



## XHBN.HW-D-1085 Joint Systems

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### 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 Listed or Classified 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 as Classified, Listed, or Recognized.
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### Joint Systems

[See General Information for Joint Systems](#)

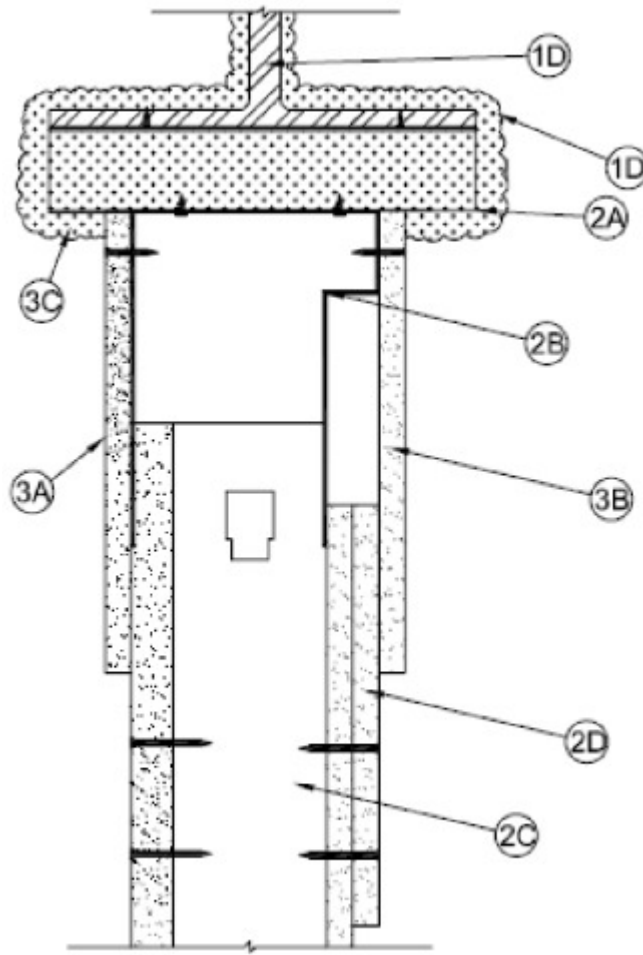
### System No. HW-D-1085

August 21, 2009

**Assembly Ratings — 1 or 2 HR (See Item 2)**

**Nominal Joint Width — 2-3/4 or 5-1/2 in. (See Item 3)**

**Class II and III Movement Capabilities — 100% Compression or Extension or 100% compression (See Item 3)**



1. **Floor Assembly** — The 1 or 2 hr 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, as specified in the individual D700 or D900 Series Floor-Ceiling Design, used to support steel floor units. Steel Beam centered over and parallel with wall assembly.
- D. **Spray-Applied Fire Resistive Material\*** — After installation of the steel attachment clips (Item 2A), steel floor units, all surfaces of the steel floor units, steel attachment clips and structural steel support to be sprayed with the thickness of material specified in the individual D700 or D900 Series Floor-Ceiling Design. The flutes of the steel floor units are to be filled with material across the entire top flange of the steel beam. Additional material shall be applied to the web of the steel beam on each side of the wall. The thickness of material applied to each side of the steel beam web shall be 2 in. (51 mm).

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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 P700 or P900 Series Floor-Ceiling Design, used to support steel floor units. Steel Beam centered over and parallel with wall assembly.

D. **Spray-Applied Fire Resistive Material\*** — After installation of the steel attachment clips (Item 2A), steel floor units, all surfaces of the steel floor units, steel attachment clips and structural steel support to be sprayed with the thickness of material specified in the individual D700 or D900 Series Floor-Ceiling Design. The flutes of the steel floor units are to be filled with material across the entire top flange of the steel beam. Additional material shall be applied to the web of the steel beam on each side of the wall. The thickness of material applied to each side of the steel beam web shall be 2 in. (51 mm).

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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 Attachment Clips** — C-shaped clips formed from min 4 in. (102 mm) wide channels of min 16 ga galv steel. Clips to be sized to extend through the thickness of the spray-applied fire-resistive material required on the structural steel support (Item 1C) with 2 in. (51 mm) long legs. Top of attachment clip is to be attached perpendicular to structural steel support prior to application of spray-applied fire-resistive materials (Item 3C) with steel fasteners or welds. Clips spaced max 24 in. (610 mm) OC.

B. **Light Gauge Framing\* — Deflection Track** — Deflection track of wall assembly shall consist of min No. 25 gauge galv steel channels sized to accommodate steel studs (Item 2C) and with offset legs to accommodate wall cladding (Item 3A and 3B). Deflection track installed parallel to steel beam and secured to steel attachment clips with No. 8. 5/8 in. (16 mm) or equivalent steel fasteners.

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C. **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 2 to 2-1/2 in (51 to 64 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.

D. **Gypsum Board\*** — 1 in. (25 mm) thick by max 24 in. (610 mm) wide gypsum board liner panels. Panels cut 2-3/4 in. (70 mm) or 5-1/2 in. (140 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.

E. **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 2-3/4 in. (70 mm) or 5-1/2 in. (140 mm) less in length than the floor to ceiling height.

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

3. **Joint System** — Max separation between step of deflection runner (Item 2B) and top of gypsum board (at time of installation) is 2-3/4 in. (70 mm) or 5-1/5 in (140 mm). The joint system is designed to accommodate a max 100 percent compression or extension from its installed width of 2-3/4 (70 mm) or 100 percent compression from its installed width of 5-1/2 (140 mm). The joint system consists of wall cladding (Item 3A) and spray applied fire resistive material (Item 3B), as follows:

A. **Wall Cladding** — Min 11 in. (279 mm) wide strips of gypsum board (Item 2D) attached to the deflection track. Board type and thickness and fastener type shall be as specified for the gypsum board in the individual Wall and Partition Design in the UL Fire Resistance Directory. Fasteners shall be max spaced 3 in. (76 mm) OC. The top of the wall cladding shall be flush with the top edge of the deflection track (Item 2B).

B. **Wall Cladding** — Min 11 in. (279 mm) wide strips of gypsum board (Item 2E) attached to the deflection track. The number of layers, board type and thickness and fastener type shall be as specified for the gypsum board in the individual Wall and Partition Design in the UL Fire Resistance Directory. Fasteners shall be max spaced 3 in. (76 mm) OC. The top of the wall cladding shall be flush with the top edge of the deflection track (Item 2B). For one hour rated walls an additional 11 in (279 mm) wide strip of gypsum board installed flush with the top of the gypsum board (Item 2E).

C. **Spray-Applied Fire Resistive Material\*** — Additional material shall be applied to the top of the wall, the bottom flange of the steel beam and the attachment clips with the thickness specified in the individual D700 or D900 Series Floor-Ceiling Design. Material is to be applied to wall on each side of the wall to overlap of min of 1/2 in (13 mm) on to wall cladding (Item 3A and 3B).

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\*Bearing the UL Classification Mark

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