# System No. HW-D-0633
## XHBN.HW-D-0633
## Joint Systems

Page Bottom

## 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

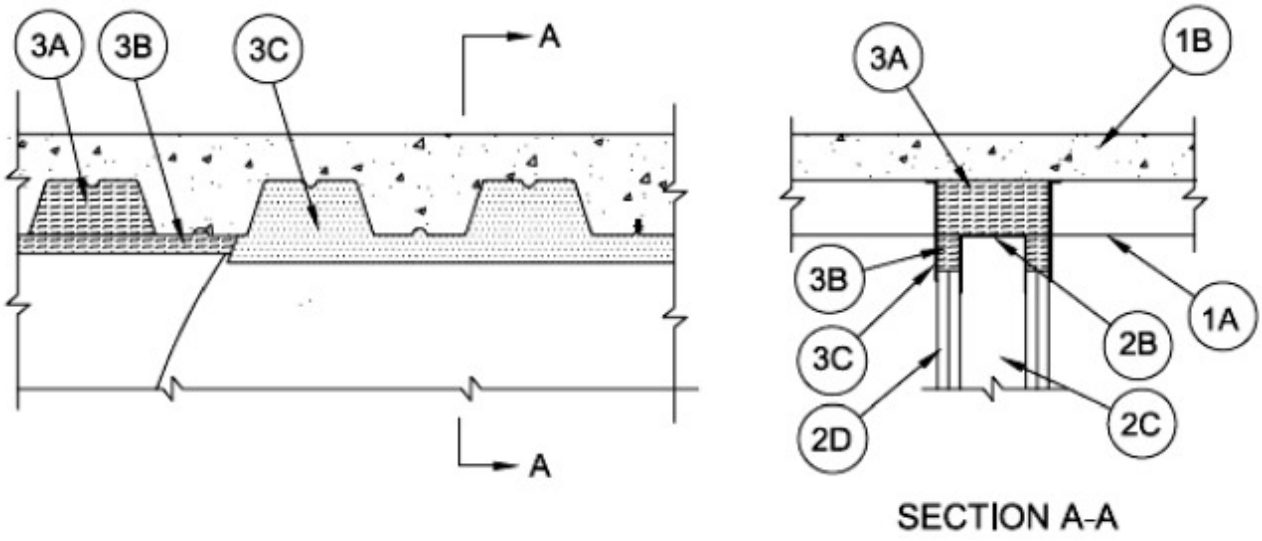
See General Information for Joint Systems

