

XHBN.HW-D-0524 - 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 XHBN7 - Joint Systems Certified for Canada

See General Information for Joint Systems

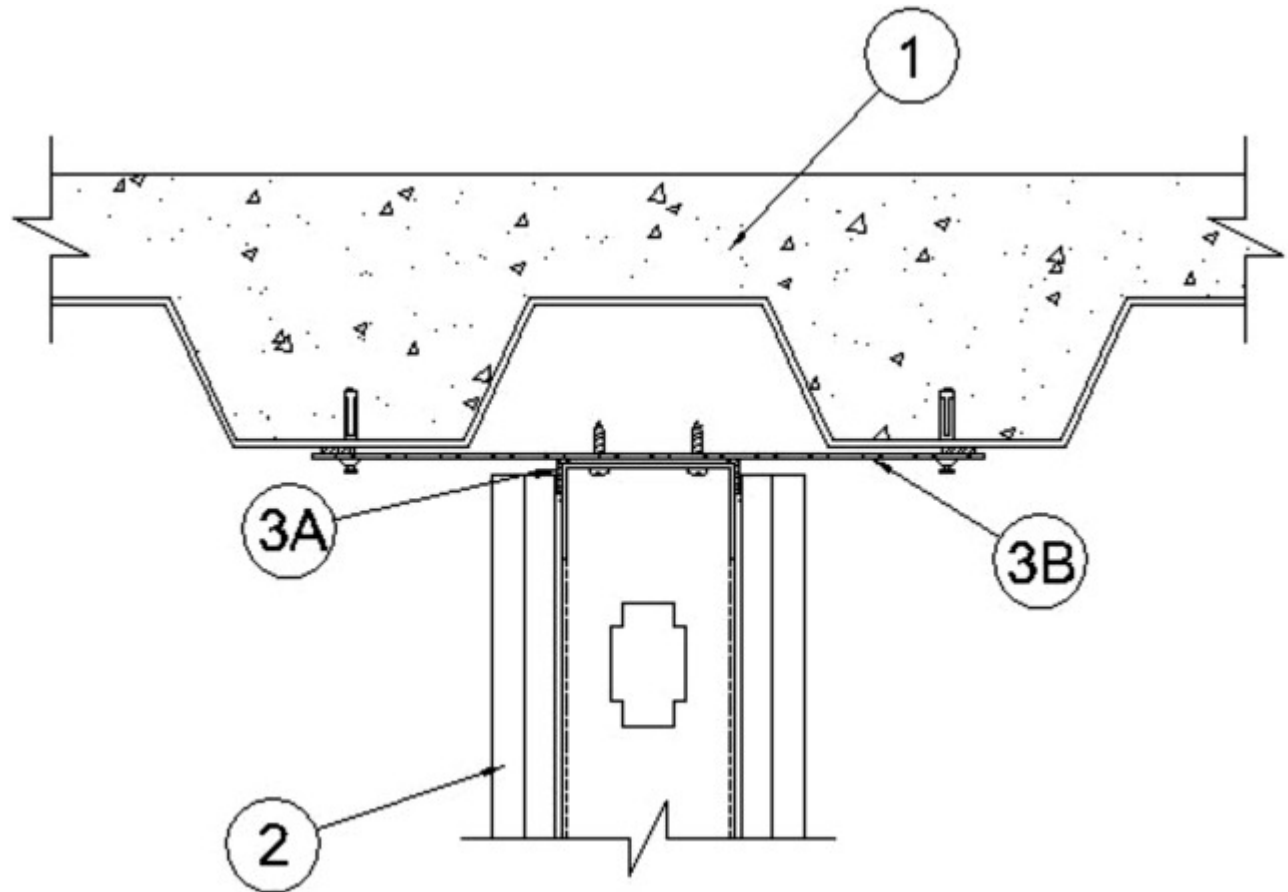
See General Information for Joint Systems Certified for Canada

