

XHBN.HW-D-0564 - 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

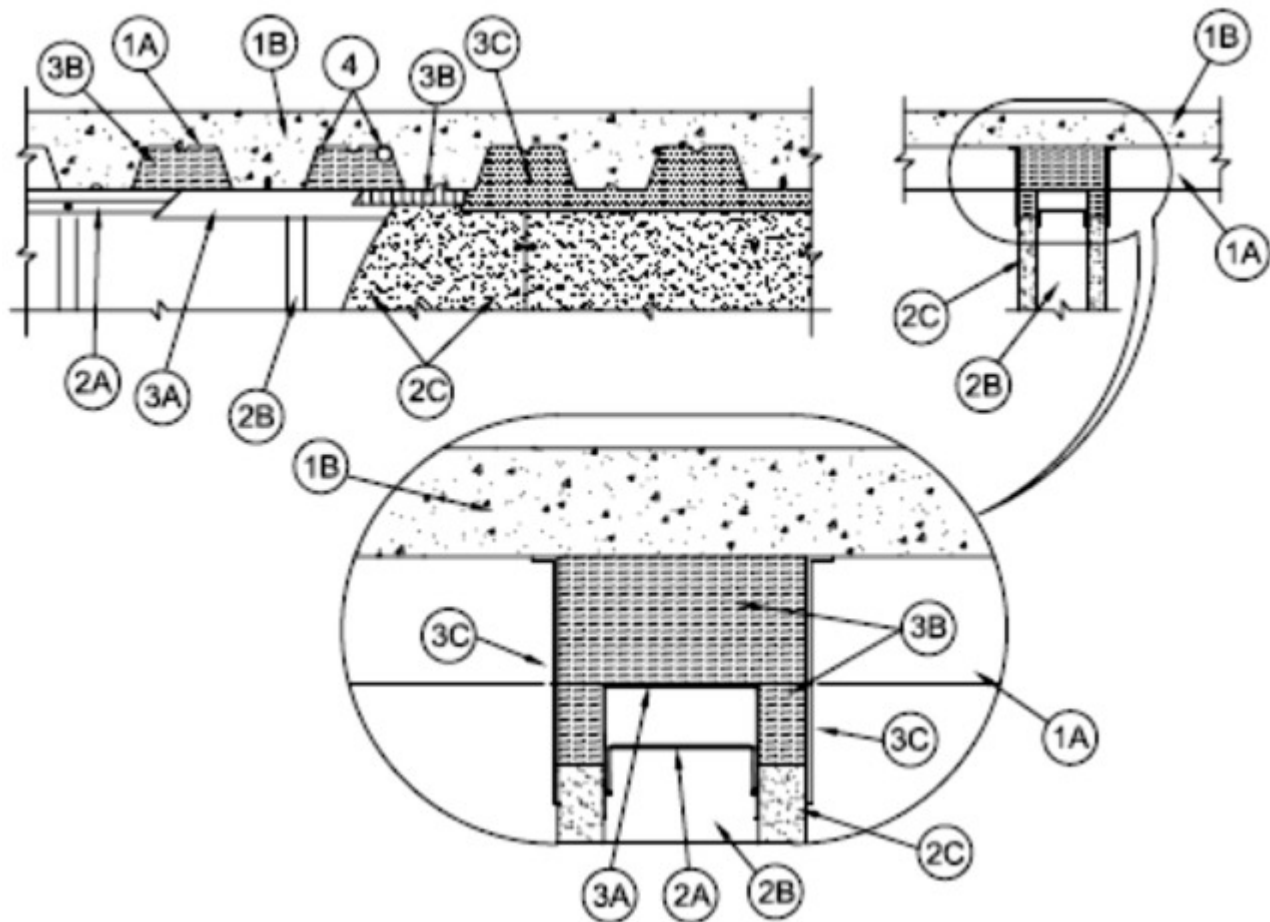
See General Information for Joint Systems

See General Information for Joint Systems Certified for Canada

System No. HW-D-0564

September 01, 2016

ANSI/UL2079	CAN/ULC S115
Assembly Rating — 1 Hr	F Rating — 1 Hr
Nominal Joint Width - 2 In.	FT Rating — 1 Hr
Class II And III Movement Capabilities — 20% Compression Or Extension, or Class II Movement Capabilities — 20% Compression and 12.5% Extension (See Item 1C)	FH Rating — 1 Hr
	FTH Rating — 1 Hr
	Nominal Joint Width - 2 In.
	Class II And III Movement Capabilities — 20% Compression Or Extension, or Class II Movement Capabilities — 20% Compression and 12.5% Extension (See Item 1C)



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 Floor-Ceiling Design in the UL 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. **Spray—Applied Fire Resistive Materials*** — After installation of the deflection channel (Item 3A) or ceiling runner, and prior to the installation of Forming Material and Fill, Void or Cavity Material (Items 3B, 3C), the steel floor units may be sprayed with a min 5/16 in. (8 mm) to max 1-3/4 in. (44 mm) thickness of fire resistive material.