See General Information for Joint Systems Certified for Canada

# System No. HW-D-0633

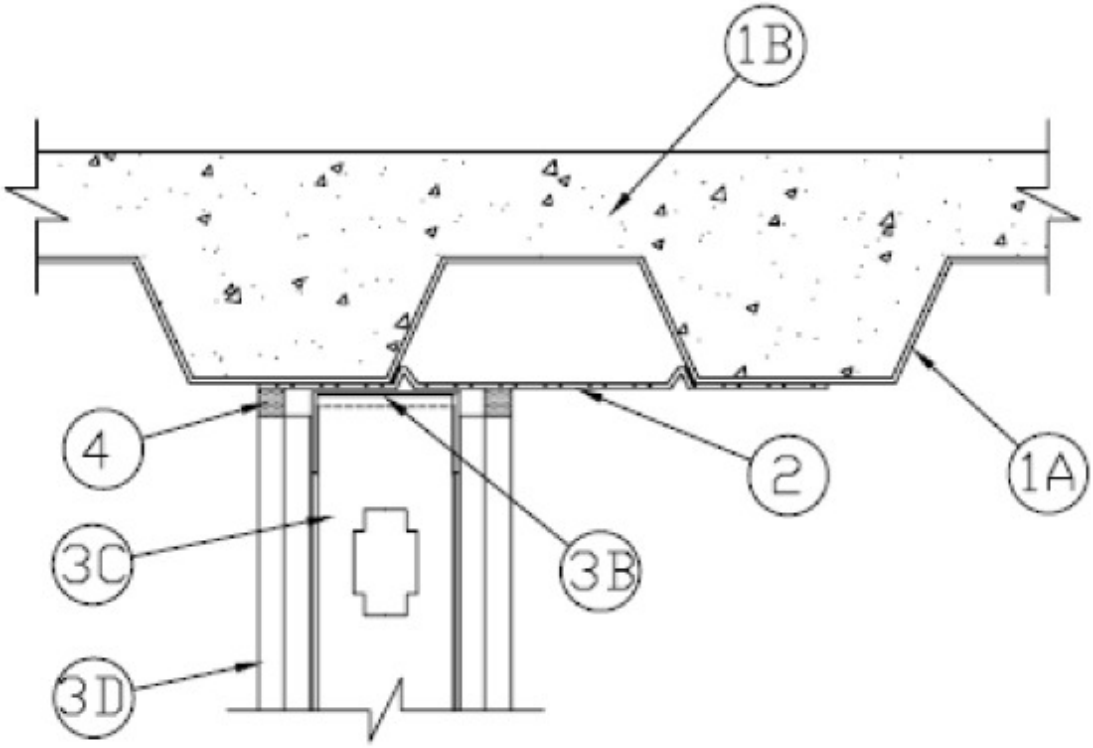
January 17, 2017

| 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 - 1 In. | FT Ratings — 1 and 2 Hr (See Item 2) |
| Class II or III Movement Capabilities — 25% Compression or Extension | FH Ratings — 1 and 2 Hr (See Item 2) |
| L Rating at Ambient — Less than 1 CFM/Lin Ft | FTH Ratings — 1 and 2 Hr (See Item 2) |
| L Rating at 400°F — Less than 1 CFM/Lin Ft | Nominal Joint Width - 25 mm |
| | Class II or III Movement Capabilities — 25% Compression or Extension |
| | L Rating at Ambient — Less than 1 CFM/Lin Ft |
| | L Rating at 400°F — Less than 1 CFM/Lin Ft |

