

XHBN.HW-D-0525 - 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
XHBN7 - Joint Systems Certified for Canada

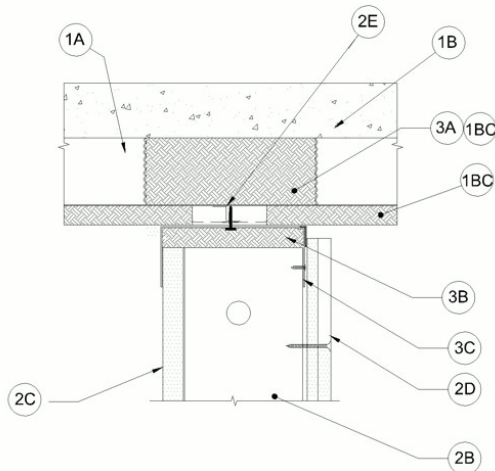
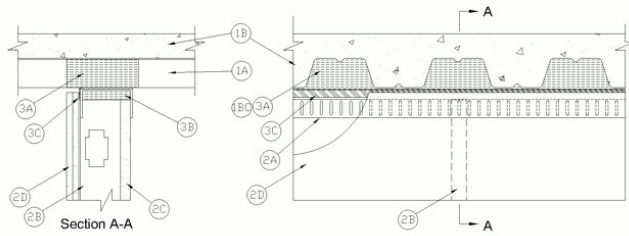
[See General Information for Joint Systems](#)

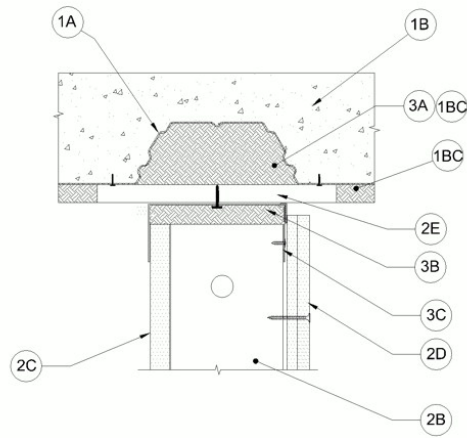
[See General Information for Joint Systems Certified for Canada](#)

System No. HW-D-0525

April 27, 2022

ANSI/UL2079	CAN/ULC S115
Assembly Rating - 2 Hr	F Rating - 2 Hr
Nominal Joint Width - 3/8, 1/4, 5/8, 1, 1-1/2 In. (see Item 3)	FT Rating - 2 Hr
Class II or III Movement Capabilities - 100% Compression or Extension	FH Rating - 2 Hr
L Rating At Ambient - 2.1 CFM/ ft	FTH Rating - 2 Hr
L Rating At 400°F - 1.33 CFM/ ft	Nominal Joint Width - 6, 10, 16, 25, 38 mm (See Item 3)
	Class II or III Movement Capabilities - 100% Compression or Extension
	L Rating At Ambient - 3.25 L/s/m
	L Rating At 204°C - 2.06 L/s/m





1. Floor Assembly — (Configurations A and D) The fire-rated fluted steel deck/concrete floor assembly shall be constructed of the materials and in the manner described in the individual D900 Series 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.

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 shall be constructed of the materials and in the manner described in the individual P900-Series Roof-Ceiling designs 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 — Roof insulation to consist of min 2-1/4 in. (57 mm) thick poured insulating concrete, as measured from the top plane of the roof deck.

1B. Floor Assembly — (Configurations B and C) - 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 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 Material* — (Required for Configurations B and C) - As specified in the D700 Series Floor-Ceiling Design. After installation of ceiling runners (Item 3), the steel floor unit area immediately above the ceiling runner is to be completely filled with spray-applied fire resistive material. Material in flutes to extend 5/8 or 1-1/4 in. (16 or 32 mm) beyond each side of the ceiling runner so as to be approx flush with each surface of the finished wall. No Spray-applied material shall be applied to the flanges of the ceiling runner.

