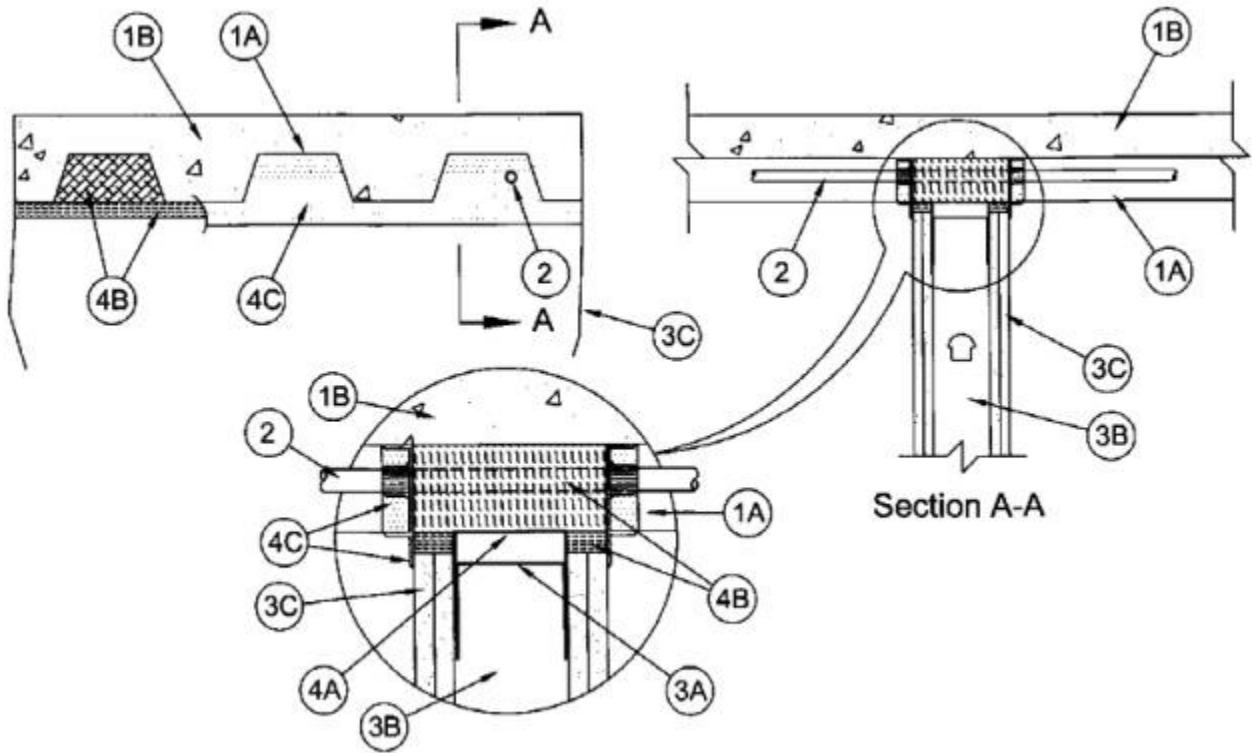


System No. HW-D-0043

September 26, 2019

ANSI/UL2079	CAN/ULC S115
Assembly Ratings — 1, 2, 3 and 4 Hr (See Items 2 and 3)	F Ratings — 1, 2, 3 and 4 Hr (See Items 2 and 3)
Nominal Joint Widths - 1-1/2 and 2-1/2 In. (See Item 4)	FT Ratings — 1, 2, 3 and 4 Hr (See Items 2 and 3)
Class II Movement Capabilities — 40 or 50% Compression or Extension (See Item 4)	FH Ratings — 1, 2, 3 and 4 Hr (See Items 2 and 3)
L Rating At Ambient — Less Than 1 CFM/sq ft	FTH Ratings — 1, 2, 3 and 4 Hr (See Items 2 and 3)
L Rating At 400 F — Less Than 1 CFM/sq ft	Nominal Joint Widths - 1-1/2 and 2-1/2 In. (See Item 4)
	Class II Movement Capabilities — 40 or 50% Compression or Extension (See Item 4)
	L Rating At Ambient — Less Than 1 CFM/sq ft
	L Rating At 400 F — Less Than 1 CFM/sq ft



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. 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 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.

1A. **Roof Assembly** — (Not Shown) — As an alternate to the floor assembly (Item 1), a fire rated fluted steel deck roof assembly may be used. The roof assembly shall be constructed of the materials and in the manner described in the individual P900 Series Roof-Ceiling Design in the UL Fire Resistance Directory. The hourly fire rating of the roof assembly shall be equal to or greater than the hourly fire 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** — Min 2-1/4 in. (57 mm) thick poured insulating concrete, as measured from the top plane of the steel roof deck.