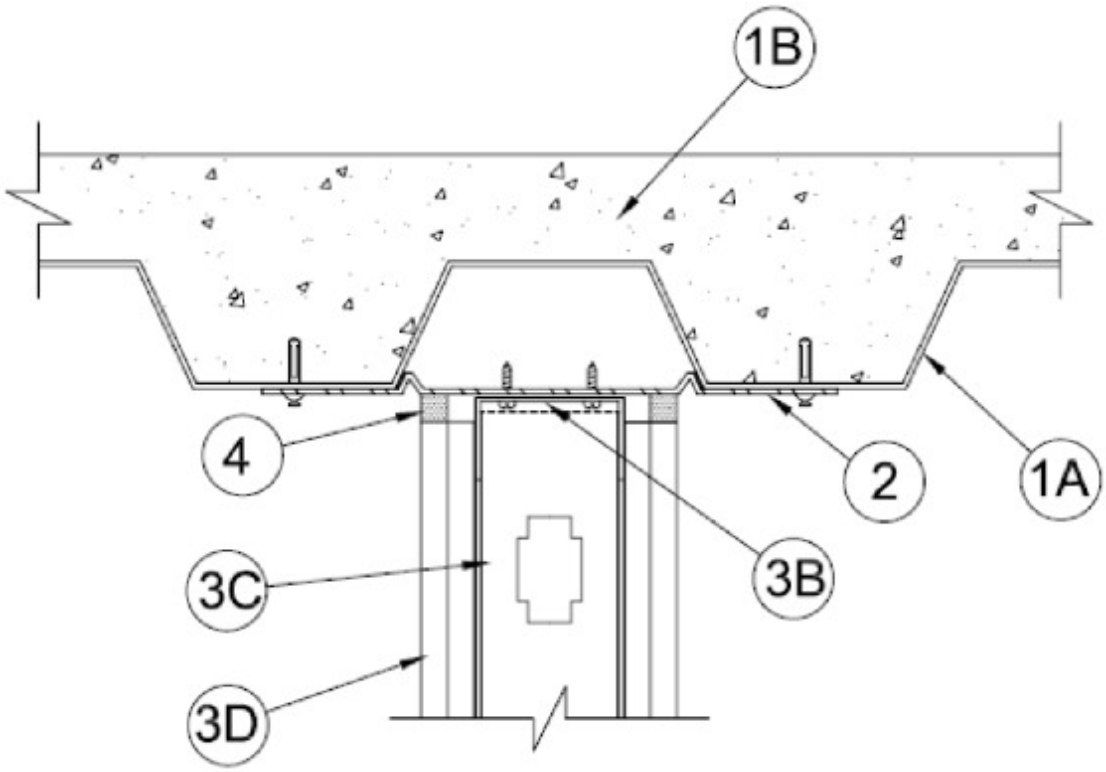



SECTION A-A

Configuration A




Configuration B




# Configuration C

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 Floor-Ceiling Design in the UL Fire Resistance Directory. The hourly fire rating of the floor assembly shall be equal to or greater than the hourly fire rating of the wall assembly. The floor assembly shall include the following construction features:

A. **Steel Floor and Form Units* —** Max 3 in. (76 mm) deep galv fluted floor units.

B. **Concrete —** Min 2-1/2 in. (64 mm) thick reinforced (100-150 pcf or 1600-2400 kg/$m^3$) concrete, as measured from the top plane of the floor units.

1A. **Roof Assembly —** As an alternate to Item 1, the fire-rated roof assembly shall be constructed of the materials and in the manner described in the individual P900 Series Roof-Ceiling Designs in the UL Fire Resistance Directory and shall contain max 3 in. (76 mm) deep galv steel fluted roof units. The hourly fire rating of the roof assembly shall be equal to or greater than the hourly fire rating of the wall assembly.

**Firestop Configuration A**

2. **Wall Assembly —** The 1 hr or 2 fire rated gypsum board/steel stud wall assembly shall be constructed of the materials and in the manner described in the individual U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. **Steel Floor Runners —** Floor runners of wall assembly shall consist of galv steel channels sized to accommodate steel studs (Item 2C).

B. **Light Gauge Framing* - Slotted Ceiling Runner —** Slotted ceiling runner to consist of galv steel channel with slotted flanges sized to accommodate steel studs (Item 2C). Slotted ceiling runner installed perpendicular to direction of fluted steel deck secured to valleys (Configuration A) or parallel to direction of fluted deck secured to valleys or corrugated steel straps (Configuration B and C) with typical steel fasteners or welds spaced max 24 in. (610 mm).

**BLAZEFRAME INDUSTRIES** — BlazeFrame BST or BSTE

**MRI STEEL FRAMING LLC** — Smart Slotted Track

**SUPER STUD BUILDING PRODUCTS** — Slotted Track

C **Studs —** Steel studs to be min 3-1/2 in. (89 mm) wide. Studs cut 1/2 to 3/4 in. (13 to 19 mm) less in length than assembly height with bottom nesting in and resting on floor runner and with top nesting in ceiling runner (Item 2B) steel studs secured to slotted ceiling runner with No. 8 by 1/2 in. (13 mm) long wafer head steel screws at mid-height of slot on min. one side of wall. Stud spacing not to exceed 24 in. (610 mm) OC.

D. **Gypsum Board* —** Gypsum board sheets installed to a min total thickness of 5/8 in. (16 mm) and 1-1/4 in. (32 mm) 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 in. (25 mm) 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 a min. 4 in. (102 mm) below the lower surface of the floor. 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 flange of the deflection track and top of wallboard (at the time of installation of the joint system) is 1 in. (25 mm). The joint system is designed to accommodate a max 25 percent compression or extension from its installed width. The joint system consists of:

A. **Forming Material* —** Min 4 pcf (64 kg/$m^3$) density mineral wool batt insulation cut approx 33 percent wider than the flutes, approx 33 percent thicker than the depth of the steel deck, and with a length equal to the overall width of the wall. Mineral wool compressed and inserted into flutes of the steel floor units between top of ceiling runner and the steel deck.

