



XHBN.HW-D-0381 - 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

See General Information for Joint Systems

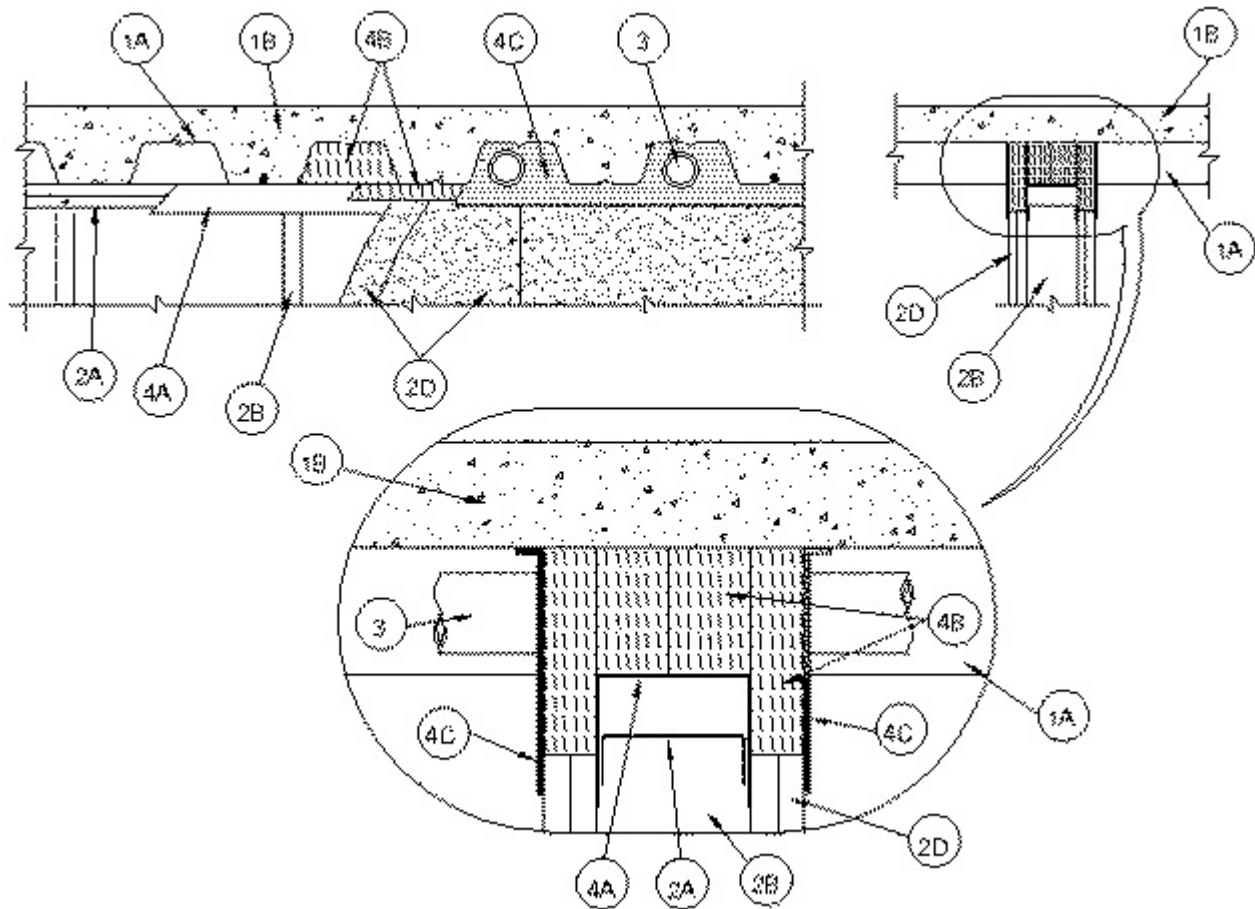
System No. HW-D-0381

October 19, 2015

Assembly Ratings — 1 and 2 Hr (See Item 2)

Nominal Joint Width — 1-1/2 In.

Class II and III Movement Capabilities — 20% 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. deep galv steel fluted floor units.

B. **Concrete** — Min 2-1/2 in. thick reinforced concrete, as measured from the top plane of the floor units.

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 or 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 galv steel channels sized to accommodate steel studs (Item 2B). Ceiling runner to be provided with min 1 in. flanges. When U-shaped deflection channel (Item 3A) is used, ceiling runner installed within the U-shaped deflection channel (Item 3A) with a 1-1/2 in. gap maintained between the top of ceiling runner and top of deflection plate. When deflection channel is not used, the ceiling runner shall have min 2-3/4 in. flanges. Ceiling runner installed perpendicular to direction of fluted steel floor units and secured to valleys with steel fasteners spaced a max 12 in. OC.

A1. **Light Gauge Framing*** — Slotted Ceiling Runner - As an alternative to the ceiling runner in Item 2A, slotted ceiling runner to consist of galv steel channel with slotted flanges sized to accommodate steel studs (Item 2B). Slotted ceiling runner installed perpendicular to direction of fluted steel floor units and secured to valleys with steel fasteners spaces max 24 in. OC. When slotted ceiling runner is used, deflection channel (Item 3A) shall not be used.

