

# XHBN.HW-D-0750 - 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

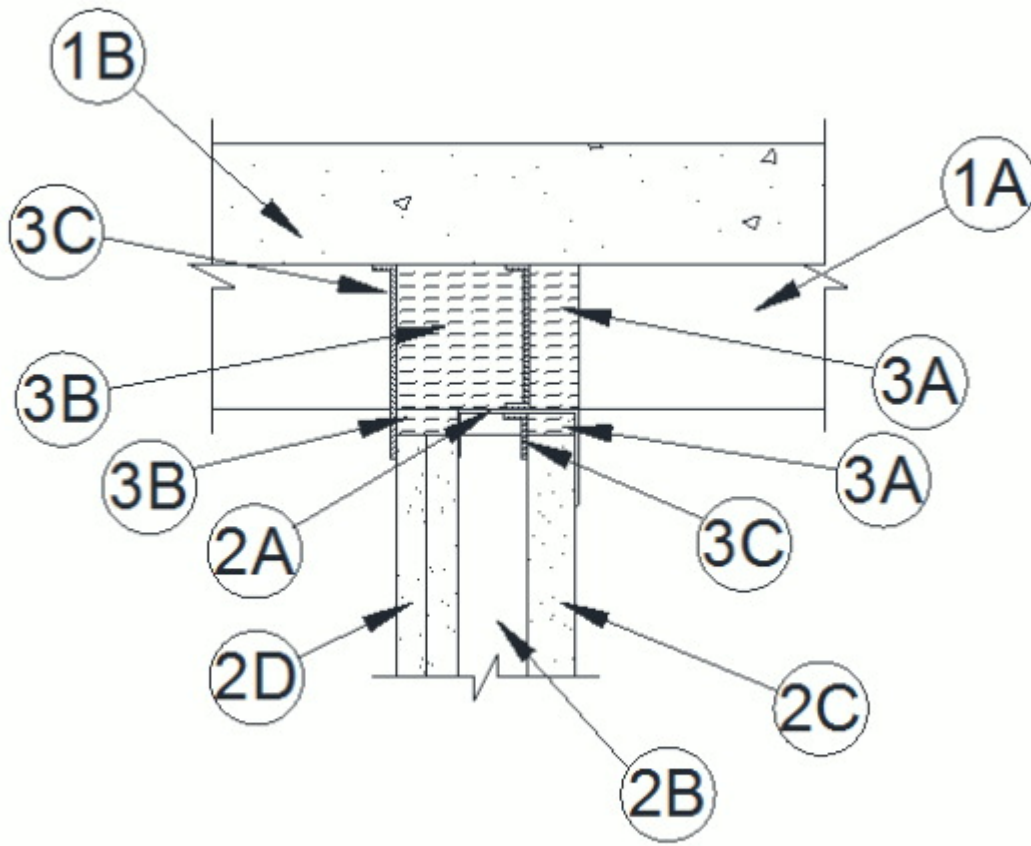
See General Information for Joint Systems

