



# XHBN.HW-D-0314 - 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

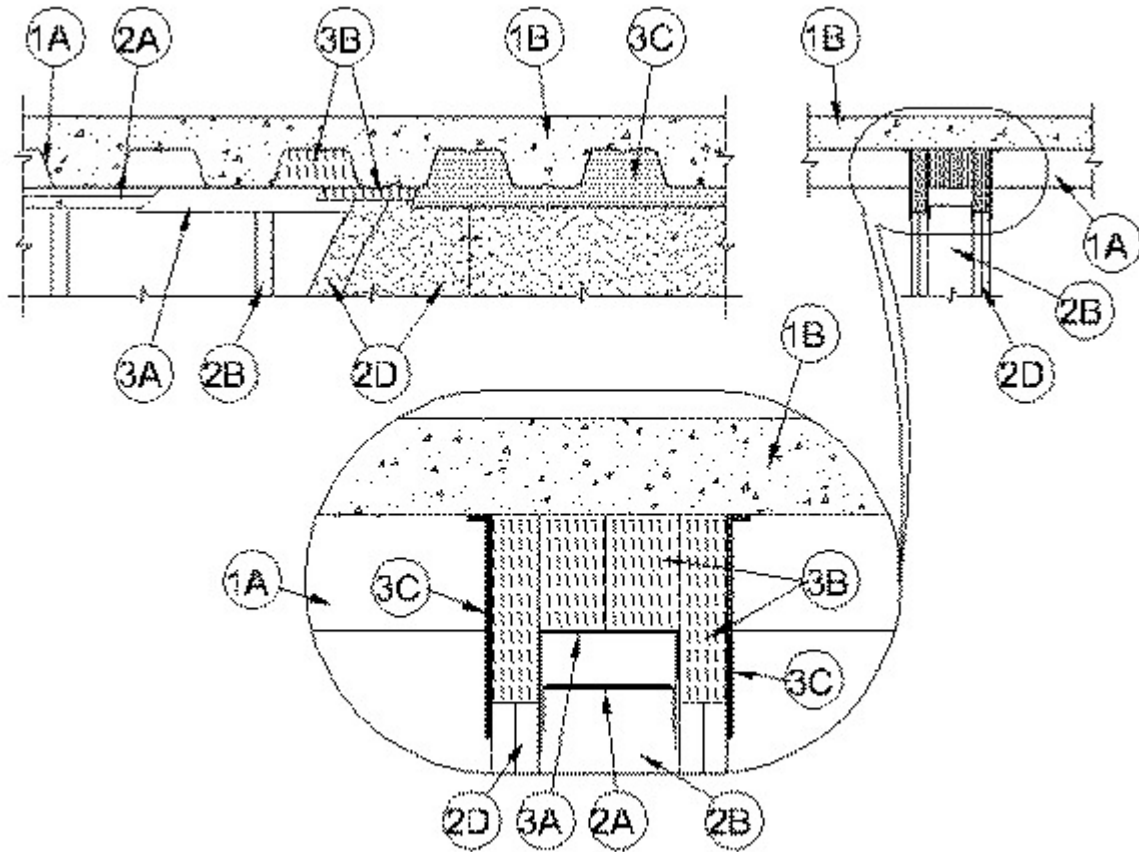
### **System No. HW-D-0314**

June 27, 2011

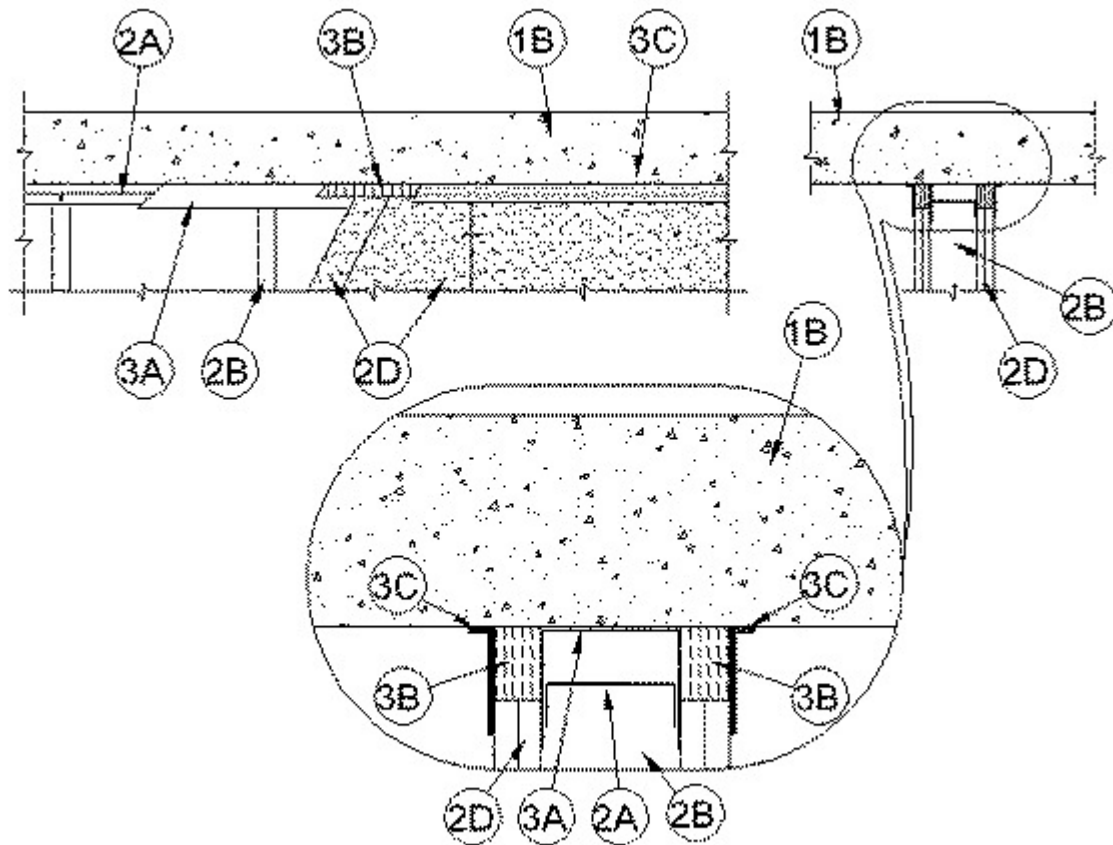
**Assembly Ratings — 1 and 2 Hr (See Item 2)**