CALIFORNIA EXPANDED METAL PRODUCTS CO — CST

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

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

A2. **Light Gauge Framing* — Clipped Ceiling Runner** — As an alternate to the ceiling runner in Items 2A and 2A1, 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 2B). Track flanges to be min 3-1/4 in. Clipped ceiling runner installed perpendicular to direction of fluted steel floor units and secured to valleys with steel fasteners spaced max 24 in. OC. When clipped ceiling runner is used, deflection channel (Item 3A) shall not be used.

TOTAL STEEL SOLUTIONS L L C — Snap Trak

B. **Studs** — Steel studs to be min 3-1/2 in. wide. Studs cut 1-1/2 in. less in length than assembly height. When deflection channel is used, studs shall be installed with bottom nesting in and resting on floor runner and with top nesting in ceiling runner. Studs secured to floor and ceiling runner with sheet metal screw. When deflection channel is not used, studs shall not be secured to ceiling runner. When slotted ceiling runner (Item 2A1) is used, steel studs secured to slotted ceiling runner with No. 8 x 1/2 in. long water head steel screws at midheight of slot on each side of wall. Stud spacing not to exceed 24 in. OC.

C. **Gypsum Board*** — Gypsum board sheets installed to a min total thickness of 1/2 in. and 3/4 in. on each side of wall for 1 and 2 hr rated assemblies, respectively. Wall to be constructed as specified in the individual Wall and Partition Design in the UL Fire Resistance Directory, except that a nom 1-1/2 in. gap shall be maintained between the top of the gypsum board and the bottom of the steel floor units and the top row of screws shall be installed into the studs 4 to 4-1/2 in. below the lower surface of the floor.

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

3. **Through Penetrants** — (Optional) — Multiple pipes or conduits to be installed parallel with and within the flutes of the steel floor or roof deck. The penetrants shall be located near the middepth of the steel deck with a clearance of 1/2 to 1-1/2 in. between the penetrants and the steel deck. A max of one pipe or conduit is permitted in an individual flute. Penetrants to be rigidly supported on both sides of wall assembly. The following types and sizes of pipes or conduits may be used:

A. **Polyvinyl Chloride (PVC) Pipe** — Nom 1-1/4 in. diam (or smaller) Schedule 40 solid or cellular core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.

B. **Chlorinated Polyvinyl Chloride (CPVC) Pipe** — Nom 1-1/4 in. diam (or smaller) SDR13.5 CPVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

C. **Conduit** — Nom 1-1/4 in. (or smaller) steel conduit or nom 1-1/4 in. diam (or smaller) steel electrical metallic conduit.

4 **Joint System** — Max separation between bottom of floor and top of wall at time of installation of joint system is 1-1/2 in. The joint system is designed to accommodate a max 20 percent compression or extension from its installed width. The joint system consists of an optional deflection channel, a forming material and a fill material, as follows:

A. **Deflection Channel** — (Optional) A nom 3-11/16 in. wide by 3 in. deep min No. 22 gauge steel U-shaped channel. Deflection channel installed perpendicular to direction of fluted steel floor units and secured to valleys with steel fasteners or by welds spaced max 12 in. OC. The ceiling runner (Item 2A) is installed within the deflection channel to maintain a 1-1/2 in. 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.

B. **Forming Material*** — Min 3-1/2 in. thickness of min 4 pcf density mineral wool batt insulation cut to the shape of the fluted steel floor units, approx 33 percent larger than the area of the flutes. Pieces compressed and inserted vertically into the flutes above the top of the deflection channel or ceiling runner. The mineral wool is to be flush with each side of the deflection channel or ceiling runner. Additional min 3/8 in. and 1-1/4 in. thickness of min 4 pcf mineral wool insulation for 1 and 2 hr rated assemblies respectively, cut larger than the contour of the flutes and the max 1-1/2 in. gap above the top of the gypsum board, compressed 33 percent, and firmly packed into the flutes and the gap between the top of the gypsum board and the bottom of the steel floor units, flush with both surfaces of the wall.

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

B1. Forming Material* - Plugs — (Not Shown) As an alternate to the forming material (Item 4B), mineral wool plugs preformed to the shape of the fluted floor units, may be used within the flutes. Plugs shall be friction fit to completely fill the flutes above the ceiling channel. The plugs shall project beyond each side of the ceiling runner, flush with wall surfaces. Additional forming material, described in Item 4B, to be used in conjunction with the plugs to fill the gap between the top of gypsum board and bottom of steel floor units.

ROCK WOOL MANUFACTURING CO — Delta Deck Plugs

C. Fill, Void or Cavity Material* — Min 1/8 in. wet thickness of fill material sprayed or troweled on each side of the wall to completely cover mineral wool forming material and to overlap a min of 1/2 in. onto gypsum board and steel deck on both sides of wall.

RECTORSEAL — Biostop 750 Spray, Biostop 750 Caulk Grade

*** 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 2015-10-19

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