

XHBN.HW-D-0551 - 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](#)

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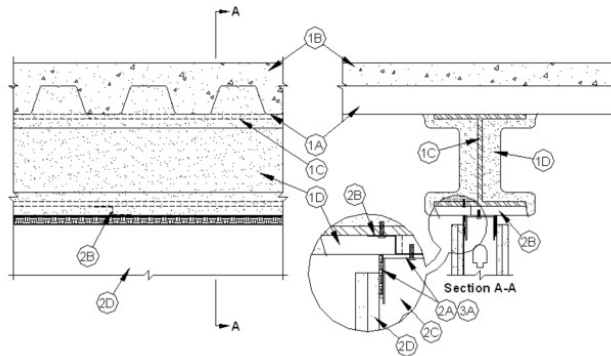
System No. HW-D-0551

June 05, 2020

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 — 3/8, 1/4, 1/2, 5/8, 3/4, 1, 1-1/2 In. (See Item 3)	FT Ratings — 1 and 2 Hr (See Item 2)
Class II or III Movement Capabilities — 80% Compression or Extension, or 33% Compression or Extension or 100 % Compression and Extension (See Item 3) Class II Movement Capabilities —75% Compression, 25% Extension (See Item 3A)	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 — 6, 10, 13, 16, 19, 25, 38 mm (see Item 3)
	Class II or III Movement Capabilities — 80% Compression, or Extension, or 33% Compression or Extension or 100% Compression and Extension (See Item 3) Class II Movement Capabilities —75% Compression, 25% Extension (See Item 3A)
	L Rating at Ambient — Less than 1.55 L/s/m
	L Rating at 203°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 or D900 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 or D900 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), the structural steel support and the steel floor units (in the area above the beam) are to be sprayed with the min thickness of material specified in the individual D700 or D900 Series Design. The remainder of the steel floor units beyond both sides of beam shall be sprayed when specified in the individual D700 or D900 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. The min total thickness of material applied to each side of steel beam web shall be 13/16 in. (21 mm) for 1 hr Assembly Rating and 1-3/8 in. (35 mm) for 2 hr Assembly Rating. No Spray-applied material shall be applied to the flanges of the ceiling runner.

GCP APPLIED TECHNOLOGIES INC — Type MK-6/HY

D1. Spray-Applied Fire Resistive Material* — As an alternate to Item 1D, 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 or D900 Series Design. The remainder of the steel floor units beyond both sides of beam shall be sprayed when specified in the individual D700 or D900 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. The min total thickness of material applied to each side of steel beam web shall be 11/16 in. (18 mm) for 1 hr Assembly Rating and 1-1/2 in. (38 mm) for 2 hr Assembly Rating. No Spray-applied material shall be applied to the flanges of the ceiling runner.

ISOLATEK INTERNATIONAL — Type 300

The hourly rating of the joint system is equal to the lesser of the hourly ratings of the floor-ceiling assembly and the wall assembly.

2. Wall Assembly — The 1 or 2 hr fire-rated gypsum board/steel 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 runners of wall assembly shall consist of min No. 25 gauge galv steel channels sized to accommodate steel studs (Item 2C). Floor runner to be provided with min 1-1/4 in. (32 mm) flanges. Ceiling runner is secured to steel beam (Item 1C) with steel attachment clips (Item 2B) spaced max 16 in. (406 mm) O.C. Ceiling runner to be center beneath and parallel with the bottom flange of steel beam (Item 1C). 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. The ceiling runners are provided with a fill, void or cavity material and are described in Item 3A. Ceiling runner installed perpendicular to steel attachment clips (Item 1B) and secured to each clip with steel fasteners.

A1. Light Gauge Framing* — Slotted Ceiling Track — (Not Shown) — As an alternate to the Item 2A, a ceiling track consisting of galv steel channel with slotted flanges may be used when Item 3A fill material is utilized. Slotted ceiling track sized to accommodate steel studs (Item 2B). Legs are to be min 1/4 in. (6 mm) longer than the maximum joint width. Attached to steel deck with steel fasteners or welds spaced max 24 in. (610 mm) O.C.

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

CALIFORNIA EXPANDED METAL PRODUCTS CO — CST, CST 325

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

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 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 5/8 in. to 1-1/4 in. (16 to 32 mm) less in length than assembly height with bottom nesting in and secured to floor runner. Steel studs nested in non-slotted ceiling runner without attachment or secured to slotted ceiling runner with No. 8 by 1/2 in. (13 mm) long wafer head steel screws at mid-height of exposed slot.