2. **Through Penetrant** — (Optional) — Max one penetrant per flute to be installed parallel and centered within the flutes of the steel deck. Penetrants installed with a min annular space of 1/2 to 1-2/ in. in. (13-38 mm) between the penetrant and the steel deck. Penetrant to be rigidly supported on both sides of wall assembly. The following types and sizes of penetrants may be used:

A. **Conduit** — Nom 1/2 in. diam (or smaller) steel electrical metallic tubing (EMT) or steel conduit.

B. **Conduit** — Nom 1-1/2 in. diam (or smaller) Schedule 40 PVC conduit.

C. **Polyvinyl Chloride (PVC) Pipe** — Nom 1-1/2 in. (38 mm) diam (or smaller) Schedule 40 solid or cellular core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

D. **Chlorinated Polyvinyl Chloride (CPVC) Pipe** — Nom 1-1/2 in. (38 mm) diam (or smaller) SDR17 SDR13.5 CPVC pipe for use in closed (process or supply) piping systems.

When steel conduit or EMT (Item 2A) is installed in flute of steel deck, the hourly rating of the joint system is 1 hr. When nonmetallic penetrates (Items 2B, 2C and 2D) are installed in flute of steel deck, the hourly rating of the joint system is equal to the hourly fire rating of the wall assembly up to a max of 2 hr.

3. **Wall Assembly** — 1, 2, 3 or 4 hr fire-rated gypsum board/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 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. When deflection channel (Item 4A) is used, flange height of ceiling runner is to be equal to or greater than flange height of deflection channel and the ceiling runner is to nest within the deflection channel with a 1/2 to 3/4 in. (13 to 19 mm) gap maintained between the top of the ceiling runner and the top of the deflection channel. When deflection channel is not used, flange height of ceiling runner shall be min 1/4 in. (6 mm) greater than max extended joint width. Ceiling runner installed perpendicular to direction of fluted steel deck and secured with steel masonry anchors or welds spaced max 24 in. (610 mm) OC.

A1. **Light Gauge Framing*** — **Slotted Ceiling Runner** — Slotted ceiling runner may be used as an alternate to the ceiling runner in Item 3A. Slotted ceiling runner to consist of galv steel channel with slotted flanges sized to accommodate steel studs (Item 3B). Ceiling runner installed perpendicular to direction of fluted steel floor or

roof deck and secured to valleys with steel masonry anchors spaced max 24 in. (610 mm) OC. When slotted ceiling runner is used, deflection channel (Item 4A) shall not be used.

BRADY CONSTRUCTION INNOVATIONS INC, DBA SLIPTRACK SYSTEMS — SLP-TRK, SLPTRK325

CALIFORNIA EXPANDED METAL PRODUCTS CO — CST

CLARKDIETRICH BUILDING SYSTEMS — Type SLT, SLT-H

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

METAL-LITE INC — The System

RAM SALES L L C — RAM Slotted Track

SCAFCO STEEL STUD MANUFACTURING CO

TELLING INDUSTRIES L L C — True-Action Deflection Track

A2. Light Gauge Framing* — Vertical Deflection Ceiling Runner — When the nominal joint width is less than or equal to 1 in. (25 mm), vertical deflection ceiling runner may be used as an alternate to the ceiling runner in Items 3A and 3A1., Vertical deflection ceiling runner to consist of galv steel channel with slotted vertical deflection clips mechanically fastened within runner. Slotted clips, provided with step bushings, for permanent fastening of steel studs. Vertical deflection ceiling runner installed

perpendicular to direction of fluted steel deck and secured to valleys with steel masonry anchors spaced max 24 in. (610 mm) OC. When vertical deflection ceiling runner is used, deflection channel (Item 4A) shall not be used.

A3. Light Gauge Framing* — Notched Ceiling Runner — As an alternate to the ceiling runners in Items 3A through 3A3, notched ceiling runners to consist of C-shaped galv steel channel with notched return flanges sized to accommodate steel studs (Item 3B). Notched ceiling runner installed perpendicular to direction of fluted steel deck and secured to valleys with steel masonry anchors spaced max 24 in. (610 mm) OC. When notched ceiling runner is used, deflection channel (Item 4A) shall not be used.

OLMAR SUPPLY INC — Type SCR

A4. Steel Framing Members* — Sound Isolation Clips — (Not Shown, For Max 2 hr Assembly Rating) — As an alternate attachment means for the ceiling runner to the underside of the floor or roof assembly when no deflection channel (Item 4A) is used, sound isolation clips installed in accordance with the accompanying installation instructions. Sound isolation clip installed through nom 1 in. (25 mm) diam hole in ceiling runner and attached to top of ceiling runner using four min No. 8 by 1/2 in. (13 mm) long self-tapping galv steel screws. Sound isolation clips to be installed adjacent to every stud location but not more than 24 in. (610 mm) OC and attached to the underside of floor or roof assembly using min 3/16 in. (5 mm) diam by 2-1/2 in. (64 mm) long steel masonry anchors.