See General Information for Joint Systems Certified for Canada

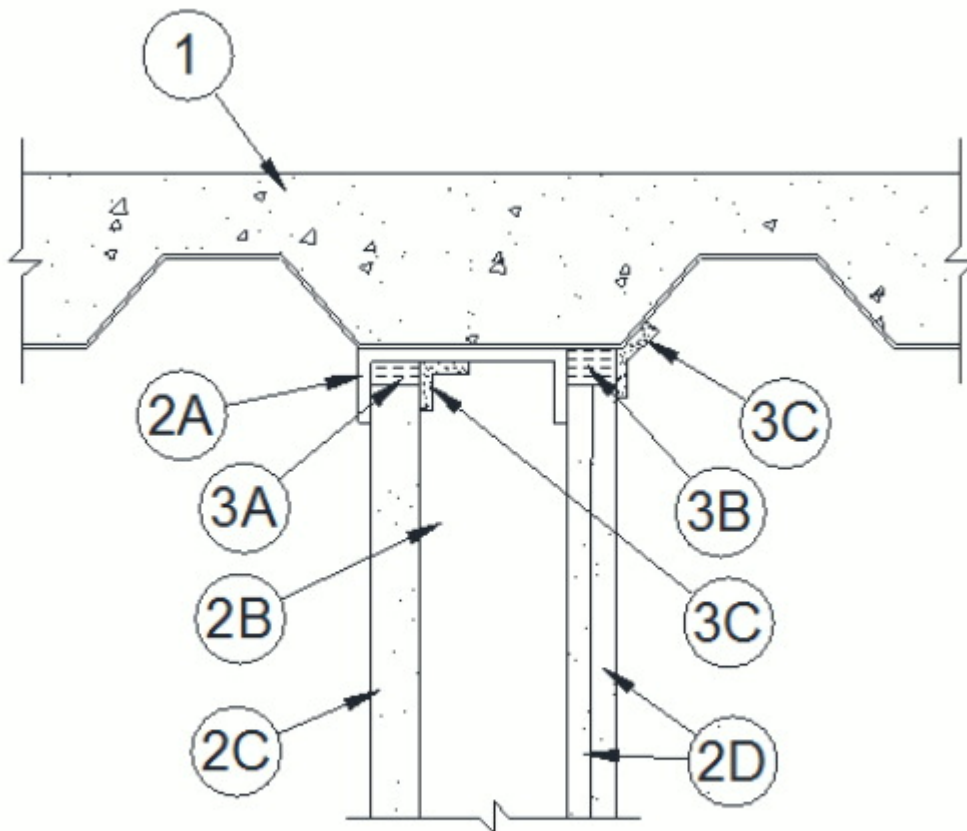
### System No. HW-D-0750

March 16, 2020

ANSI/UL2079	CAN/ULC S115
Assembly Ratings —1 and 2 Hr (See Item 2)	F Ratings —1 and 2 Hr (See Item 2)
Maximum 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/Lin ft	FTH Ratings —1 and 2 Hr (See Item 2)
L Rating At 400 F — Less Than 1 CFM/Lin ft	Maximum Joint Width —1-1/2 In. (38 mm)
	Class II Movement Capabilities — 25 % Compression or Extension
	L Rating At Ambient — Less Than 1 CFM/Lin ft
	L Rating At 400 F — Less Than 1 CFM/Lin ft



CONFIGURATION A



CONFIGURATION B

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 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 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. **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

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 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 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** — (Not Shown) - As an alternate to the floor assembly (Item 1), 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 fire rating of the roof assembly shall be equal to or greater than the hourly fire 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

**GCP APPLIED TECHNOLOGIES INC** — Type MK-6/HY

1C. **Floor Assembly** — As an alternate to the floor assembly (Item 1), min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m<sup>3</sup>) structural concrete. Floor may also be constructed of any UL Classified hollow-core **Precast Concrete Units\***.

See **Precast Concrete Units** (CFTV) in Fire Resistance Directory for names of manufacturers.

2. **Shaft Wall Assembly** — The 1 or 2 hr fire rated 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 Ceiling Runners** — Min 2-1/2 in. (64 mm) wide, and equal in width to the steel wall studs, with legs of min 2-1/2 in. (64 mm), fabricated from min 25 MSG galv steel. Floor runner may also be J-shaped runner, equal in width to steel wall studs, with unequal legs of 1 in. (25 mm) and 2 in. (51 mm), fabricated from min 25 MSG galv steel; runners positioned with short leg toward finished side of wall. Runners attached to floor with steel fasteners spaced max 24 in. (610 mm) OC. Ceiling runner installed parallel with or perpendicular to direction of fluted steel deck and secured to steel deck valley with steel fasteners or welds spaced max 24 in. (610 mm) OC.

A1. **Light Gauge Framing\* - Slotted Ceiling Track** — 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 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 perpendicular to direction of fluted steel deck and secured to steel deck valleys before or after optional spray-applied fire resistive material is used with steel masonry anchors spaced max 12 in. (305 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.

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

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

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

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

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

**SCAFCO STEEL STUD MANUFACTURING CO**

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

A2. **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, 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 perpendicular to direction of fluted steel deck and secured to steel deck valleys as described in Item A1.

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

B. **Steel Studs** — "C-H"-shaped steel studs to be min 2-1/2 in. (64 mm) wide and formed of min 25 MSG galv steel. Studs cut 1 to 1-1/4 in. (25 to 32 mm) less in length than assembly height with bottom nesting in and resting on floor runner and with top nesting in ceiling runner or slotted ceiling track. Studs spaced 24 in. (610 mm) OC. After installation of gypsum board liner panels (Item 2C), studs secured to flange of floor runner on finished side of wall with No. 6 by 1/2 in. (13 mm) long self-drilling, self-tapping steel screws. Studs secured to flange of slotted ceiling track on finished side of wall only with No. 8 by 1/2 in. (13 mm) long self-drilling, self-tapping wafer head steel screws at slot midheight.

