

## XHBN.HW-D-0747 - 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

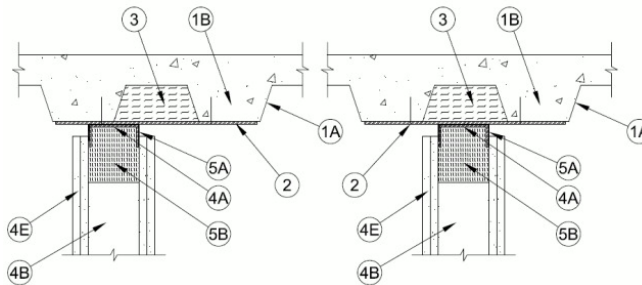
[See General Information for Joint Systems](#)

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

#### System No. HW-D-0747

February 22, 2018

ANSI/UL2079	CAN/ULC S115
Assembly Ratings - 1 and 2 Hr (See Item 4)	F Ratings - 1 and 2 Hr (See Item 4)
Nominal Joint Width - 1 In.	FT Ratings - 1 and 2 Hr (See Item 4)
Class II Movement Capabilities - 100% Compression or Extension	FH Ratings - 1 and 2 Hr (See Item 4)
L Rating At Ambient - Less Than 1 CFM/Lin FT	FTH Ratings - 1 and 2 Hr (See Item 4)
L Rating At 400 F - Less Than 1 CFM/Lin FT	Nominal Joint Width - 1 In.
	Class II Movement Capabilities - 100% Compression or Extension
	L Rating At Ambient - Less Than 1.55 L/s/m
	L Rating At 204°C - Less Than 1.55 L/s/m



**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 Floor-Ceiling Design in the 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.

**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.

**2. Steel Plate** — Min 16 MSG (0.059 in. or 1.5 mm thick) galv steel plate cut to a width to span the flute and to overlap min 1-1/2 in. (38 mm) on the adjacent valleys of fluted floor or roof assembly. Plate continuous above wall and fastened to floor or roof assembly with 1/4 in. (6 mm) diam by 1-1/4 in. (32 mm) long steel concrete anchors or with min 0.145 in. diam by min 3/4 in. (19 mm) long steel powder actuated fasteners spaced max 24" (610 mm) OC.

**3. Forming Material\*** — Mineral wool batt insulation, nom 4 pcf (64 kg/m<sup>3</sup>), cut to the shape of the fluted floor units, friction fit to completely fill the flutes above the steel plate. Adjacent lengths of batts to be tightly butted with butted seams spaced min 24 in. (610 mm) apart along the length of the plugs.

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

**JOHNS MANVILLE** — Safing

**ROCK WOOL MANUFACTURING CO** — Delta Board

**ROCKWOOL MALAYSIA SDN BHD** — SAFE

**ROCKWOOL** — SAFE

**THERMAFIBER INC** — Type SAF

**A. Forming Material\*** — As an option to Item 3, preformed mineral wool plugs, formed to the shape of the fluted floor units, friction fit to completely fill the flutes above the steel plate. Adjacent lengths of batts to be tightly butted with butted seams spaced min 24 in. (610 mm) apart along the length of the plugs.

**THERMAFIBER INC** — TopStop mineral wool deck plugs Type SAF batts

**4. Wall Assembly** — The 1 or 2 hr fire-rated gypsum board/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 4B). Length of flange to equal fully extended width of joint plus 1/4 in. (6 mm). Ceiling runner secured to steel plate with two No. 8 self-drilling, self-tapping steel screws spaced 24 in. (610 mm) OC. Where ceiling runner overlaps floor or roof assembly, fasten with steel masonry anchors spaced max 24 in. (610 mm) OC or min 3/4 in. (19 mm) long steel masonry or powder actuated fasteners spaced at a max of 24 in. (610 mm) OC.

**A1. Light Gauge Framing\* - Vertical Deflection Ceiling Runner** — As an alternate to the ceiling runner in Item 4A, vertical deflection ceiling runner to consist of galv steel channel with slotted vertical deflection clips mechanically fastened within runner. Slotted clip provided with step bushings for permanent fastening of steel studs. Flanges sized to accommodate steel studs (Item 4B). Vertical deflection ceiling runner secured to steel plate with two No. 8 self-drilling, self-tapping steel screws spaced 24 in. (610 mm) OC. Where ceiling runner overlaps floor or roof assembly, fasten with steel masonry anchors spaced max 24 in. (610 mm) OC or min 3/4 in. (19 mm) long steel masonry or powder actuated fasteners spaced at a max of 24 in. (610 mm) OC.

**THE STEEL NETWORK INC** — VertiTrack VTD358, VTD400, VTD600 and VTD800

**A2. Light Gauge Framing\* - Notched Ceiling Runner** — As an alternate to the ceiling runners in Items 4A or 4A1, notched ceiling runners to consist of C-shaped galv steel channel with notched return flanges sized to accommodate steel studs (Item 4B). Notched ceiling runner secured to steel plate with two No. 8 self-drilling, self-tapping steel screws spaced 24 in. (610 mm) OC. Where ceiling runner overlaps floor or roof assembly, fasten with steel masonry anchors spaced max 24 in. (610 mm) OC or min 3/4 in. (19 mm) long steel masonry or powder actuated fasteners spaced at a max of 24 in. (610 mm) OC.