ISOLATEK INTERNATIONAL — Type 300

GCP APPLIED TECHNOLOGIES INC — Type MK-6-HY

When Type 300 spray is used, the movement cycling for the joint is Class II Movement Capabilities with 20% Compression and 12.5% Extension.

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 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 floor units.

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. **Spray—Applied Fire Resistive Materials*** — (Not Shown)—Prior to the installation of the steel ceiling runners, Forming Material and Fill, Void or Cavity Material (Items 2A, 3A, 3B), the roof assembly shall be sprayed with the type and thickness of fire resistive material indicated in the individual P700 Series design.

2. **Wall Assembly** — The 1 hr fire rated gypsum board/steel 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 2B). When U-shaped deflection channel (Item 3A) is used, ceiling runner to be provided with 1 in. (25 mm) flanges and installed within the U-shaped deflection channel (Item 3A) with a 1-1/2 in. (38 mm) gap maintained between the top of ceiling runner and top of deflection plate. When deflection channel is not used, the ceiling runner shall have min 3 in. (76 mm) flanges. Ceiling runner installed perpendicular to direction of fluted steel deck and secured to valleys with steel fasteners or welds spaced max 24 in. (305 mm) OC. When optional spray-applied fire resistive material is used on the steel deck and when deflection channel is not used, ceiling runner secured prior to application of the spray-applied material to each valley of the steel deck with steel fasteners or welds spaced max 24 in. (305 mm) OC.

A1. **Light Gauge Framing*-Slotted Ceiling Runner** — (For use in applications where the nominal joint width does not exceed 1-1/2 in. or 38 mm) - 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 perpendicular to direction of fluted steel deck and secured to valleys with steel fasteners or welds spaced max 24 in. (610 mm) OC. When slotted ceiling runner is used, deflection channel (Item 3A) shall not be used. When optional spray-applied material is used on the steel deck, slotted ceiling runner secured prior to application of the spray-applied material to valleys of the steel deck with steel fasteners or welds spaced max 24 in. (305 mm) OC.

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

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

TELLING INDUSTRIES L L C — True-Action Deflection Track

A2. **Light Gauge Framing*-Vertical Deflection Ceiling Runner** — (For use in applications where the nominal joint width does not exceed 1 in. or 25 mm) - As an alternate to the ceiling runners in Items 2A and 2A1, vertical deflection ceiling runner to consist of galv steel channel with slotted vertical deflection clips mechanically fastened within runner. Slotted clips provided with step bushings for permanent fastening of steel studs. Flanges sized to accommodate steel studs (Item 2B). Vertical deflection ceiling runner installed perpendicular to direction of fluted steel deck and secured to valleys with steel fasteners or welds spaced max 24 in. (610 mm) OC. When vertical deflection ceiling runner is used, deflection channel (Item 3A) shall not be used. When optional spray-applied material is used on the steel deck, vertical deflection ceiling runner secured prior to application of spray-applied material to valleys of the steel deck with steel fasteners or welds spaced max 24 in. (305 mm) OC.

THE STEEL NETWORK INC — VertiTrack VTD250, VTD362, VTD400, VTD600 and VTD800

A3. Light Gauge Framing* — Clipped Ceiling Runner — As an alternate to the ceiling runner in Items 2A 2A1 and 2A2, clipped runner to consist of galv steel channel with clips preformed in track flanges which positively engage the inside flange of the steel studs (Item 2B). Track sized to accommodate steel studs (Item 2B). Track flanges to be min 3-1/4 in. (83 mm). Clipped ceiling runner installed perpendicular to direction of fluted steel floor units and secured to valleys with steel fasteners or welds spaced max 24 in. (610 mm) OC. When clipped ceiling runner is used, deflection channel (Item 3A) shall not be used. When optional spray-applied material is used on the steel deck, clipped ceiling runner secured prior to application of spray-applied material to valleys of steel deck with steel fasteners or welds spaced max 24 in. (305 mm) OC.

TOTAL STEEL SOLUTIONS L L C — Snap Trak

A4. Light Gauge Framing* - Notched Ceiling Runner — As an alternate to the ceiling runners in Items 2A through 2A3, 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 perpendicular to direction of fluted steel deck and secured to valleys with steel fasteners or welds spaced max 24 in. (610 mm) OC. When notched ceiling runner is used, deflection channel (Item 3A) shall not be used. When optional spray-applied material is used on the steel deck, notched ceiling runner secured prior to application of spray-applied material to valleys of steel deck with steel fasteners or welds spaced max 24 in. (305 mm) OC.

OLMAR SUPPLY INC — Type SCR

B. Studs — Steel studs to be min 3-1/2 in. (89 mm) wide. Studs cut 1/2 to 3/4 in. (13 to 19 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 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 ceiling runner (Item 2A2) is used, steel studs secured to slotted vertical deflection clips, through the bushings, with steel screws at midheight of each slot. Stud spacing not to exceed 24 in. (610 mm) OC.