C. **Gypsum Board\*** — 1 in. (25 mm) thick by 24 in. (610 mm) wide gypsum board liner panels. Panels cut 1 to 1-1/2 in. (25 to 38 mm) less in length than floor to ceiling height. Vertical edges inserted in "H"-shaped section of "C-H" studs.

Free edge of end panels attached to long leg of "J" runner (Item 2A) with 1-5/8 in. (41 mm) long Type S steel screws spaced max 12 in. (305 mm) OC.

D. **Gypsum Board\*** — Gypsum board sheets, 5/8 in. (16 mm) thick Type C, applied vertically or horizontally in one or two layers for 1 or 2 hr rated walls, respectively, on finished side of wall as specified in the individual U400, V400 or W400 Series Wall and Partition Design. A max 1-1/2 in. (38 mm) gap shall be maintained between the top of the gypsum board and the bottom surface of the floor. The screws attaching the gypsum board layers to the C-H studs shall be located 1 in. (25 mm) below the bottom of the slotted ceiling track (Item 2C). No gypsum board attachment screws are to penetrate the slotted ceiling track.

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

**3. Joint System — Max separation between bottom of fluted deck surface or floor 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 25 percent compression or extension from its installed width.** The joint system consists of the following:

A. **Forming Material\*** — Min 1 in. (25 mm) thickness of 4 pcf (64 kg/m<sup>3</sup>) density mineral wool batt insulation sized to attain a min compression rate of 25 percent in the thickness direction and firmly packed to completely fill the flutes of the steel floor units or roof deck above the ceiling runner (configuration A) as a permanent form. In addition, min 1 in. (25 mm) thickness of 4 pcf (64 kg/m<sup>3</sup>) density mineral wool batt insulation sized to attain a min compression rate of 50 percent in the thickness direction and firmly packed to completely fill the space within ceiling runner directly above the gypsum liner board as a permanent form.

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

**ROCK WOOL MANUFACTURING CO** — Delta Board

**ROCKWOOL** — SAFE

**THERMAFIBER INC** — Type SAF

B. **Forming Material\*** — Min 4 pcf (64 kg/m<sup>3</sup>) density mineral wool batt insulation sized to fill the remainder of the fluted areas above the wall (configuration A) to attain a min compression rate of 25 percent in the thickness direction and firmly packed to completely fill the remainder of the fluted area of the steel floor units or roof deck above the ceiling runner, flush with finished side of wall. In addition, min 5/8 in. (16 mm) thickness for 1 hr rated walls or 1-1/4 in. (32 mm) thickness for 2 hr rated walls of 4 pcf (64 kg/m<sup>3</sup>) density mineral wool batt insulation is cut and sized to attain a min compression rate of 50 percent in the thickness direction and firmly packed to completely fill the space within the joint directly above the gypsum board flush with finished side of 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

B1. **Forming Material\* — Plugs** — As an alternate to the mineral wool in flutes described in Items 3A and 3B, preformed mineral wool plugs, formed to the shape of the fluted floor units or roof deck, cut to the necessary width (1 in. or 25 mm for Item 3A) and friction fit to completely fill the flutes above the ceiling runner. The plugs shall project beyond the finished side of the ceiling runner, flush with wall surface.

**HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC** — CP777 Speed Plugs

**B2. Forming Material\* - Strips** — As an alternate to the mineral wool packed within joint above shaft liner board and finished side gypsum board as described in Items 3B and 3A, the strips are stacked to a height twice larger than gap, compressed 50%, and tightly packed within the space between the top of the gypsum board and the bottom of the ceiling runner, floor or bottom of mineral wool within flutes of steel floor unit or roof deck, flush with finished side of wall. In addition, strips are compressed 50 percent and installed within ceiling runner above top of gypsum liner panel flush with the inside surface of the panel.

**HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC** — CP 767 Speed Strips

**C. Fill, Void or Cavity Material\*** — Min 1/8 in. or 3.2 mm wet thickness (1/16 in. (1.6 mm) dry 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 (Items 3A and 3B). 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 or floor on finished side of wall. Fill material to overlap a min of 1/2 in. (13 mm) onto steel deck or floor and ceiling runner and gypsum liner panel on unfinished 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).

**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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