PAC INTERNATIONAL L L C — Type RSIC-U-HD

B. Studs — Steel studs to be min 3-1/2 in (89 mm) wide. Studs cut 1/2 to 1-1/4 in. (13 to 32 mm) less in length than assembly height with bottom nesting in and secured to floor runner. When deflection channel (Item 4A) is used, steel studs attached to ceiling runner with sheet metal screws located 1/2 in. (13 mm) below the bottom to the deflection channel. When deflection channel is not used, studs to nest in ceiling runner without attachment. When slotted ceiling runner (Item 3A1) is used, steel studs secured to slotted ceiling runner with No. 8 by 1/2 in. (13 mm) long wafer head steel screws at midheight of slot on each side of wall. When vertical deflection ceiling runner (Item 2A2) is used, steel studs secured to slotted vertical deflection

clips, through the bushings, with steel screws at midheight of each slot. Stud spacing not to exceed 24 in. (610 mm) OC.

C. **Gypsum Board*** — Gypsum board sheets installed to a min total thickness of 5/8 in., 1-1/4 in., 1-1/2 in. or 2 in. (16, 32, 38 or 51 mm) on each side of wall for 1, 2, 3 and 4 hr fire rated assemblies, respectively. Wall to be constructed in the individual U400 Series Design in the UL Fire Resistance Directory, except that a max 1 or 2 in. (25 or 51 mm) gap (See Item 4) shall be maintained between the top of the gypsum board and the bottom surface of the steel floor or roof deck. The screws attaching the gypsum board to the studs along the top of the wall shall be located 1 in. (25 mm) below the bottom of the ceiling runner. No gypsum board attachment screws shall be driven into the ceiling runner or into the optional deflection channel.

When through penetrant (Item 2) is not used, the hourly fire rating of the joint system is equal to the hourly fire rating of the wall.

4. **Joint System — Max separation between bottom of floor or roof deck and top of gypsum board (at time of installation of joint system) is 2-1/2 in. (64 mm) for 1 and 2 hr Ratings and 1 in. (25 mm) for 3 and 4 hr Ratings. The joint system is designed to accommodate a max 50 percent compression or extension from its installed width for max 1-1/2 in. (38 mm) wide joints and a max 40 percent compression or extension from its installed width for max 2-1/2 in. (64 mm) wide joints.** The joint system shall consist of forming and fill materials, with or without a deflection channel (Item 4A), as follows:

A. **Deflection Channel** — (Optional) — Max 2 in. (51 mm) deep min 24 gauge galv steel channel sized to accommodate ceiling runner (Item 3A). Deflection channel installed perpendicular to direction of fluted steel deck and secured to valleys with steel masonry anchors or welds spaced max 24 in. (610 mm) OC. The ceiling runner is installed within the deflection channel to maintain a 1/2 to 3/4 in. (13 to 19 mm) gap between the top of the ceiling runner and the top of the deflection channel. The ceiling runner nests inside the deflection channel without attachment.

B. **Forming Material*** — Nom 4 pcf (64 kg/m³) mineral wool batt cut to the shape of the steel deck flute and installed into the flutes above the ceiling channel. The mineral wool batt pieces are to be stacked to a thickness approx 1 in. (25 mm) greater than the overall thickness of the wall and compressed approx 14 percent in depth thickness such that it is flush with the gypsum board surface on both sides of the wall. When sound isolation clips (Item 2A5) are used, the space between the top of the ceiling runner and the underside of the floor or roof shall be tightly packed with mineral wool batt insulation. Additional sections of mineral wool batt insulation are compressed 50 percent in thickness and installed cut edge first to completely fill the gap above the top of the gypsum board, flush with both surfaces of wall.

INDUSTRIAL INSULATION GROUP L L C — MinWool-1200 Safing

ROCK WOOL MANUFACTURING CO — Delta Board

ROCKWOOL MALAYSIA SDN BHD — Safe

ROCKWOOL — Safe

THERMAFIBER INC — SAF

B1. **Forming Material*** — (Optional, Not Shown) — Preformed mineral wool plugs, formed to the shape of the fluted floor units, friction fit to completely fill the flutes above the ceiling channel. The plugs shall project beyond each side of the ceiling runner and shall be recessed from both wall surfaces to accommodate the required thickness of fill material (Item 4C). Additional forming material, described in Item 4B, to be used in conjunction with the plugs to fill the gap between the top of gypsum board and bottom of steel deck.

THERMAFIBER INC — TopStop mineral wool deck plugs Type SAF batts

C. **Fill, Void or Cavity Material* — Sealant** — Min 1/16 in. (1.6 mm) dry thickness (min 1/8 in. or 3.2 mm wet thickness) of fill material spray applied on each side of the wall in the flutes of the steel floor or roof deck and between the top of the wall and the bottom of the steel floor or roof deck and overlap a min 1/2 in. (13 mm) onto gypsum board on both sides of wall. Additional 1/6 in. (1.6 mm) dry thickness (1/8 in. or 3.2 mm wet thickness) of fill material shall overlap a min 1/2 in. (13 mm) onto the steel deck and steel conduit or EMT (when used) on both sides of wall.

SPECIFIED TECHNOLOGIES INC — SpecSeal AS200 Elastomeric Spray

*** 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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