



XHBN.HW-D-0497 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-0497

August 05, 2009

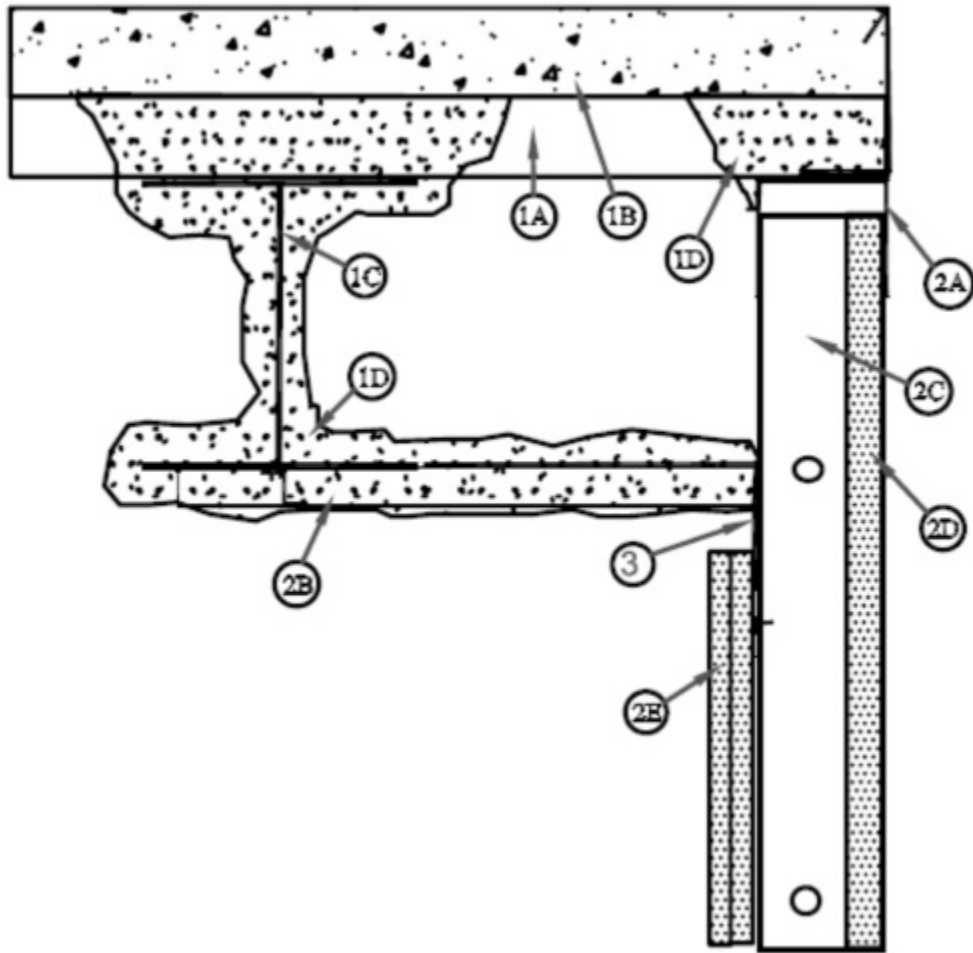
Assembly Ratings — 1 and 2 HR (See Item 2)

L Rating At Ambient — Less Than 1 CFM/LIN Ft

L Rating At 400 F — Less Than 1 CFM/LIN Ft

Nominal Joint Width — 3/8 to 3/4 in.

Class II and 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 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 parallel to wall assembly. Structural steel support oriented parallel to and 1 to 7 in. (25 to 178 mm) from wall assembly.
- D. **Spray-Applied Fire Resistive Material*** — As specified in the individual D900 Series Floor-Ceiling Design after installation of the ceiling runner (Item 2A), attachment clips (Item 2B), and composite angle (Item 3), all surfaces of the structural steel support to be sprayed with the thickness of material as specified in the individual design. The flutes of the steel floor units are to be filled with material across the entire top flange of the structural steel support and ceiling runner (Item 2A). The area between the z-clips (Item 2B) is to be filled to the depth of the z-clips plus an additional 1-1/2 in. (38 mm) thickness above and on top of the composite angle (Item 3A).