C1. Framing Members - Steel Studs* — In lieu of Item C — Proprietary channel shaped studs, 3-5/8 in. wide spaced a max of 24 in. O.C. Studs to be cut 5/8 to 1-1/4 in (16 to 32 mm) less than the assembly height with bottom nesting in and secured to floor runner. Steel studs nested in non-slotted ceiling runner without attachment or secured to slotted ceiling runner with No. 8 by 1/2 in. (13 mm) long wafer head steel screws at mid-height of exposed slot.

CALIFORNIA EXPANDED METAL PRODUCTS CO — ViperStud™

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 5/8 in. (16 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 in. (25 mm) to 3-1/2 in. (89 mm) below the bottom of the ceiling runner. No gypsum board attachment screws shall be driven into the ceiling runner.

3. **Joint System — Max separation between spray applied fire resistive material on bottom of structural support member and top of gypsum board (at time of installation of joint system) is 5/8 in. (16 mm). When item 3A is used max nominal gap is 3/8 in. (10 mm). When Item 3A1 is used the max nom gap is 1/2 in. (13 mm). The joint system is designed to accommodate a max 80 percent compression or 30% extension from its installed width. When Item 3A2 or 3A4 is used, the maximum installed joint width is 3/4 in. (19 mm) and the movement is max 80% compression and 30% extension. When 3A3 is used to fill nominal gap, the maximum installed width is 1/2 in. (13mm) and movement is 75% compression and 25% extension. When item 3A7 is used the joint will accommodate 100% compression/extension for nominal 1/4 in. (6mm) gaps or compression only for 1/2 in. (12mm) gaps.**

A. **Fill, Void or Cavity Material*** — Min 20 ga steel channel track with 2, or 2-3/4 in. (51, or 70 mm) legs with or without slots having nom 1/2 in. (13 mm) wide intumescent strips affixed to the top web along the outer corner on both sides and sized to accommodate steel studs. Track attached to steel attachment clips with min No 8 by 1/2 in. (13 mm) long steel fasteners spaced at a max of 16 in. (406 mm) OC (min one fastener into each clip).

CALIFORNIA EXPANDED METAL PRODUCTS CO — FAS Track 1000, FAS Track 1000DL

MARINO/WARE, DIV OF WARE INDUSTRIES INC — FAS Track 1000, FAS Track 1000DL

A1. **Fill, Void or Cavity Material*** — As an option to item 3A a min 25 ga composite steel angle with one 5/8 in. (16 mm) leg and one 1-1/4 in (32 mm) leg with a strip of intumescent strip affixed along the inside 1-1/4 in (32 mm) leg. Steel angle is friction fit between the top web of the ceiling runner and the concrete deck.

CALIFORNIA EXPANDED METAL PRODUCTS CO — DDA-1 (Deflection Drift Angle)

A2. **Fill, Void or Cavity Material*** — (Not Shown) — As an alternate to 3A, 3A1 Non 1 in. (25.4 mm) open cell foam plug having a nom 5/16 in. (8 mm) intumescent tape applied to the top surface of the foam profile. The foam is sized for 1 or 2 hour walls and shall be placed in the joint above the top edge of the drywall between the floor/ceiling assembly. A layer of tape and joint compound shall then be applied over the hot rod assembly.

CALIFORNIA EXPANDED METAL PRODUCTS CO — HOTROD Type-X

MARINO/WARE, DIV OF WARE INDUSTRIES INC — HOTROD Type-X

A3. **Fill, Void or Cavity Material*** — (Not Shown) — As an alternate to 3A, 3A1, 3A2. For 1/2 in. (13 mm) gap, Nom. 1 in. (25.4 mm) open cell foam plug having a nom 5/16 in. (8 mm) intumescent tape applied to the top surface of the foam profile. The foam is sized for 1 or 2 hour walls and shall be placed in the joint above the top edge of the drywall between the floor/ceiling assembly.

