

# XHBN.HW-D-0623 - 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

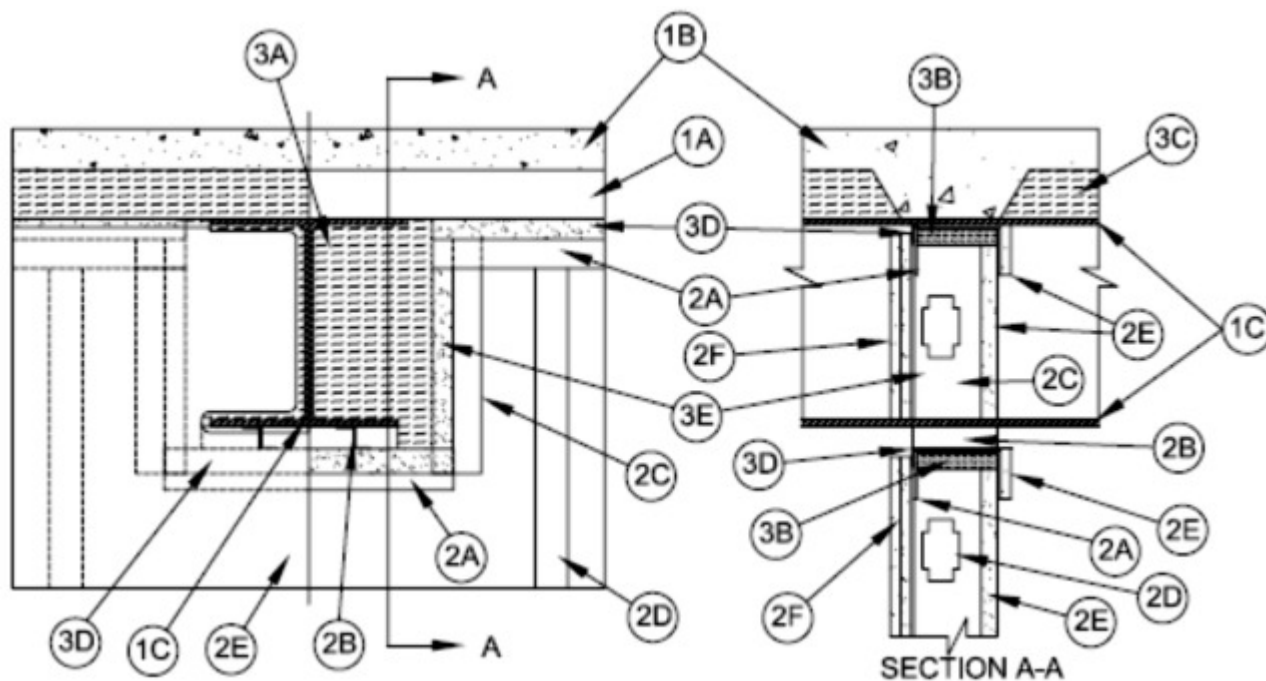
See General Information for Joint Systems

See General Information for Joint Systems Certified for Canada

### System No. HW-D-0623

February 18, 2020

ANSI/UL2079	CAN/ULC S115
Assembly Ratings — 1 and 2 Hr (See Item 2)	F Ratings — 1 and 2 Hr (See Item 2)
Nominal Joint Width — 3/8, 1/2, 5/8, 3/4 or 1 In. (See Item 2 and 3)	FT Ratings — 1 and 2 Hr (See Item 2)
Class II or III Movement Capabilities — 100% Compression or Extension	FH Ratings — 1 and 2 Hr (See Item 2)
	FTH Ratings — 1 and 2 Hr (See Item 2)
	Nominal Joint Width — 3/8, 1/2, 5/8, 3/4 or 1 In. (see Item 2 and 3)
	Class II or III Movement Capabilities — 100% Compression or Extension



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 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. **Structural Steel Support** — Steel Beam or open web steel joist, as specified in the individual D900 Series Floor-Ceiling Design, used to support steel floor units. Structural steel support oriented perpendicular to wall assembly.

D. **Spray-Applied Fire Resistive Material\*** — (Not shown) - As specified in the D700 or D900 Series Floor-Ceiling Design after installation of the steel floor units, ceiling runner (Item 3), attachment clips (Item 2B), and track frame (Item 2C), all surfaces of the structural steel support to be sprayed with the thickness of material specified in the individual design. The area between the structural steel support, track frame (Item 2C), and surrounding both sides of the attachment clips (Item 2B) are to be filled with material to a combined thickness of the wall framing when forming material (Item 3A) is not used.

**ISOLATEK INTERNATIONAL** — Type 300

**GCP APPLIED TECHNOLOGIES INC** — Type MK-6/HY

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 P700 or 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.

C. **Structural Steel Support** — Steel Beam, as specified in the individual P900 Series Roof-Ceiling Design, used to support steel floor units. Steel Beam oriented perpendicular to wall assembly.

D. **Spray-Applied Fire Resistive Material\*** — As specified in the individual P700 or P900 Series Floor-Ceiling Design after installation of the ceiling runner (Item 3C), attachment clips (Item 2B), track frame (Item 2C), all surfaces of the

structural steel support to be sprayed with the thickness of material as specified in the individual design. The area between the structural steel support, track frame (Item 2C), and surrounding both sides of the attachment clips (Item 2B) are to be filled with material to a combined thickness of the wall framing when forming material (Item 3A) is not used.