C. Gypsum Board* — Gypsum board installed to a min total thickness of 5/8 in. (16 mm) on each side of wall for 1 hr rated assembly. Wall to be constructed as specified in the individual Wall and Partition Design in the UL Fire Resistance Directory, except that a max 2 in. (51 mm) gap shall be maintained between the top of the gypsum board and the bottom of the steel deck and the top row of screws shall be installed into the studs 4 to 4-1/2 in. (102 to 114 mm) below the lower surface of the floor or roof.

3. Joint System — Max separation between bottom of floor and top of wall at time of installation of joint system is 2 in. (51 mm). The joint system is designed to accommodate a max 20 or 12.5 percent (see Item 1C) compression or extension from its installed width. The joint system consists of a deflection channel, forming material and a fill material as follows:

A. Deflection Channel — (Optional) - A nom 3-5/8 in. (92 mm) wide by 3 in. (76 mm) deep min No. 22 gauge steel U-shaped channel. Deflection channel installed perpendicular to direction of fluted steel deck and secured to valleys with steel fasteners or by welds spaced max 12 in. (305 mm) OC. When optional spray-applied fire resistive material is used on the steel deck, deflection channel secured prior to application of spray-applied material to valleys of steel deck with steel fasteners or welds spaced max 12 in. (305 mm) OC. The ceiling runner (Item 2A) is installed within the deflection channel to maintain a 1-1/2 in. (38 mm) gap between the top of the ceiling runner and the top of the deflection channel. The ceiling runner is not fastened to the deflection channel.

B. Forming Material* — Nom 4 pcf (64 kg/m³) density mineral wool batt insulation cut to a length approx equal to the overall thickness of the wall. Multiple pieces stacked on top of each other, as needed, and then compressed 50 percent in thickness and inserted into the flutes of the steel deck above the top of the ceiling runner. The mineral wool batt insulation is to project beyond each side of the ceiling runner, flush with wall surfaces. Additional 5/8 in. (16 mm) wide strips of nom 4 pcf (64 kg/m³) mineral wool batt insulation are to be cut to fill the gap between the top of the gypsum board and bottom of the steel deck. The strips of mineral wool are compressed 50 percent and tightly packed,

cut edge first, into the gap between the top of the gypsum board and bottom of the steel deck on both sides of the wall.

ROCK WOOL MANUFACTURING CO — Delta Board

ROCKWOOL — SAFE

THERMAFIBER INC — Type SAF

B1. Forming Material*—Plugs — (Optional-Not Shown) - Preformed mineral wool plugs, formed to the shape of the fluted floor units, friction fit to completely fill the flutes above the ceiling runner. The plugs shall project beyond each side of the ceiling runner, flush with wall surfaces. Additional forming material, described in Item 3B, to be used in conjunction with the plugs to fill the gap between the top of gypsum board and the bottom of plug.

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

B2. Forming Material* - Strips — (Optional) - Nom 5/8 in. (16 mm) wide by 4 in. (102 mm) thick precut mineral wool strips. The strips are compressed 50 percent in thickness and firmly packed into the gap between the top of the gypsum board and bottom of the steel floor units on both sides of the wall.

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

C. Fill, Void or Cavity Material* — 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 the wall to completely cover mineral wool forming material and to overlap a min of 1/2 in. (13 mm) onto gypsum board and steel deck on both sides of wall. When spray-applied fire resistive material is applied to the steel deck, the fill material is to overlap the gypsum board a min of 1/2 in. (13 mm) and the spray-applied fire resistive material a min of 2 in. (51 mm) on both sides of wall. When spray-applied fire resistive materials are used, the CP672 firestop spray shall overlap the wall a min 1/2 in. (13 mm) and overlap the spray-applied fire resistive material a min of 2 in. (51 mm) on both sides of the wall. When through-penetrants (Item 4) are installed within flute, the fill material shall overlap a min 1/2 in. (13 mm) onto the periphery of each penetrant, on both sides of wall.

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

4. Through-Penetrants — (Optional) - Max of two penetrants may be installed parallel with and within the flutes of the steel floor or roof deck. The annular space between penetrants and steel deck or spray-applied fire resistive material on steel deck shall be min 0 in. (point contact) and the annular space between penetrants within the flute shall be min 2 in. (51 mm). Penetrants to be rigidly supported on both sides of the floor or wall assembly. The following types and sizes of penetrants may be used:

A. **Polyvinyl Chloride (PVC) Pipe** — Nom 1-1/2 in. (38 mm) diam (or smaller) Schedule 40 solid core PVC pipe for use in closed (process or supply) piping systems.

B. **Rigid Nonmetallic Conduit+** — Nom 1-1/2 in. (38 mm) diam (or smaller) Schedule 40 PVC conduit installed in accordance with the National Electrical Code (NFPA 70).

C. **Steel Conduit or Tubing** — Nom 1/2 in. (13 mm) diam rigid steel conduit or steel electrical metallic tubing (EMT) installed in accordance with the National Electrical Code (NFPA No. 70).

*** 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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