**Nominal Joint Width — 2 In.**

**Class II and III Movement Capabilities — 20% Compression or Extension**



CONFIGURATION 'A'



CONFIGURATION 'B'

**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.

C. **Spray—Applied Fire Resistive Materials\*** — (Optional)—(Not Shown)—Prior to the installation of the deflection channel, Forming Material and Fill, Void or Cavity Material (Items 3A, 3B, 3C) the steel floor units may be sprayed with a min 5/16 in. to max 1-3/4 in. thickness of fire resistive material.

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

**1B. Floor Assembly** — As an alternate to Item 1, minimum 2-1/2 in. thick reinforced lightweight or normal weight (100-150 pcf) structural concrete.

**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 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 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 through spray-applied fire resistive material, if used, with steel fasteners spaced a max 12 in. OC. For concrete floors (Item 1B), ceiling runner secured to underside of floor with concrete anchors spaced a max of 12 in. OC.

A1. **Light Gauge Framing\*** — Slotted Ceiling Runner - (For use in systems where the nominal joint width does not exceed 1-1/2 in.) 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 through spray-applied fire resistive material, if used, with steel fasteners spaced max 24 in. OC. For concrete floors (Item 1B), slotted ceiling runner secured to underside of floor with concrete anchors spaced a max of 12 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 of the steel floor units (Item 1A) with steel fasteners spaced max 24 in. OC. For concrete floors (Item 1B), clipped ceiling runner secured to underside of floor with concrete anchors spaced a max of 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. **Batts and Blankets\*** — (Not Shown)—Mineral wool or fiberglass insulation batts, friction-fitted between studs and ceiling and floor runners, as required in the individual Wall and Partition Design.

D. **Gypsum Board\*** — Gypsum board sheets installed to a min total thickness of 5/8 in. and 1-1/4 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 or underside of concrete floor. 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. **Joint System — Max separation between bottom of floor and top of wall at time of installation of joint system is 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, gypsum board strips, a forming material and a fill material, as follows:

## Joint Configuration A

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 through fire resistive material with steel fasteners or by welds spaced max 12 in. OC. When optional spray applied material is used on the steel floor units, deflection channel shall be secured through the spray applied material to each valley of floor unit with min 3/16 in. diam steel masonry anchors. 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 5/8 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 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.

**ROCK WOOL MANUFACTURING CO** — Delta Board

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. When spray-applied fire resistive material\* is applied to the steel floor and form units\*, the fill material shall overlap the gypsum board a min of 1/2 in. and the spray-applied fire resistive material a min of 2 in. on both sides of wall.

**A/D FIRE PROTECTION SYSTEMS INC** — A/D Fire Barrier Spraymastic

## Joint Configuration B

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 to underside of concrete floor using concrete anchors 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 5/8 in. and 1-1/4 in. width of min 4 pcf mineral wool insulation for 1 and 2 hr rated assemblies respectively, cut larger than the max 2 in. gap above the top of the gypsum board, compressed 33 percent, and firmly packed into the gap between the top of the gypsum board and the underside of concrete floor, flush with both surfaces of the wall.

**ROCK WOOL MANUFACTURING CO** — Delta Board

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 concrete floor on both sides of wall.

**A/D FIRE PROTECTION SYSTEMS INC** — A/D Fire Barrier Spraymastic

**\* 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 2011-06-27

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