System No. HW-D-0524

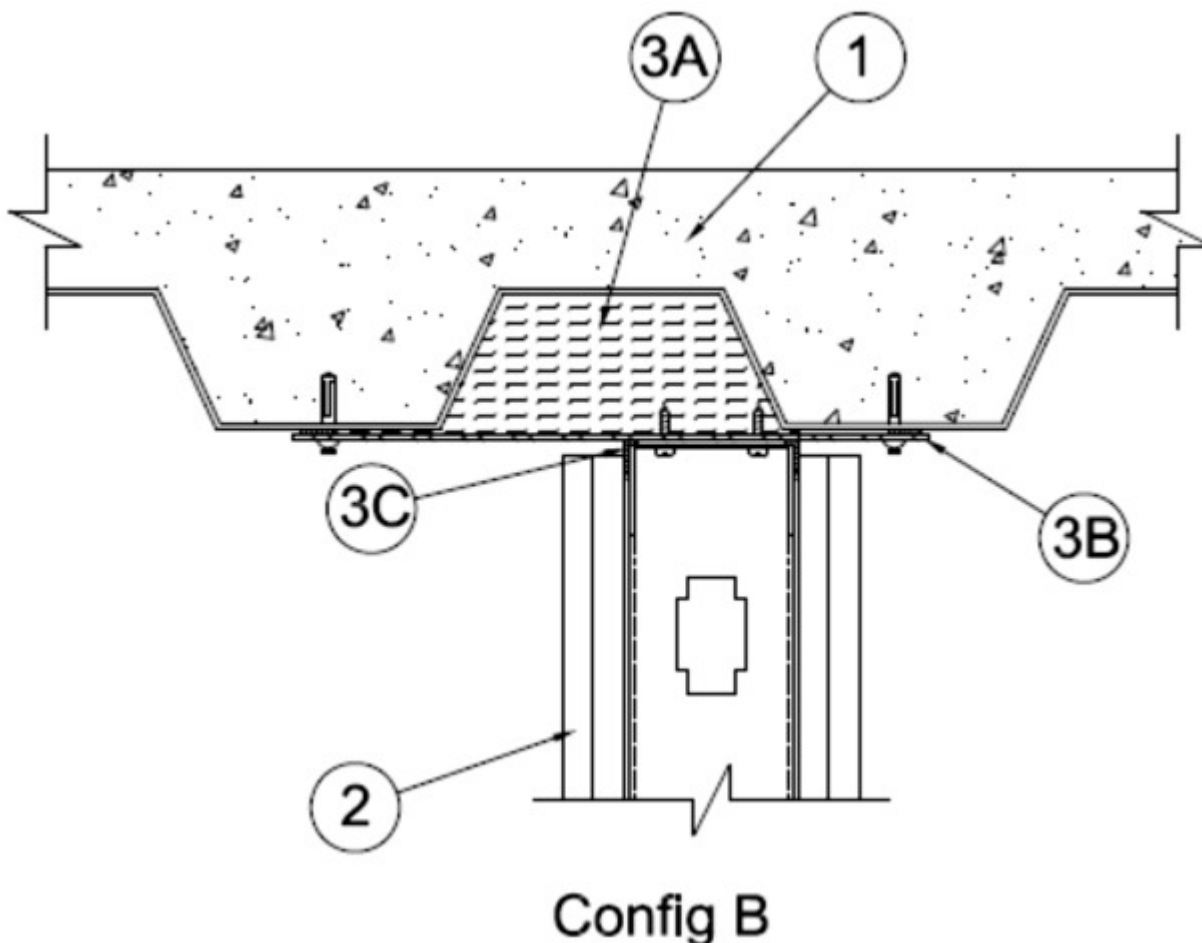
February 14, 2020

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 — 3/8, 1/2, 5/8, 3/4, 1, 1-1/2 In. (See Item 2 and 3)	FT Ratings — 1 and 2 Hr (See Item 2)
Class II or III Movement Capabilities — 80% Compression and or 30% Extension or 100% compression and extension (See Item 3)	FH Ratings — 1 and 2 Hr (See Item 2)
L Rating at Ambient — Less than 1 or 2.1 CFM/Lin Ft (See Item 3)	FTH Ratings — 1 and 2 Hr (See Item 2)
L Rating at 400°F — Less than 1 (See Item 3)	Nominal Joint Width — 10, 13, 16, 19, 25, 38 mm (see Item 2 and 3)
	Class II or III Movement Capabilities — 80% Compression and or 30% Extension or 100% compression and extension
	L Rating at Ambient — Less than 1.55 L/s/m (See Item 3)

