

XHBN.HW-D-0453 - 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.

Joint Systems

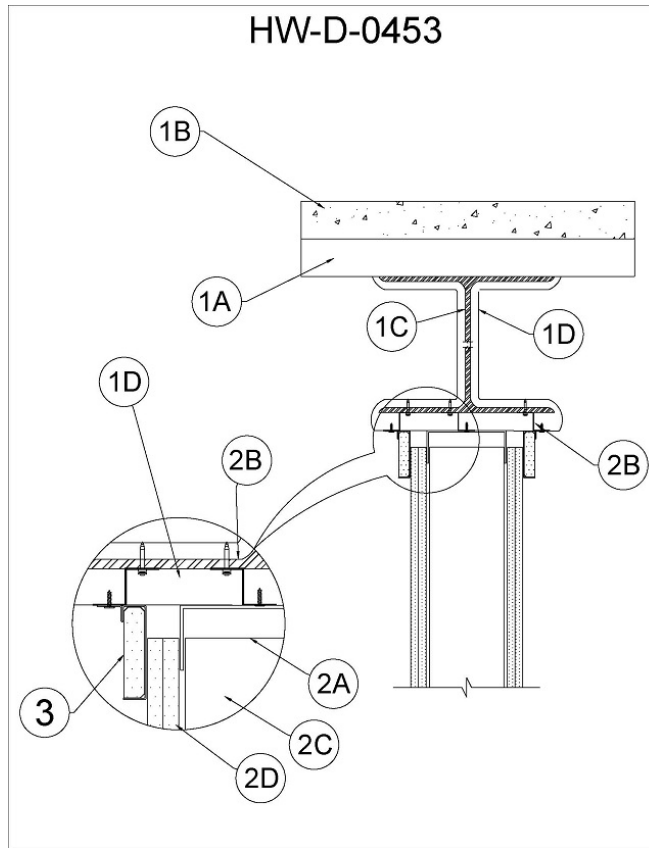
XHBN - Joint Systems

[See General Information for Joint Systems](#)

System No. HW-D-0453

November 16, 2021

ANSI/UL2079	CAN/ULC 5115
Assembly Ratings — 1 and 2 Hr (See Item 2)	F Ratings — 1 and 2 Hr (See Item 2)
Nominal Joint Width — 1, 1-1/2 and 2 In.	FT Ratings — 1 and 2 Hr (See Item 2)
Class II or III Movement Capabilities — See Table 1	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 - 25, 38 and 51 mm
	Class II or III Movement Capabilities — See Table 1
	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 deck/concrete floor assembly shall be constructed of the materials and in the manner described in the individual D700 Series Floor-Ceiling Design in the UL Fire Resistance Directory and shall include the following construction features:
A. Steel Floor And Floor 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 — Steel beam, as specified in the individual D700 Series Floor-Ceiling Design, used to support steel floor units. Steel beam centered over and parallel with wall assembly.

D. Spray-Applied Fire Resistive Material* — After installation of the steel attachment clips (Item 2B), steel floor units and structural steel support to be sprayed with the min thickness of material specified in the individual D700 Series Design. The flutes of the steel floor units are to be filled with material across the entire top flange of the steel beam. Additional material shall be applied to the web of the steel beam on each side of the wall. For a 1 hr Assembly Rating, the thickness of material applied to each side of the steel beam web shall be 13/16 in. (21 mm). For a 2 hr Assembly Rating, the thickness of material applied to each side of the steel beam web shall be 1-3/8 in. (35 mm).
GCP APPLIED TECHNOLOGIES INC — Type MK-6/HY

D1. Spray-Applied Fire Resistive Material* — After installation of the steel attachment clips (Item 2B), steel floor units and structural steel support to be sprayed with the min thickness of material specified in the individual D700 Series Design. The flutes of the steel floor units are to be filled with material across the entire top flange of the steel beam. Additional material shall be applied to the web of the steel beam on each side of the wall. For a 1 hr Assembly Rating, the thickness of material applied to each side of the steel beam web shall be 11/16 in. (17 mm). For a 2 hr Assembly Rating, the thickness of material applied to each side of the steel beam web shall be 1-1/2 in. (38 mm).
ISOLATEK INTERNATIONAL — Type 300