ISOLATEK INTERNATIONAL — Type 300

W R GRACE & CO - CONN — Type MK-6/HY

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 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 to be min 2-1/2 in. (64 mm) wide with floor runner having min legs of 1-1/4 in. (32 mm) and ceiling runner having min legs of 2 in. (51 mm), fabricated from 25 ga galv steel. Ceiling runner attached to steel deck with steel fasteners or welds spaced a max 24 in. (610 mm) OC.
- B. **Steel Attachment Clips** — Z-shaped clips having 1-1/2 in. (38 mm) wide center leg of min 20 ga

galv steel. Clips to extend through the thickness of the spray-applied fire resistive material on the bottom flange of the steel beam with 1-1/2 in. (38 mm) long upper and lower legs. Legs of clips fastened to bottom of beam (prior to application of spray-applied fire-resistive materials) with steel fasteners or welds. Clips spaced max 16 in. (406 mm) OC and extend to with in 1/4 to 3/4 in. (6 to 19 mm) from the surface of the wall studs.

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 1/2 to 3/4 in (13 to 19 mm) less in length than assembly height with bottom nesting in and secured to floor runner. Studs to nest in ceiling runner without attachment. When AN Series (Item 3) is used the studs are not attached. When slotted SA Series (Item 3) is used, steel studs secured through slots in downward facing leg with No. 8 by 1/2 in. (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 3/4 to 1 in. (19 to 25 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 3/8 to 3/4 in. (10 to 19 mm) less in length (see Item 3) than the floor to bottom of plane of steel attachment clips (Item 2B). The screws attaching the gypsum board layer(s) to the "C-T", "I", or "C-H" studs shall be located 1 in. (50 mm) below the bottom of the composite angle vertical leg. No gypsum board attachment screws shall be driven into the composite angle.

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 steel attachment clips, and top of gypsum board (at time of installation) is 3/8 to 3/4 in. (10 to 19 mm). The joint system is designed to accommodate a max 100 percent compression or extension from its installed width.

A. **Fill, Void or Cavity Material*** — For nom 3/8 in. (10 mm) joints, a nom 20 ga L-shaped angle having min 3-1/2 in. (89 mm) vertical leg and a min 2 in. (51 mm) horizontal leg or nom 20 ga L-shaped angle having min 4-1/2 in. (114 mm) vertical slotted leg with and a min 2 in. (51 mm) horizontal leg with a nom 1 in. (25 mm) wide intumescent strip affixed to the vertical leg 1-1/2 in. (38 mm) below the horizontal leg facing the finished side. Composite angle to extend from edge of bottom beam flange to wall studs and (prior to application of spray applied fire-resistive materials) attached to the top of the steel attachment clips with typical steel fasteners. Gypsum board to overlap a min of 5/8 in. (16 mm) over the intumescent strip.

JAK INNOVATIONS — BlazeFrame IAN or ISA series

A1. **Fill, Void or Cavity Material*** — For nom 1/2 in (13 mm) joints, a nom 20 ga L-shaped angle having min 3-1/2 in. (89 mm) vertical leg and a min 2 in. (51 mm) horizontal leg or nom 20 ga L-shaped angle having min 4-1/2 in. (114 mm) vertical slotted leg with and a min 2 in. (51 mm) horizontal leg with a nom 1 1/4 in. (32 mm) wide intumescent strip affixed to the vertical leg 1-1/2 in. (38 mm) below the horizontal leg facing the finished side. Composite angle to extend from edge of bottom beam flange to wall studs and (prior to application of spray applied fire-resistive materials) attached to the top of the steel attachment clips with typical steel fasteners. Gypsum board to overlap a min of 3/4 in. (19 mm) over the intumescent strip.

JAK INNOVATIONS — BlazeFrame IANW or ISAW series

A2. **Fill, Void or Cavity Material*** — For nom 3/4 in (19 mm) joints, a nom 20 ga L-shaped angle having min 3-1/2 in. (89 mm) vertical leg and a min 2 in. (51 mm) horizontal leg or nom 20 ga L-shaped angle having min 5 in. (127 mm) vertical slotted leg with and a min 2 in. (51 mm) horizontal leg with a nom 1 3/4 in. (44 mm) wide intumescent strip affixed to the vertical leg 1-1/2 in. (38 mm) below the horizontal leg facing the finished side. Composite angle to extend from edge of bottom beam flange to wall studs and (prior to application of spray applied fire-resistive materials) attached to the top of the steel attachment clips with typical steel fasteners. Gypsum board to overlap a min of 1 in. (25 mm) over the intumescent strip.

JAK INNOVATIONS — BlazeFrame IANX or ISAX series

*Bearing the UL Classification Mark

Last Updated on 2009-08-05

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