L Rating at 203°C — Less than 1.55 L/s/m (See Item 3)



Configuration A



1. Floor Assembly — The fire-rated fluted steel floor unit/concrete floor assembly shall be constructed of the materials and in the manner described in the individual D900 Series Floor-Ceiling Design in the 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 lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete, as measure from the top plane of the floor units.

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 Floor and Ceiling Runners** — Floor runners of wall assembly shall consist of min No. 25 ga galv steel channels sized to accommodate steel studs (Item 2B). Floor runner to be provided with min 1-1/4 in. (32mm) legs. Legs are to be min 1/4 in. (6 mm) longer than the maximum joint width. The ceiling runners are provided with a fill, void or cavity material and are described in Item 3. Ceiling runner attached to steel strap (Item 3B) with steel fasteners spaced a max 24 in. (610 mm) OC.

A1. **Framing Members - Floor and Ceiling Runner*** — Not shown - In lieu of Item A — For use with Item 2C, proprietary channel shaped runners, 3-5/8 in. wide attached to floor and ceiling with fasteners 24 in. OC max. Legs are to be min 1/4 in. (6 mm) longer than the maximum joint width.

CALIFORNIA EXPANDED METAL PRODUCTS CO — ViperTrack™

MARINO/WARE, DIV OF WARE INDUSTRIES INC — ViperTrack™

A.2. **Light Gauge Framing* — Slotted Ceiling Track** — (Not Shown) - As an alternate to the Item 2A, a ceiling track consisting of galv steel channel with slotted flanges may be used when Item 3A.1 fill material is utilized. Slotted ceiling

track sized to accommodate steel studs (Item 2B). Legs are to be min 1/4 in. (6 mm) longer than the maximum joint with. Attached to steel deck or steel straps with steel fasteners or welds spaced max 24 in. (610 mm) OC.

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

CALIFORNIA EXPANDED METAL PRODUCTS CO — CST, CST 325

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

B. Studs — Steel studs to be min 3 5/8 in. (92 mm) wide. Studs cut 5/8 to 1-1/4 in. (16 to 32 mm) less in length than assembly height with bottom nesting in and secured to floor runner. 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 exposed slot.

B1. Framing Members - Steel Studs* — In lieu of Item B - Proprietary channel shaped studs, 3-5/8 in. wide spaced a max of 24 in. OC. Studs to be cut 5/8 to 1-1/4 in (16 to 32 mm) less than the assembly height with bottom nesting in and secured to floor runner. For direct attachment of gypsum board only.. 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 exposed slot.

CALIFORNIA EXPANDED METAL PRODUCTS CO — ViperStud™

MARINO/WARE, DIV OF WARE INDUSTRIES INC — ViperStud™

C. Gypsum Board* — Gypsum board sheets installed to a min total 5/8 in. (16 mm) or 1 1/4 in. (32 mm) thickness on each side of wall for 1 and 2 hr fire rated assemblies, respectively. Wall to be constructed as specified in the individual U400 or V400 Series Design in the UL Fire Resistance Directory except that a max 5/8 in. (16 mm) gap shall be maintained between the top of the gypsum board and the bottom of the floor assembly. The screws attaching the gypsum board to the studs along the top of the wall shall be located 4 to 5 in. (102 to 127 mm) down from deck at time of installation. No gypsum board attachment screws shall be driven into the ceiling runner.