2. 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 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. 20 gauge galv steel channels sized to accommodate steel studs (Item 2C). Ceiling runner to be provided with flanges that are min 1 in. (25 mm) longer than the max extended joint width. When U-shaped deflection channel is used, ceiling runner is installed within the U-shaped deflection channel (Item 2A1) with 2 in. (51 mm) gap maintained between the top of ceiling runner and top of deflection channel. When deflection channel is not used, ceiling runner to be centered beneath and parallel with the bottom flange of steel beam (Item 1C) and secured to steel attachment clips (Item 2B) spaced max 16 in. (406 mm) O.C. A clearance equal to the required thickness of spray applied fireproofing material (Item 1D) shall be maintained between the top of the ceiling runner and the bottom flange of the steel beam.

A1. Deflection Channel — (Optional) - U-shaped channel formed from min 20 gauge galv steel sized to accommodate ceiling runner and provided with flanges that are min 1 in. (25 mm) longer than the max extended joint width. Deflection channel to be centered beneath and parallel with the bottom flange of steel beam (Item 1C) and secured to steel attachment clips (Item 2B) spaced max 16 in. (406 mm) O.C. A clearance equal to the required thickness of spray applied fireproofing material (Item 1D) shall be maintained between the top of the deflection channel and the bottom flange of the steel beam. The ceiling runner (Item 2A) is installed within the deflection channel to maintain a 2 in. (51 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.

A2. **Light Gauge Framing* - Slotted Ceiling Runner** — Slotted ceiling runner to consist of galv steel channel with slotted flanges, sized to accommodate steel studs (Item 2C). Ceiling runner to be centered beneath and parallel with the bottom flange of steel beam (Item 1C) and secured to steel attachment clips (Item 2B) spaced max 16 in. (406 mm) O.C.. A clearance equal to the required thickness of spray applied fireproofing material (Item 1D) shall be maintained between the top of the ceiling runner and the bottom flange of the steel beam.

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 — Slotted Track

TELLING INDUSTRIES L L C — True-Action Deflection Track

A3. **Light Gauge Framing* - Clipped Ceiling Runner** — As an alternate to the ceiling runner in Item 2A, 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 2C). Track flanges to be min 1 in. (25 mm) longer than the max extended joint width. Clipped ceiling runner to be centered beneath and parallel with the bottom flange of steel beam (Item 1C) and secured to steel attachment clips (Item 2B) spaced max 16 in. (406 mm) O.C. A clearance equal to the required thickness of spray applied fireproofing material (Item 1D) shall be maintained between the top of the ceiling runner and the bottom flange of the steel beam. When clipped ceiling runner is used, deflection channel shall not be used.

TOTAL STEEL SOLUTIONS L L C — Snap Trak

A4. **Light Gauge Framing* - Vertical Deflection Ceiling Runner** — As an alternate to the ceiling runner in Items 2A, 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. Track sized to accommodate steel studs (Item 2C). Vertical deflection ceiling runner to be centered beneath and parallel with the bottom flange of steel beam (Item 1C) and secured to steel attachment clips (Item 2B) spaced max 16 in. (406 mm) O.C. A clearance equal to the required thickness of spray applied fireproofing material (Item 1D) shall be maintained between the top of the ceiling runner and the bottom flange of the steel beam. When slotted ceiling runner is used, deflection channel shall not be used.

THE STEEL NETWORK INC — VeriTrack VTD362, VTD400, VTD600 and VTD800

B. **Steel Attachment Clips** — 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 bottom flange of the steel beam with 1-1/2 in. (38 mm) long upper and lower legs. Legs of clips fastened to bottom of beam (prior to application of spray-applied fire-resistive materials) and top of ceiling runner (or deflection channel) with steel fasteners or welds. Clips spaced max 16 in. (406 mm) O.C.

