

## XHBN.HW-D-0584 - 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](#)

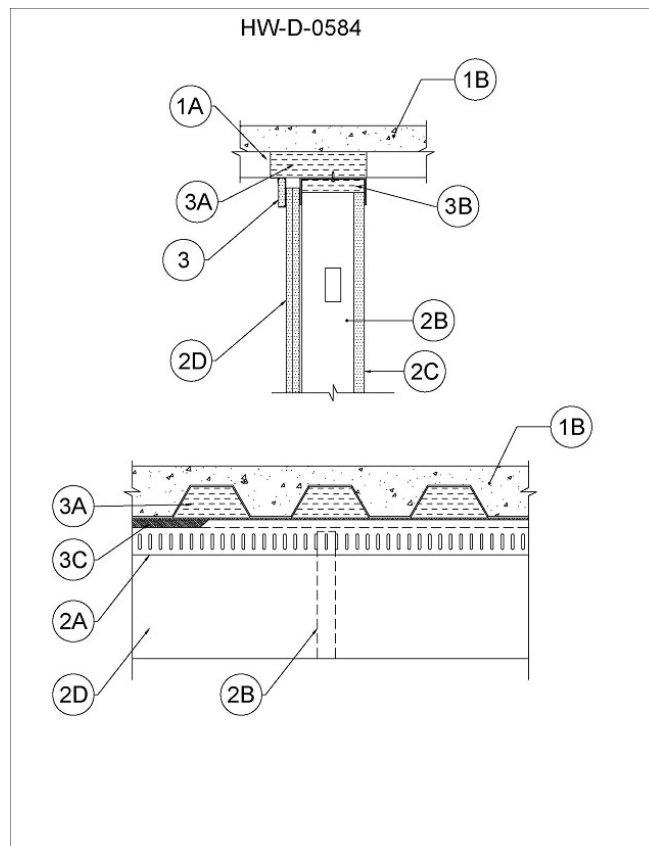
## System No. HW-D-0584

November 16, 2021

ANSI/UL2079

CAN/ULC S115

Assembly Rating — 2 Hr	F Rating — 2 Hr
Nominal Joint Width — 3/4, 1, 1-1/16, 1-1/2 or 2 In. (See Item 3)	FT Rating — 2 Hr
Class II or III Movement Capabilities — See Table 1	FH Rating — 2 Hr
L Rating At Ambient — 2.1 CFM/L ft	FTH Rating — 2Hr
L Rating At 400 F — 1.33 CFM/L ft	Nominal Joint Width — 19, 25, 27, 38 or 51 mm (See Item 3)
	Class II or III Movement Capabilities — See Table 1
	L Rating At Ambient — 3.25 L/s/m
	L Rating At 204°C — 2.06 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 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.

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 20 ga galv steel. Ceiling runner installed perpendicular to steel deck direction and positioned with slotted leg toward finished side of wall. Legs are to be min 1 in. (25 mm) longer than the maximum extended joint width. Runners attached to floor with steel fasteners located not greater than 2 in. (51 mm) from ends and not greater than 24 in. (610 mm) OC. The ceiling runners are provided with a fill, void or cavity material when Item 3C or 3C1 is used.

**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 3C.1 fill material is utilized. Slotted ceiling track sized to accommodate steel studs (Item 2B). Legs are to be min 1 in. (25 mm) longer than the maximum extended joint width. Attached to steel deck 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

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

**B. Studs** — "C-T", "I", or "C-H" shaped steel studs to be min 4 in. (102 mm) wide and formed of min 24 ga galv steel. Studs cut 2 to 2-1/4 (51 to 57 mm) less in length than assembly height with 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 3/4 to 1-1/4 in. (19 to 32mm) 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 3/4 to 1-1/4 in. (18 to 32 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. **When Item 3C or 3C1 is used, a nominal 3-5/8 in. (92 mm) wide rip of gypsum board covering the leg of the ceiling runner attached a max of 3/8 in. (10 mm) below the track web and a max of 8 in. (203 mm) O.C. to ceiling runner on the non-finished side of wall (not shown). 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 3/4, 1, 1-1/16, 1-1/2 or 2 in. (19, 25, 27, 38 or 51 mm). When Item 3A.1 is used the max nominal width is 1 in. (25 mm). When item 2A.1 is used max nominal width is 3/4 in. (19 mm). The joint system is designed to accommodate compression and/or extension from its installed width as specified in Table 1 below.**