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 floor and top of gypsum board (at time of installation of joint system) is 3/4 in. (19 mm). When 3A.1.1 is used max nominal gap is 1/2 in. (13mm). When item 3A.2 is used max nominal width is 3/8 in. (10 mm). When item 2A.2 is used max nominal width is 3/4 in. (19 mm). The joint system is designed to accommodate a max 80 percent compression and 30 percent extension from its installed width. When Item 3A6 is used the joint will accommodate 100 % compression/extension for nominal 1/2 in. (12 mm) gaps or compression only for nominal 1 in. (25 mm) gaps. When Item 3A7 is used the joint will accommodate 100% compression/ extension for nominal 3/4 in. (19 mm) gaps or compression only for 1-1/2 in. (38 mm) gaps.

Joint Configuration A

A1. Fill, Void or Cavity Material* — Min. 25 ga composite steel angle with one 5/8 in. (16 mm) leg and one 2-1/2 in (64 mm) leg with a 5/8 in. (16 mm) strip of intumescent strip affixed along the inside 2-1/2 in (64 mm) leg. The 5/8 in. leg of the steel angle is friction fit between the top web of the Item 2A ceiling runner and the steel straps on both sides. On shaft wall assemblies composite steel angle is installed on finish side of wall only.

CALIFORNIA EXPANDED METAL PRODUCTS CO — DDA (Deflection Drift Angle)

A1.1 Fill, Void or Cavity Material* — As an option to item 3A.1 a min 25 ga composite steel angle with one 5/8 in. (16 mm) leg and one 1-1/4 in (32 mm) leg with a strip of intumescent strip affixed along the inside 1-1/4 in (32 mm) leg. Steel angle is friction fit between the top web of the ceiling runner and the concrete deck.

CALIFORNIA EXPANDED METAL PRODUCTS CO — DDA-1 (Deflection Drift Angle)

A2. Fill, Void or Cavity Material* — In lieu of item 3A.1 - Min 20 ga steel channel track with 2, or 2-3/4 in. (51, or 70 mm) legs with or without slots having nom 1/2 in. (13 mm) wide intumescent strips affixed to the top web along the outer corner on both sides and sized to accommodate steel studs. Track attached to concrete deck with steel fasteners or welds spaced max 24 in. (610 mm) OC. On shaft wall assemblies intumescent is affixed to the top web on the on finish side of wall only.

CALIFORNIA EXPANDED METAL PRODUCTS CO — FAS Track 1000, FAS Track 1000DL, FAS J-Track

UNITED STATES GYPSUM CO — USG Sheetrock® Brand Firecode® J-Runner

MARINO/WARE, DIV OF WARE INDUSTRIES INC — FAS Track 1000, FAS Track 1000DL, FAS J-Track

A3. Fill, Void or Cavity Material* — (Not Shown) - as an alternate to 3A1.1, 3A2 for nominal 3/4 in. (19 mm) gap 80% compression and 30% extension between the edge of the drywall and the floor/ceiling assembly shall be filled with vinyl deflection bed with 5/16 in. (8 mm) intumescent strip and foam applied to horizontal leg that runs above the edge of the drywall. The perforated leg may be attached to surface of drywall with 1/2 in. (13 mm) staples every 6-8 in. (152-203 mm).

CALIFORNIA EXPANDED METAL PRODUCTS CO — HOTROD XL

MARINO/WARE, DIV OF WARE INDUSTRIES INC — HOTROD XL

TRIM-TEX INC — HOTROD XL

A4. Fill, Void or Cavity Material* — (Not Shown) - 3A1.1, 3A2 For nominal joint 3/4 in. (19 mm) 80% compression and 30% extension. Nominal 1 in. (25.4 mm) open cell foam plug having a nom 5/16 in. (8 mm) intumescent tape applied to the top surface of the foam profile. The foam is sized for 1 or 2 hour walls and shall be placed in the joint above the top edge of the drywall between the concrete slab. A layer of tape and joint compound can then be applied over the HOTROD Type X assembly.

