Ceiling Runner** — Ceiling runner of wall assembly shall consist of galv steel channel sized to accommodate steel studs (Item 2C). Flange height of ceiling runner shall be min 1/4 in. (6 mm) greater than max extended joint width. Ceiling runner installed parallel with direction of fluted steel deck and secured to steel deck valley before or after optional spray-applied fire resistive material is used with steel fasteners or welds spaced max 24 in. (610 mm) OC or to steel attachment clips (Item 1D) with steel fasteners or welds spaced max 16 in. (406 mm) OC.. The use of welds to secure the ceiling runner may only be used prior to the installation of the optional spray-applied material.

B1. **Light Gauge Framing\* - Slotted Ceiling Runner** — As an alternate to the ceiling runner in Item 2B, slotted ceiling runner to consist of galv steel channel with slotted flanges sized to accommodate steel studs (Item 2C). Flange height of slotted ceiling runner shall be min 1/4 in. (6 mm) greater than max extended joint width. Slotted ceiling runner installed parallel with direction of fluted steel deck and secured to steel deck valley as described in Item B.

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

**CALIFORNIA EXPANDED METAL PRODUCTS CO** — CST

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

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

**METAL-LITE INC** — The System

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

**SCAFCO STEEL STUD MANUFACTURING CO** — Slotted Track

**TELLING INDUSTRIES L L C** — True-Action Deflection Track

**B2. Light Gauge Framing\* — Slotted Ceiling Runner** — As an alternate to the ceiling runner in Item 2B through 2B1, slotted ceiling runner to consist of galv steel channel, sized to accommodate steel studs (Item 2C). 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 with direction of fluted steel deck and secured to steel deck valley with steel masonry anchors, steel fasteners or welds as described in Item B.

**SCAFCO STEEL STUD MANUFACTURING CO** — Slotted Track-Type SDLT

**C. Steel Studs** — C-H-shaped studs, min 4 in. (102 mm) wide by 1-1/2 in. (38 mm) deep, fabricated from 25 MSG galv steel, cut to lengths 3/4 to 1 in. (19 to 25 mm) less than floor to ceiling height and spaced 24 in. (610 mm) OC. When slotted ceiling runner specified in Item 2B2 is used the C-H-shaped studs cut in lengths 3/4 to 1-3/4 in. (19 to 44 mm) less than floor to ceiling height and spaced 24 in. (610 mm) OC.

**D. Gypsum Board\*** — Nom 1 in. (25 mm) thick gypsum board liner panels. Panels cut 1-1/2 in. (38 mm) less in length than floor to ceiling height. Vertical edges inserted in H-shaped section of C-H studs. At the ends of the assembly, the free edge of the end panels are attached to the long leg of vertical J-runners (Item 2A) with 1-5/8 in. (41 mm) long Type S steel screws spaced max 12 in. (305 mm) OC.

**E. Gypsum Board\*** — Nom 5/8 in. (16 mm) thick gypsum board applied vertically in one or two layers for 1 hr and 2 hr fire rated assemblies, respectively. Panels cut 1-1/2 in. (38 mm) less in length than floor to ceiling height. The screws attaching the gypsum board layers to the C-H studs shall be located 1 to 1-1/2 in. (25 to 38 mm) below the bottom of the ceiling runner or slotted ceiling track. No gypsum board attachment screws are to penetrate the ceiling runner or slotted ceiling track.

**The hourly ratings of the joint system are equal to the hourly fire rating of the wall.**

**3. Joint System — Max separation between bottom of fluted deck surface and top of gypsum board (at the time of installation of the 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 consists of the following:

**A. Forming Material\*** — Min 4 pcf (64 kg/m<sup>3</sup>) density mineral wool batt insulation cut to a thickness twice larger than the distance between the top of the gypsum board and the bottom of the steel floor unit. Material compressed 50 percent and installed within ceiling runner above top of liner panel flush with the inside surface of the panel. Material 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.

**INDUSTRIAL INSULATION GROUP L L C** — MinWool-1200 Safing

**JOHNS MANVILLE** — Safing

**ROCK WOOL MANUFACTURING CO** — Delta Board

**ROCKWOOL** — SAFE

**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

**B. Fill, Void or Cavity Material\*** — Min 1/16 in. (1.6 mm) dry thickness (1/8 in. or 3.2 mm wet thickness) of fill material sprayed or troweled within stud cavity and on finished side of the shaft wall to completely cover mineral wool forming material. Fill material to overlap a min of 1/2 in. (13 mm) onto gypsum board and ceiling runner within stud cavity. Fill material to overlap a min of 1/2 in. (13 mm) onto gypsum board and steel deck on finished side of wall. When spray-applied fire resistive material (Item 1C) is applied to the steel deck, the fill material is to overlap the spray-applied fire resistive material a min of 2 in. (51 mm) on the finished side of the 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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