**INDUSTRIAL INSULATION GROUP L L C** — MinWool-1200 Safing

**JOHNS MANVILLE** — Safing

**ROCK WOOL MANUFACTURING CO** — Delta Board or Delta-8

**ROXUL INC** — Type Safe

**THERMAFIBER INC** — Type SAF

A1. **Forming Material* — Plugs —** As an alternate to Item 3A, preformed mineral wool plugs, formed to the shape of the fluted floor units, friction fit to completely fill the flutes above the ceiling runner. The plugs shall project beyond the finished side of the ceiling runner, flush with wall surface.

**ROCK WOOL MANUFACTURING CO** — Delta Deck Plugs

A2. **Forming Material* — Plugs —** As an alternate to Item 3A and for use only with Hilti Firestop Sprays (CP 672, CFS-SP WB), preformed mineral wool plugs, formed to the shape of the fluted floor units, friction fit to completely fill the flutes above the ceiling runner. The plugs shall project beyond the finished side of the ceiling runner, flush with wall surface.

**HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC** — CP777 Speed Plugs

B. **Forming Material* —** Min 4 pcf (64 kg/$m^3$) density mineral wool batt insulation cut to a thickness twice larger than the distance between the top of the gypsum board and the bottom of the steel floor unit. Material compressed 50 percent and installed within ceiling runner above top of liner panel flush with the inside surface of the panel. Material compressed and installed on finished side of the wall between the top of the gypsum board and the bottom of the steel floor units, flush with the surface of the wall.

**INDUSTRIAL INSULATION GROUP L L C** — MinWool-1200 Safing

**JOHNS MANVILLE** — Safing

**ROCK WOOL MANUFACTURING CO** — Delta Board

**ROXUL INC** — SAFE

**THERMAFIBER INC** — Type SAF

B1. **Forming Material* - Strips —** As an alternate to Item 2B and for use only with Hilti Firestop Sprays (CP 672, CFS-SP WB), the strips are stacked to a height twice larger than the distance between the top of the gypsum board and the bottom of the steel floor unit. Strips compressed 50 percent and installed within ceiling runner above top of liner panel flush with the inside surface of the panel. Strips compressed and installed on finished side of the wall between the top of the gypsum board and the bottom of the steel floor units, flush with the surface of the wall.

**HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC** — CP 767 Speed Strips

C. **Fill, Void or Cavity Material* —** Min 1/16 in. (01.6 mm) dry, (1/8 in. or 3.2 mm wet) thickness of fill material sprayed or brushed on each side of the wall in the flutes of the steel floor units and between the top of the gypsum board and the bottom of the steel floor units to completely cover mineral wool and overlap a min of 1/2 in. (13 mm) onto gypsum board and steel deck on both sides of wall.