**ISOLATEK INTERNATIONAL** — Type 300

**GCP APPLIED TECHNOLOGIES INC** — Type MK-6/HY

**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. 25 ga galv steel channels sized to accommodate steel studs (Item 2D). Floor and ceiling runner to be provided with min 1-1/4 in. (32mm) legs with slotted leg toward finished side of wall. Legs are to be min 1/4 in. (6 mm) longer than the maximum joint width. The floor or ceiling runners are provided with a fill, void or cavity material and are described in Item 3C. Floor or ceiling runner to be attached to steel deck (after spray-applied fire resistive material is applied, if used) with steel fasteners spaced a max of 24 in. (610 mm) O.C. Ceiling runner to be attached to steel attachment clips (Item 2B) with steel fasteners or welds spaced a max of 16 in. (406 mm) O.C.

**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 3D.2 or 3D.2.1 fill material is utilized. Slotted ceiling track sized to accommodate steel studs (Item 2C). 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) 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. Steel Attachment Clips** — Min two Z-shaped clips formed from min 20 ga galv steel. Clips are to be attached along the bottom flange of beam (prior to application of spray-applied fire-resistive materials) with steel fasteners or welds.

**C. Steel Track Frame** — Length of Flexible track (Item 3E) shaped to profile the structural steel support such that the horizontal section is located max 3 1/2 in. (89 mm) from any point of the structural steel support. Track is to be fastened to ceiling runners on floor /ceiling assembly and runner attached to bottom of structural steel support with sheet metal fasteners. Steel track frame are provided with a fill, void or cavity material and are described in Item 3E.

**D. 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 or 2-2-1/4 (25 to 32 or 51 to 57 mm) less in length than assembly height for joint widths of 1/2 or 1 in. (13 or 25 mm) respectively 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.

**E. Gypsum Board\*** — 1 in. (25 mm) thick by max 24 in. (610 mm) wide gypsum board liner panels. Panels cut 1-1/4 to 1-1/2 in. (32 to 38 mm) 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. The gypsum board shall be cut to profile the structural steel support with a maximum separation of 5/8 in. or 1 in. (16 or 25 mm) for 5/8 in. (16 mm) and 1 in. (25 mm) joints, respectively, between the lowest surface point of the spray applied material on the steel. 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.

F. **Gypsum Board\*** — Gypsum board sheets installed to a min total 5/8in. (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 as specified in the individual U400 or V400 Series Design in the UL Fire Resistance Directory except that a max 5/8 in. or 1 in. (16 mm or 25) gap shall be maintained between the top of the gypsum board, the steel floor units. The gypsum board shall be cut to profile the structural steel support with a maximum separation of 5/8 in. or 1 in. (16 or 25 mm) for 5/8 in. (16 mm) and 1 in. (25 mm) Joints respectively, between the lowest surface point of the spray applied material on the steel. 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. No gypsum board attachment screws shall be driven into the ceiling runner or the steel track frame (Item 2D).

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

3. **Joint System** — Max separation between steel floor unit, spray applied material on bottom flange of structural support, and top of gypsum board (at time of installation) is 5/8 in. (16 mm) or 1 in. (25 mm). The joint system is designed to accommodate a max 100 percent compression or extension from its installed width. When item 2A.1 is used max nominal width is 3/4 in. (19 mm). When item 3D.2.1 is used the max nominal gap is 1/2 in. (13 mm). When Item 3D.3 is used the nominal gap is 3/8 in. (10 mm)

A. **Forming Material\*** — Nom 4 pcf mineral wool batt insulation cut into strips having a thickness of the wall stacked to maintain a sufficient 50 percent compression between the structural steel support web and the steel track frame (Item 2D). Mineral wool to cover entire area between the structural steel support and the steel track frame.

**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

B. **Forming Material\*** — Min 2 in. thick min 4 pcf (64 kg/m<sup>3</sup>) 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.

**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

C. **Forming material\*** — Nom 4 pcf mineral wool batt 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.

**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

**C1. Forming Material\*-Plugs** — (Not Shown) — As an alternate to the forming material (Item 3B), 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

**D. Fill, Void or Cavity Material\*** — 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 steel deck or Item 2B steel attachment clips.

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

**D1. Fill, Void or Cavity Material\*** — (Not Shown) as an alternate 3D a min. 25 ga composite steel angle with one 5/8 in. (16 mm) leg and one 1-1/4 in.in (32 mm) leg with 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 steel deck or Item 2B steel attachment clips.

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

**D2. Fill, Void or Cavity Material\*** — As an alternate to Item 3D 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

**E. Fill, Void or Cavity Material\*** — For use on nom 1/2 in. (13 mm) or 1 in. (25 mm) joints. Nom 20 ga U-shaped track having 2-1/2 in. (64 mm) or 3-1/4 in. (83 mm) legs respectively with intumescent strips affixed to the top of finished side leg or both legs. Gypsum board (Item 2F) to overlap a min of 1/2 or 1 in. (13 or 25 mm) over the intumescent strip for 1/2 and 1 in. (13 and 25 mm) joints respectively. Track to be secured to floor runners on deck and to ceiling runner on the bottom flange of the structural steel support with sheet metal fasteners.

**CALIFORNIA EXPANDED METAL PRODUCTS CO** — FAS Track DL, FAS Track DL2

**E1. Fill, Void or Cavity Material\*** — 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 attached to vertical framing member Item 2D with No. 8 by 1/2 (13 mm) long wafer head steel screws.

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

**E1.1 Fill, Void or Cavity Material\*** — (Not Shown) as an alternate E1 a min. 25 ga composite steel angle with one 5/8 in. (16 mm) leg and one 1-1/4 in.in (32 mm) leg with 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 steel deck or Item 2B steel attachment clips.

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

**E2. 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

**E3. 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

**F. Fill, Void or Cavity Material\*** — (Optional, Not Shown) when item E.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 3A mineral wool forming material of the joint system and overlapping a min of 1/2 in. (13 mm) onto the steel deck and item 3E.2 DDA on the finish side of 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.**

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