**A. Forming Material\*** — Min 4 pcf (64 kg/m<sup>3</sup>) 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 finished wall surface. 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.  
**INDUSTRIAL INSULATION GROUP L L C** — MinWool-1200 Safing

**JOHNS MANVILLE** — Safing

**ROCK WOOL MANUFACTURING CO** — Delta Safing Board

**ROCKWOOL MALAYSIA SDN BHD** — SAFE

**ROCKWOOL** — SAFE

**THERMAFIBER INC** — SAF

**A1. Forming Material\*-Plugs** — (Not Shown) As an alternate to the forming material (Item 3A), mineral wool plugs preformed to the shape of the fluted floor units or roof deck, may be used within the flutes. Plugs shall be friction fitted to completely fill the flutes.  
**ROCK WOOL MANUFACTURING CO** — Delta Deck Plugs

**B. Forming Material\*** — Min 2 in. (51 mm) thick min 4 pcf (64 kg/m<sup>3</sup>) mineral wool batt insulation cut to friction fit with min 33% compression in width and installed into ceiling runner between leg of track and gypsum liner board.  
**INDUSTRIAL INSULATION GROUP L L C** — MinWool-1200 Safing

**JOHNS MANVILLE** — Safing

**ROCKWOOL MALAYSIA SDN BHD** — SAFE

**ROCKWOOL** — SAFE

**THERMAFIBER INC** — SAF

**C. Fill, Void or Cavity Material\*** — Nom 20 ga U-shaped track having 3-1/4 in (83 mm) legs with a nom 2-1/2 in. (64 mm) wide intumescent strip affixed to the top of the leg overlapping on to top surface a min of 1/4 in. (6 mm) facing the finished side of wall. Gypsum board to overlap a min of 1in. (25 mm) over the intumescent strip. Track to be secured to bottom side of floor assembly with min 2 in. (51 mm) steel fasteners spaced at a max of 24 in. (610 mm) OC.  
**CALIFORNIA EXPANDED METAL PRODUCTS CO** — FAS SHAFT Track DL2

**C1. Fill, Void or Cavity Material\*** — (Not Shown) As an alternate 3C a min. 25 ga composite steel angle with one 5/8 in. (16 mm) leg and one 2-1/2 in (64 mm) leg with a 5/8 in. (16 mm) strip of intumescent strip affixed along the inside 2-1/2 in (64 mm) leg. Steel angle is friction fit between the top web of the ceiling runner and the fluted steel deck on the finish wall side only.  
**CALIFORNIA EXPANDED METAL PRODUCTS CO** — DDA (Deflection Drift Angle)

**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

**E. Fill, Void or Cavity Material\*** — (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 item 3B mineral wool forming material of the joint system and overlapping a min of 1/2 in. (13 mm) onto the steel deck and item 3A.1 DDA on the finish side of wall only. When items 3F, 3F1, or 3F2 are utilized a min of 1 in. (25 mm), 1-1/2 in. (38 mm), 2 in. (51 mm) joint width with cycling capabilities shown in Table 1.  
**RECTORSEAL** — Metacaulk 1200, Biostop 750, FlameSafe FS3000, Metacaulk 1500, or Biostop 800 Spray.

**F. 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 deck with steel masonry anchors spaced a max 24 in. (610 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 16 in. (406 mm) on opposite sides of wall.  
**CALIFORNIA EXPANDED METAL PRODUCTS CO** — FireRip-2

**F1. 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 deck with steel masonry anchors spaced a max 24 in. (610 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 16 in. (406 mm) on opposite sides of wall.  
**CALIFORNIA EXPANDED METAL PRODUCTS CO** - FireRip-3

**F2. 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 deck with steel masonry anchors spaced a max 24 in. (610 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 16 in. (406 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	94
		Extension	100
	2 (51)	Compression	94
		Extension	6
FireRip-3	1-1/2 (38)	Compression	94
		Extension	42
FireRip-4	2 (51)	Compression	94
		Extension	6

\* 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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