CALIFORNIA EXPANDED METAL PRODUCTS CO — HOT ROD Type-X

MARINO/WARE, DIV OF WARE INDUSTRIES INC — HOTROD Type-X

A4. **Fill, Void or Cavity Material*** — (Not Shown) — As an alternate to HOTROD (3A, 3A1 3A2 and 3A3) for 3/4 (19 mm) gap between the edge of the drywall and the floor/ceiling assembly shall be filled with vinyl deflection bead with 5/16 in. (8 mm) intumescent strip and foam applied to horizontal leg that runs above the edge of the drywall. The perforated leg may be attached to surface of drywall with 1/2 in. (13 mm) staples every 6-8 in. (152-203 mm).

CALIFORNIA EXPANDED METAL PRODUCTS CO — HOTROD TYPE XL

MARINO/WARE, DIV OF WARE INDUSTRIES INC — HOTROD Type-XL

TRIM-TEX INC — Trim Tex-Hot Rod Type XL

A5. **Fill, Void or Cavity Material*** — (Not Shown) -For nominal 1/2 in. (12 mm) gaps 100% compression/ extension or 1 in. (25 mm) compression only. As an alternate to DDA-1 (Item A1) a composite corrugated vinyl profile with a 1-1/2 in. (38 mm) wide leg and a 3/8 in. (10 mm) bubble gasket along the upper edge. A 5/8 in. (16 mm) wide intumescent strip affixed along the inside 1-1/2 in. (38 mm) leg. Composite vinyl profile is attached to the leg of the ceiling runner/track with 1/2 in. (13 mm) No. 8 framing screws or adhesively attached with double sided foam tape.

CALIFORNIA EXPANDED METAL PRODUCTS CO — Fire Gasket 1

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Fire Gasket 1

TRIM-TEX INC — Trim Tex-Fire Gasket 1

A6. **Fill, Void or Cavity Material*** — (Not Shown) - For nominal 3/4 in. (19 mm) gaps 100% compression/extension or 1-1/2 in. (38 mm) compression only. As an alternate to DDA-1 (Item A1) a composite corrugated vinyl profile with a 2 in. (50 mm) wide leg and a 3/8 in. (10 mm) bubble gasket along the upper edge. A 1 in. (25 mm) wide intumescent strip affixed along the inside 1-1/2 in. (38 mm) leg. Composite vinyl profile is attached to the leg of the ceiling runner/track with 1/2 in. (13 mm) No. 8 framing screws or adhesively attached with double sided foam tape.

CALIFORNIA EXPANDED METAL PRODUCTS CO — Fire Gasket 1.5

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Fire Gasket 1.5

TRIM-TEX INC — Trim Tex-Fire Gasket 1.5

A7. **Fill, Void or Cavity Material*** — (Not Shown) - For nominal 1/4 in. (6mm) gaps 100% compression/ extension or 1/2 in. (12mm) compression only. As an alternate to DDA-1 (Item A2) a composite corrugated vinyl profile with a 1-1/8 in. (28 mm) wide leg and a 1/4 in. (6 mm) bubble gasket along the upper edge. A 1/4 in. (6 mm) wide intumescent strip affixed along the inside 1-1/8 in. (28 mm) leg. Composite vinyl profile is attached to the leg of the ceiling runner/track with 1/2 in. (12 mm) No. 8 framing screws or adhesively attached with double sided foam tape.

CALIFORNIA EXPANDED METAL PRODUCTS CO — Fire Gasket 0.5

8. **Fill, Void or Cavity Material* — Sealant** — (Optional, Not Shown) — Sealant may be used to seal any gaps at end joints between ceiling runners, and gaps above ceiling runner, to maintain L Ratings.

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

SPECIFIED TECHNOLOGIES INC — SpecSeal AS200 Elastomeric Spray

UNITED STATES GYPSUM CO — Type AS

C. **Fill, Void or Cavity Material*** — (Optional, Not Shown) — When Item 3A, 3A1 is installed Non 7/8 in. (22 mm)*Denver Foam* open cell backer rod can be placed in the joint above the top edge of the drywall between the concrete slab. A layer of tape and joint compound can then be applied over the open cell backer rod.

D. **Packing Material** — (Not Shown) - Required for use with items 3A, 3A1 and A continuous length of open cell polyurethane foam with a nominal diameter of 1/8 in. (3.2 mm) greater than the max width of the joint. The foam shall have a nominal density of 1.7 pcf. The foam is to be placed in the joint above the top edge of the drywall between the beam. Any splices are to be tightly butted. A layer of tape and joint compound can then be applied over the open cell foam.

*** 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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