CALIFORNIA EXPANDED METAL PRODUCTS CO — HOTROD Type-X

A5. Fill, Void or Cavity Material* — (Not Shown) - 3A1.1, 3A2 For 1/2 in. (13 mm) nominal gap 75% compression and 25% extension 1 in. (25.4 mm) open cell foam plug having a nom 5/16 in. (8 mm) intumescent tape applied to the top surface of the foam profile. The foam is sized for 1 or 2 hour walls and shall be placed in the joint above the top edge of the drywall between the floor/ceiling assembly.

CALIFORNIA EXPANDED METAL PRODUCTS CO — HOTROD Type-X

A6. Fill, Void or Cavity Material* — (Not Shown) - For nominal 1/2 in. (12mm) gaps 100% compression/ extension or 1 in. (25mm) compression only. As an alternate to DDA-1 (Item A1.1) a composite corrugated vinyl profile with a 1-1/2 in. (38 mm) wide leg and a 3/8 in. (10 mm) bubble gasket along the upper edge. A 5/8 in. (16 mm) wide intumescent strip affixed along the inside 1-1/2 in. (38 mm) leg. Composite vinyl profile is attached to the leg of the ceiling runner/track with 1/2 in. (13 mm) No. 8 framing screws or adhesively attached with double sided foam tape.

CALIFORNIA EXPANDED METAL PRODUCTS CO — Fire Gasket 1

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Fire Gasket 1

TRIM-TEX INC — Trim Tex-Fire Gasket 1

A7. Fill, Void or Cavity Material* — (Not Shown) For nominal 3/4 in. (19mm) gaps 100% compression/extension or 1-1/2 in. (38mm) compression only. As an alternate to DDA-1 (Item A1.1) a composite corrugated vinyl profile with a 2 in. (50 mm) wide leg and a 3/8 in. (10 mm) bubble gasket along the upper edge. A 1 in. (25 mm) wide intumescent strip affixed along the inside 1-1/2 in. (38 mm) leg. Composite vinyl profile is attached to the leg of the ceiling runner/track with 1/2 in. (13 mm) No. 8 framing screws or adhesively attached with double sided foam tape.

CALIFORNIA EXPANDED METAL PRODUCTS CO — Fire Gasket 1.5

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Fire Gasket 1.5

TRIM-TEX INC — Trim Tex-Fire Gasket 1.5

B. Steel Straps* — A continuous length of 20 ga galv steel strap with a nom 1/2 in. (13 mm) wide intumescent strip affixed to the edges to span the flute and overlap the adjacent valleys of fluted floor units by 1-1/2 in. (38 mm). The steel strip is to be fastened to floor assembly with the intumescent strips in contact with the bottom of deck using min 1-1/4 in. long steel fastener spaced 12 in. (305 mm) O.C on both valleys. When wall length exceeds length of strap, straps are to be tightly butted and fastened a max 2 in. (51 mm) from ends.

CALIFORNIA EXPANDED METAL PRODUCTS CO — FAS Strap

C. Fill, Void or Cavity Material — (Not Shown) - When item 3A1 or 3A2 is used an open cell polyurethane foam with a nominal diameter of 1/8 in. (3.2 mm) greater than the max width of the joint. The foam shall have a nominal density of 1.7 pcf. The foam is to be placed in the joint above the top edge of the drywall between the deck. A layer of tape and joint compound can then be applied over the open cell backer rod.

Joint Configuration B — Fill Void or Cavity (Item 3C) on ceiling runner (Item 2A) is to overlap onto valley of deck a minimum of 3/8 in. (10 mm). Max separation between bottom of floor and top of gypsum board (at time of installation of joint system) is 5/8 in. (16 mm). or 3/4 in. (19 mm) when item 3C.1 is used or 1/2 in. (13mm) when 3C.1.1 is used or 3/8 in. (10mm) when item 3C.2 is utilized. The joint system is designed to accommodate a max 80 percent compression and or 30 percent extension from its installed width.