C. **Studs** — Steel studs to be min 3-5/8 in. (92 mm) wide. Studs cut 1/2 in. to 2 in. (13 to 51 mm) less in length than assembly height with bottom nesting in and secured to floor runner. When deflection channel (Item 3A) is used, steel studs attached to ceiling runner (Item 2A) with sheet metal screws. When deflection channel is not used, studs to nest in ceiling runner without attachment. When slotted ceiling runner (Item 2A2) is used, steel studs secured to slotted ceiling runner with No. 8 by 1/2 (13 mm) long wafer head steel screws at mid-height of slot on each side of wall.

D. **Gypsum Board*** — Gypsum board sheets installed to a min total 5/8 in. (16 mm) or 1-1/4 in. (32 mm) thickness on each side of wall for 1 and 2 hr fire rated assemblies, respectively. Wall to be constructed in accordance with the individual U400 or V400 Series Design in the UL Fire Resistance Directory, except that a max 2 in. (51 mm) high gap shall be maintained between the top of the gypsum board and the bottom plane of the spray applied fire resistive material on the structural steel support member. The screws attaching the gypsum board to the studs along the top of the wall shall be located 1 to 3-1/2 in. (25 to 89 mm) below the bottom of the ceiling runner. No gypsum board attachment screws shall be driven into the ceiling runner or into the optional deflection channel.

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

3. **Joint System — Joint System — Max separation between bottom of floor and top of wall (at time of installation of joint system) is 1 in. (25 mm), 1-1/2 in. (38 mm) or 2 in. (51 mm). The joint system is designed to accommodate compression and/or extension from its installed width as noted in Table 1 below.**

A. **Fill, Void or Cavity Material*** — For nom 1 in. (25 mm) or 2 in. (51 mm) joints, a nom 20 gauge steel angle encased on 3 sides over a nom 2-3/4 in. (70 mm) wide layer of 5/8 in. (16 mm) type X gypsum board. Angle to be secured to steel attachment clips/steel fasteners spaced a max 16 in. (406 mm). Face of steel angle to be in contact with gypsum board on both sides of wall. Butt joints in FireRip to be offset min 12 in. (305 mm) on opposite sides of wall.

CALIFORNIA EXPANDED METAL PRODUCTS CO — FireRip-2

A1. **Fill, Void or Cavity Material*** — For nom 1-1/2 in. (38 mm) joints, a nom 20 gauge steel angle encased on 3 sides over a 3-3/4 in. (95 mm) wide layer of 5/8 in. (16 mm) Type X gypsum board. Angle to be secured to steel attachment clips with steel fasteners spaced a max 16 in. (406 mm). Face of steel angle to be in contact with gypsum board on both sides of wall. Butt joints in FireRip to be offset min 12 in. (305 mm) on opposite sides of wall.

CALIFORNIA EXPANDED METAL PRODUCTS CO — FireRip-3

A2. **Fill, Void or Cavity Material*** - For nom 2 in. (51 mm) joints, a nom 20 gauge steel angle encased on 3 sides over a 4-3/4 in. (121 mm) wide layer of 5/8 in. (16mm) Type X gypsum board. Angle to be secured to steel attachment clips with steel fasteners spaced a max 16 in. (406 mm) face of steel angle to be in contact with gypsum board on both sides of wall. Butt joints in FireRip to be offset min 12 in. (305 mm) on opposite sides of wall.

CALIFORNIA EXPANDED METAL PRODUCTS CO — FireRip-4

Table 1

Model	Nominal Joint Size, in (mm)	Cycling Movement, %	
FireRip-2	1 (25)	Compression	100
		Extension	100
	2 (51)	Compression	100
		Extension	0
FireRip-3	1-1/2 (38)	Compression	100
		Extension	100
FireRip-4	2 (51)	Compression	100
		Extension	50

B. **Fill, Void or Cavity Material*** (Not Shown) — Butt joints in the FireRip to be sealed with a min 1/4 in. (6 mm) bead of sealant. In addition, sealant shall be used to seal any voids and dimples at the interface of the FireRip with spray applied fire resistive material on both sides of wall.

UNITED STATES GYPSUM CO — Type AS

*** 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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