ISOLATEK INTERNATIONAL — Type 300

GCP APPLIED TECHNOLOGIES INC — Type MK-6/HY

2. Shaft Wall Assembly — The 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 runner U-shaped, sized to accommodate steel studs (Item 2B), fabricated from 24 ga galv steel. Ceiling runner positioned with slotted leg toward finished side of wall. Runners attached to floor or strap (Item 2E1) with steel fasteners located not greater than 2 in. (51 mm) from ends and not greater than 24 in. OC. (610 mm). The ceiling runners are provided with a fill, void or cavity material and are described in Item 3. Legs to be min 1/4 in. (6 mm) longer than the max joint width.

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.1 fill material is utilized. Slotted ceiling track sized to accommodate steel studs (Item 2B). Legs to be min 1/4 in. (6 mm) longer than the maximum joint width. Attached to steel deck or strap (Item 2E1) with steel fasteners or welds spaced max 24 in. (610 mm) OC.

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. Studs — "C-T", "I", or "C-H" shaped steel studs to be min 2 1/2 in. (64 mm) wide and formed of min 24 ga 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 secured to floor runner. Steel studs secured to slotted leg of ceiling runner on finished side with No. 8 by 1/2 (13 mm) long wafer head steel screws at mid-height of exposed slot. Studs spaced max 24 in. (610 mm) OC.

C. Gypsum Board* — 1 in. (25 mm) thick by max 24 in. (610 mm) wide gypsum board liner panels. Panels cut 1 in. less in length than floor to ceiling height. Vertical edges inserted into "T" shaped section of "C-T" studs, into holding tabs of "I" studs or into "H"-shaped section of "C-H" studs.

D. Gypsum Board* — Gypsum board 1/2 or 5/8 in. (13 or 16 mm) thick, applied on finished side of wall as specified in the individual Wall and Partition Design. The boards cut a max 5/8" in. (16 mm) less in length than the floor to ceiling height. The screws attaching the gypsum board layer(s) to the "C-T", "I", or "C-H" studs shall be located 4 to 5 in. (102 to 127 mm) down from deck at time of installation.

E. Steel Attachment Clips — (Required for Configurations B and C, Not for use on Configurations A or D) - Z-shaped clips formed of min 20 ga galv steel. Clips sized to extend through the thickness of the spray-applied fire resistive material on the bottom of the steel deck with 1-1/2 in. (38 mm) long upper and lower legs. Legs of clips fastened to bottom of the deck (prior to application of spray-applied fire-resistive materials) and top of ceiling runner with steel fasteners or welds. Clips spaced max 24 in. (610 mm) OC. For Configuration C the clips are to extend a min of 1-1/2 in. (38 mm) onto the valley of the deck on either side of the wall.

E1. Light gauge Framing * — (Not Shown Required for Configuration D) A continuous length of 20 ga galv steel strap with a nom 1/2 in. (13 mm) wide intumescent strip affixed to the edges to span the flute and overlap the adjacent valleys of fluted floor units by 1-1/2 in. (38 mm). The steel strip is to be fastened to floor assembly with the intumescent strips in contact with the bottom of deck using min 1-1/4 in. long steel fastener spaced 12 in. (305 mm) O.C on both valleys. When wall length exceeds length of strap, straps are to be tightly butted and fastened a max 2 in. (51 mm) from ends.

CALIFORNIA EXPANDED METAL PRODUCTS CO — FAS Strap

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 floor and top of gypsum board (at time of installation) is 1/2 in. (13 mm). When Item 3C1 or 3C2 is used max nominal gap is 3/8 in. (10 mm). The joint system is designed to accommodate a max 100 percent compression or extension from its installed width. When Item 3C3 is used the joint will accommodate 100 % compression/extension for nominal 1/2 in. (12 mm) gaps or compression only for nominal 1 in. (25 mm) gaps. When Item 3C4 is used the joint will accommodate 100% compression/ extension for nominal 3/4 in. (19 mm) gaps or compression only for 1-1/2 in. (38 mm) gaps. When item 3C5 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. Forming Material* — Min 4 pcf (64 kg/m³) mineral wool insulation cut to the shape of the fluted steel floor units, approx 33% larger than the area of the flutes. Pieces compressed and inserted into the flutes above the top ceiling runner flush with the runner track. When gaps are present above the ceiling runner at steel deck seams or embossments in the steel deck valleys, a sliver of mineral wool batt insulation shall be used to seal each gap above the ceiling runner on both sides of wall to attain L Ratings. For Configuration D, mineral wool batts required within flutes above FAS Strap (Item 2.E1), when wall is parallel to flutes and not centered on the strap (Item 2.E1).