A. Forming Material* — Min 4 pcf (64 kg/m³) mineral wool batt insulation cut to the shape of the fluted deck, approx 33 percent larger than the area of the flutes and compressed into the fluted area of the steel floor or roof deck above the ceiling channel.

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

A.1. Forming Material*-Plugs — (Not Shown) As an alternate to the forming material Configuration B (Item 3A), mineral wool plugs preformed to the shape of the fluted floor units or roof deck, may be used within the flutes. Plugs shall be friction fitted to completely fill the flutes.

ROCK WOOL MANUFACTURING CO — Delta Deck Plugs

B. Steel Straps — Min 2 in. (51 mm) wide 16 MSG galv steel straps cut to a length, length to span the flute and overlap the adjacent valleys of fluted floor units by 1-1/2 in. (38 mm). Straps spaced max 24 in. (610 mm) O.C. and fastened to floor assembly with using one min 1-1/4 in. long steel fastener at each end.

C1. Fill, Void or Cavity Material* — Min. 25 ga composite steel angle with one 5/8 in. (16 mm) leg and one 2-1/2 in (64 mm) leg with a 5/8 in. (16 mm) strip of intumescent strip affixed along the inside 2-1/2 in (64 mm) leg. The 5/8 in. leg of the steel angle is friction fit between the top web of the Item 2A ceiling runner and the steel straps on both sides. On shaft wall assemblies composite steel angle is installed on finish side of wall only.

CALIFORNIA EXPANDED METAL PRODUCTS CO — DDA (Deflection Drift Angle)

C1.1 Fill, Void or Cavity Material* — As an option to item 3C1 a min 25 ga composite steel angle with one 5/8 in. (16 mm) leg and one 1-1/4 in (32 mm) leg with a strip of intumescent strip affixed along the inside 1-1/4 in (32 mm) leg. Steel angle is friction fit between the top web of the ceiling runner and the concrete deck.

CALIFORNIA EXPANDED METAL PRODUCTS CO — DDA-1 (Deflection Drift Angle)

C2. Fill, Void or Cavity Material* — In lieu of item 3C - Min 20 ga steel channel track with 2, or 2-3/4 in. (51, or 70 mm) legs with or without slots having nom 1/2 in. (13 mm) wide intumescent strips affixed to the top web along the outer corner on both sides and sized to accommodate steel studs. Track attached to steel strap with steel fasteners or welds spaced max 24 in. (610 mm) OC. On shaft wall assemblies intumescent is affixed to the top web on the on finish side of wall only.

CALIFORNIA EXPANDED METAL PRODUCTS CO — FAS Track 1000, FAS Track 1000DL, FAS J-Track

UNITED STATES GYPSUM CO — USG Sheetrock® Brand Firecode® J-Runner

MARINO/WARE, DIV OF WARE INDUSTRIES INC — FAS Track 1000, FAS Track 1000DL, FAS J-Track

D. Fill, Void or Cavity Material* — (Not Shown) when item 3C.1 is utilized a min 1/16 in. (1.6 mm) dry thickness (min 1/8 in. or 3.2 mm wet thickness) of fill material sprayed or brushed on one side of the joint system, completely covering item 3B mineral wool forming material of the joint system and overlapping a min of 1/2 in. (13 mm) onto the steel deck and item 3A.1 DDA on one side of the wall.

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

SPECIFIED TECHNOLOGIES INC — SpecSeal AS200 Elastomeric Spray

E. Packing Material — (Not Shown) - When item 3A1, 3A1.1 or 3A2 is used a continuous length of open cell polyurethane foam with a nominal diameter of 1/8 in. (3.2 mm) greater than the max width of the joint. The foam shall have a nominal density of 1.7 pcf. The foam is to be placed in the joint above the top edge of the drywall between the deck. Any splices are to be tightly butted. A layer of tape and joint compound can then be applied over the open cell foam. Backer rod is not required with item 3A1.2

When using DDA and Item 3D or Fire Gasket the L Rating at ambient and at 400 °F is less than 1 CFM/ft².

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

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