**3M COMPANY** — Firedam Spray 200

**A/D FIRE PROTECTION SYSTEMS INC** — A/D FireBarrier Spray Acrylic

**EGS NELSON FIRESTOP** — FSC 3

**HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC** — CP672, CFS-SP WB Firestop Joint Spray

**PASSIVE FIRE PROTECTION PARTNERS** — 3500 SI, 5100 SP

**RECTORSEAL** — Metacaulk 1200 spray, Biostop 750 spray

**SPECIFIED TECHNOLOGIES INC** — SpecSeal AS200

**TREMCO INC** — TREMstop Acrylic SP

**UNITED STATES GYPSUM CO** — Type SA

C1. **Fill, Void or Cavity Material* — Tape —** As an alternate to the 3M Firedam Spray 200 (see Item C), Tape cut to size and press applied within fluted areas of joint to completely cover mineral wool lapping min 1 in. (25 mm) onto the contour of the steel floor units and extending to lap min 1 in. (25 mm) onto the gypsum wall. Additional pieces of Tape are applied along the joint to completely cover the remaining mineral wool between bottom of steel deck and top edge of wall along length of joint, lapping min 1 in. (25 mm) onto the contour of the steel floor units and min 1 in. (25 mm) onto the gypsum wall. Adjoining lengths of Tape shall overlap min 1/2 in. (13 mm). Tape shall be applied at both sides of wall.

**3M COMPANY** — 3M Fire and Water Barrier Tape

**Firestop Configuration B**

2. **Corrugated Steel Straps* —** A continuous length of min No. 20 ga galv corrugated steel strap to span the flute with ribs extending into flute cavity at the intersection of the valley surface and flute walls and overlapping the adjacent valleys 1 1/2 in. (38 mm). The steel strip is to be fastened to the floor assembly with typical steel fasteners or welds 16 in. (406 mm) O.C on both valleys. When wall length exceeds length of strap, straps are to be tightly butted or overlapped and fastened a max 2 in. (51 mm) from ends.

**BLAZEFRAME INDUSTRIES** — BlazeFrame FC (Flute Cover) Series

3. **Wall Assembly —** The 1 hr or 2 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 and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. **Steel Floor Runners —** Floor runners of wall assembly shall consist of galv steel channels sized to accommodate steel studs (Item 3C).

B. **Light Gauge Framing* - Slotted Ceiling Runner —** Slotted ceiling runner to consist of galv steel channel with slotted flanges sized to accommodate steel studs (Item 3C). Slotted ceiling runner installed perpendicular to direction of fluted steel deck secured to valleys (Configuration A) or parallel to direction of fluted deck secured to valleys or corrugated steel straps (Configuration B and C) with typical steel fasteners or welds spaced max 24 in. (610 mm)

**BLAZEFRAME INDUSTRIES** — BlazeFrame BST or BSTE

**MRI STEEL FRAMING LLC** — Smart Slotted Track

**SUPER STUD BUILDING PRODUCTS** — Slotted Track

C. **Studs —** Steel studs to be min 3-1/2 in. (89 mm) wide. Studs cut 1/2 to 3/4 in. (13 to 19 mm) less in length than assembly height with bottom nesting in and resting on floor runner and with top nesting in ceiling runner (Item 3B) steel studs secured to slotted ceiling runner with No. 8 by 1/2 in. (13 mm) long wafer head steel screws at mid-height of slot on min. one side of wall. Stud spacing not to exceed 24 in. (610 mm) OC.

D. **Gypsum Board* —** Gypsum board sheets installed to a min total thickness of 5/8 in. (16 mm) and 1-1/4 in. (32 mm) 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 in. (25 mm) 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 a min of 4 in. (102 mm) below the lower surface of the floor. The hourly fire rating of the joint system is equal to the hourly fire rating of the wall.

4. **Fill, Void or Cavity Material* — Caulk or Sealant —** Max separation between corrugated steel strap and top of wall is 1 in. (25 mm). The joint system is designed to accommodate a max 25 percent compression or extension from its installed width. Min 5/8 in. (16 mm) thickness of fill material installed on each side of the wall between the top of the gypsum board and the bottom of floor, flush with each surface of wall.

**A/D FIRE PROTECTION SYSTEMS INC** — A/D FireBarrier Acrylic Sealant

**EGS NELSON FIRESTOP** — ES 1399 Sealant

**HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC** — CP601S or CFS-S SIL GG Sealant

**SPECIFIED TECHNOLOGIES INC** — SpecSeal ES Sealant, Pensil 300 Sealant, SIL300 Sealant

**TREMCO INC** — TREMstop Acrylic or Fyre-Sil

**UNITED STATES GYPSUM CO** — Type A

5. **Fill, Void or Cavity Material* - Sealant or Caulk —** (Optional, not shown) - Min 1/8 in. (3.2 mm) bead of sealant applied at base of outside leg of corrugated ribs prior to fastening of corrugated steel strap to adjacent valleys. Any **Fill, Void or Cavity Materials*** sealant or caulk may be used.