**OLMAR SUPPLY INC** — Type SCR

**A3. Light Gauge Framing\* - Slotted Ceiling Runner** — As an alternate to the ceiling runner in Items 4A through 4A2, ceiling runner to consist of galv steel channel with slotted flanges sized to accommodate steel studs (Items 4B). Ceiling runner secured to steel plate with two No. 8 self-drilling, self-tapping steel screws spaced 24 in. (610 mm) OC. Where ceiling runner overlaps floor or roof assembly, fasten with steel masonry anchors spaced max 24 in. (610 mm) OC or min 3/4 in. (19 mm) long steel masonry or powder actuated fasteners spaced at a max of 24 in. (610 mm) OC.

CALIFORNIA EXPANDED METAL PRODUCTS CO — CST

CLARKDIETRICH BUILDING SYSTEMS — Type SLT, SLT-H

METAL-LITE INC — The System

RAM SALES L L C — RAM Slotted Track

SCAFCO STEEL STUD MANUFACTURING CO — Slotted Track

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Type SLT slotted track

B. **Studs** — Steel studs to be min 3-1/2 in. (89 mm) wide. Studs cut 1 in. (25 mm) less in length than assembly height with bottom nesting in and resting on floor runner and with top nesting in ceiling runner without attachment. When vertical deflection ceiling runner (Item 4A1) is used, steel studs secured to slotted vertical deflection clips, through bushings, with steel screws at mid-height of each slot. When slotted ceiling runner (Item 4A3) is used, steel studs secured to slotted ceiling runner with No. 8 by 1/2 in. (13 mm) long wafer head steel screws at mid-height of slot on each side of wall. Stud spacing not to exceed 24 in. (610 mm) OC.

C. **Batts and Blankets\*** — (Not Shown) — As an alternate to the forming material (Item 5B), min 2.5 pcf (40 kg/m<sup>3</sup>) mineral wool batt insulation, of a width and thickness to completely fill stud cavity. Insulation batts friction fit to completely fill all stud cavities below the bottom surface of the steel ceiling runner.

See **Batts and Blankets** (BZIZ) category in the Fire Resistance Directory for names of manufacturers.

D. **Batts and Blankets\*** — (Not Shown) — In 1 hr fire rated wall assemblies as an alternate to the forming material (Item 5B), any glass fiber insulation bearing the UL Classification Marking as to fire resistance or surface burning characteristics, of a width and thickness to completely fill stud cavity. Insulation batts friction fit to completely fill all stud cavities below the bottom surface of the steel ceiling runner. At the steel ceiling runner, the top 6 in. (152 mm) section of insulation to be folded back upon itself to double the density at this location.

See **Batts and Blankets** (BZIZ) category in the Fire Resistance Directory for names of manufacturers.

E. **Gypsum Board\*** — Gypsum board sheets installed to a min total thickness of 5/8 in. (16 mm) and 1-1/4 in. (32 mm) on each side of wall for 1 and 2 hr fire rated assemblies, respectively. Wall to be constructed as specified in the individual Wall and Partition Design in the UL Fire Resistance Directory, except that a nom 1 in. (25 mm) gap shall be maintained between the top of the gypsum board and the bottom surface of the steel plate. The top row of screws shall be installed into the steel studs 1 to 5 in. (25 to 127 mm) below the bottom edge of the ceiling runner flange.

**The hourly fire rating of the joint system is dependent on the hourly fire rating of the wall assembly in which it is installed.**

5. **Joint System** — Max separation between bottom of steel plate and top of gypsum board is 1 in. (25 mm). The joint system is designed to accommodate a max 100 percent compression or extension from its installed width. The joint system consists of the following:

A. **Fill, Void or Cavity Material\*** — Factory-supplied intumescent gasket installed and nominally centered over the ceiling runner (Item 4A, 4A1, 4A2, 4A3) prior to attachment to underside of steel plate. Gypsum wallboard layers to be installed on both sides of the wall maintaining a minimum 1/8 in. (3 mm) overlap over the intumescent gasket at time of installation.

**SPECIFIED TECHNOLOGIES INC** — Speed Flex Track Top Gasket

B. **Forming Material\*** — When stud cavities are not filled with mineral wool batt insulation or glass fiber insulation (Items 4C or 4D), nom 4 in. (102 mm) thick by 6 in. (152 mm) wide sections of 4 pcf (64 kg/m<sup>3</sup>) mineral wool batt insulation installed between studs (Item 4B) flush with the bottom surface of the steel ceiling runner.

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

**JOHNS MANVILLE** — Safing

**ROCK WOOL MANUFACTURING CO** — Delta Board

**ROCKWOOL MALAYSIA SDN BHD** — Safe

**ROCKWOOL** — Safe

**THERMAFIBER INC** — SAF

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

**Last Updated** on 2018-02-22

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