A1. Light-gauge Framing* - Metal Clip — (Not Shown) As an alternate to the forming material (Item 3A, and when the wall is perpendicular to with deck), a No. 20 ga. galvanized preformed U-shaped clip sized to fit within the flute void with forming material (Item 3A) 4 pcf (64 kg/m³) mineral wool installed between the flanges of the metal clip and compressed to 33%. The galvanized clips and mineral wool to be installed in flute voids on both sides of the wall.

CALIFORNIA EXPANDED METAL PRODUCTS CO — Flute Shield

B. Forming Material* — Min 2 in. (51 mm) thick min 4 pcf (64 kg/m³) mineral wool batt insulation cut to friction fit 33 percent compression in width and installed into ceiling runner between leg of track and gypsum liner board.

C1. Fill, Void or Cavity Material* — As an option to item 3C 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)

C2. Fill, Void or Cavity Material* — As an alternate to Item 3C, and 3C1 Nom 20ga J-shaped track having a one 1-1/2" in. solid leg and one 2-1/2 in. leg nom 1/2 in. (13 mm) wide intumescent strip affixed to the top outer web along the outside corner facing the finish side of the wall. Track to be secured to bottom side of floor assembly with steel masonry or powder actuated fasteners spaced at a max of 24 in. (610 mm) OC.

CALIFORNIA EXPANDED METAL PRODUCTS CO — Fire Rated J-Track

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Fire Rated J-Track

UNITED STATES GYPSUM CO — USG Sheetrock® Brand Firecode® J-Runner

C3. 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 C1) 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

C4. 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 C1) 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

C5. 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

D. Fill, Void or Cavity Material* — Sealant — (Not Shown) - As an alternate to the slivers of mineral wool batt insulation in Item 3A, a dab of sealant may be used to seal each gap above the ceiling runner on both sides of wall to attain L Ratings.
UNITED STATES GYPSUM CO — Type AS

E1. Fill, Void or Cavity Material* — (Not Shown) - As an alternate to 3C for nominal 5/8 in. (16 mm) gap 80% compression and 30% extension 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 the surface of the drywall with 1/2 in. (13 mm) staples every 6-8 in. (152-203 mm).
CALIFORNIA EXPANDED METAL PRODUCTS CO — HOTROD XL

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

E2. Fill, Void or Cavity Material* — (Not Shown) - As an alternate to 3C for nominal joint 5/8in. (16 mm) 80% compression and 30% extension. Nominal 1 in. (25.4 mm) open cell foam plug having a nominal 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 concrete slab. A layer of tape and joint compound can then be applied over the HOTROD Type X assembly.
CALIFORNIA EXPANDED METAL PRODUCTS CO — HOTROD Type-X

E3. Fill, Void or Cavity Material* — (Not Shown) - As an alternate to 3C for 5/8 in. (16 mm) nominal gap 75% compression and 25% extension 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 — HOTROD Type-X

F. Fill, Void or Cavity Material* — (Optional, Not Shown) when item 3C.1 is utilized a min 1/16 in. (1.6 mm) dry thickness (min 1/8 in. or 3.2 mm wet thickness) of fill material sprayed or brushed on one side of the joint system, completely covering mineral wool forming material of the joint system and overlapping a min of 1/2 in. (13 mm) onto the steel deck and item 3C.1 on one side of the wall.
RECTORSEAL — Metacaulk 1200, Biostop 750, FlameSafe FS3000, Metacaulk 1500, or Biostop 800 Spray.

*** 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 2022-04-27

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