**Firestop Configuration C**

2. **Corrugated Steel Straps* —** A continuous length of No. 20 ga galv corrugated steel strap to span the flute with ribs extending into flute cavity at the intersection of the valley surface and flute walls and overlapping the adjacent valleys 1 1/2 in. (38 mm). The steel strip is to be fastened to the floor assembly with typical steel fasteners or welds 16 in. (406 mm) O.C on both valleys. When wall length exceeds length of strap, straps are to be tightly butted or overlapped and fastened a max 2 in. (51 mm) from ends.

**BLAZEFRAME INDUSTRIES** — BlazeFrame FC (Flute Cover) Series

3. **Wall Assembly —** The 1 hr or 2 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 and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. **Steel Floor Runners —** Floor runners of wall assembly shall consist of galv steel channels sized to accommodate steel studs (Item 3C).

B. **Light Gauge Framing* - Slotted Ceiling Runner —** Slotted ceiling runner to consist of galv steel channel with slotted flanges sized to accommodate steel studs (Item 3C). Slotted ceiling

runner installed parallel to direction of fluted deck secured to valleys or corrugated steel straps with typical steel fasteners or welds spaced max 24 in. (610 mm)

**BLAZEFRAME INDUSTRIES** — BlazeFrame BST or BSTE

**MRI STEEL FRAMING LLC** — Smart Slotted Track

**SUPER STUD BUILDING PRODUCTS** — Slotted Track

C. **Studs —** Steel studs to be min 3-1/2 in. (89 mm) wide. Studs cut 1/2 to 3/4 in. (13 to 19 mm) less in length than assembly height with bottom nesting in and resting on floor runner and with top nesting in ceiling runner (Item 3B) steel studs secured to slotted ceiling runner with No. 8 by 1/2 in. (13 mm) long wafer head steel screws at mid-height of slot on min. one side of wall. Stud spacing not to exceed 24 in. (610 mm) OC.

D. **Gypsum Board* —** Gypsum board sheets installed to a min total thickness of 5/8 in. (16 mm) and 1-1/4 in. (32 mm) 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 in. (25 mm) 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 a min of 4 in. (102 mm) below the lower surface of the floor. The hourly fire rating of the joint system is equal to the hourly fire rating of the wall.

4. **Fill, Void or Cavity Material* — Sealant —** Max separation between bottom of fluted deck or corrugated steel strap and top of wall is 1 in. (25 mm). The joint system is designed to accommodate a max 25 percent compression or extension from its installed width. Min 5/8 in. (16 mm) thickness of fill material installed on each side of the wall between the top of the gypsum board and the bottom of floor, flush with each surface of wall.

**A/D FIRE PROTECTION SYSTEMS INC** — A/D FireBarrier Acrylic Sealant

**EGS NELSON FIRESTOP** — ES 1399 Sealant

**HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC** — CP601S or CFS-S SIL GG Sealant

**SPECIFIED TECHNOLOGIES INC** — SpecSeal ES Sealant, Pensil 300 Sealant, SIL300 Sealant

**TREMCO INC** — TREMstop Acrylic or Fyre-Sil

**UNITED STATES GYPSUM CO** — Type A

5. **Fill, Void or Cavity Material* - Sealant or Caulk —** (Optional, Not Shown) - Min 1/8 in. (3.2 mm) bead of sealant applied at base of outside leg of corrugated ribs prior to fastening of corrugated steel strap to adjacent valleys. Any **Fill, Void or Cavity Materials*** sealant or caulk may be used.

*** 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 2017-01-17