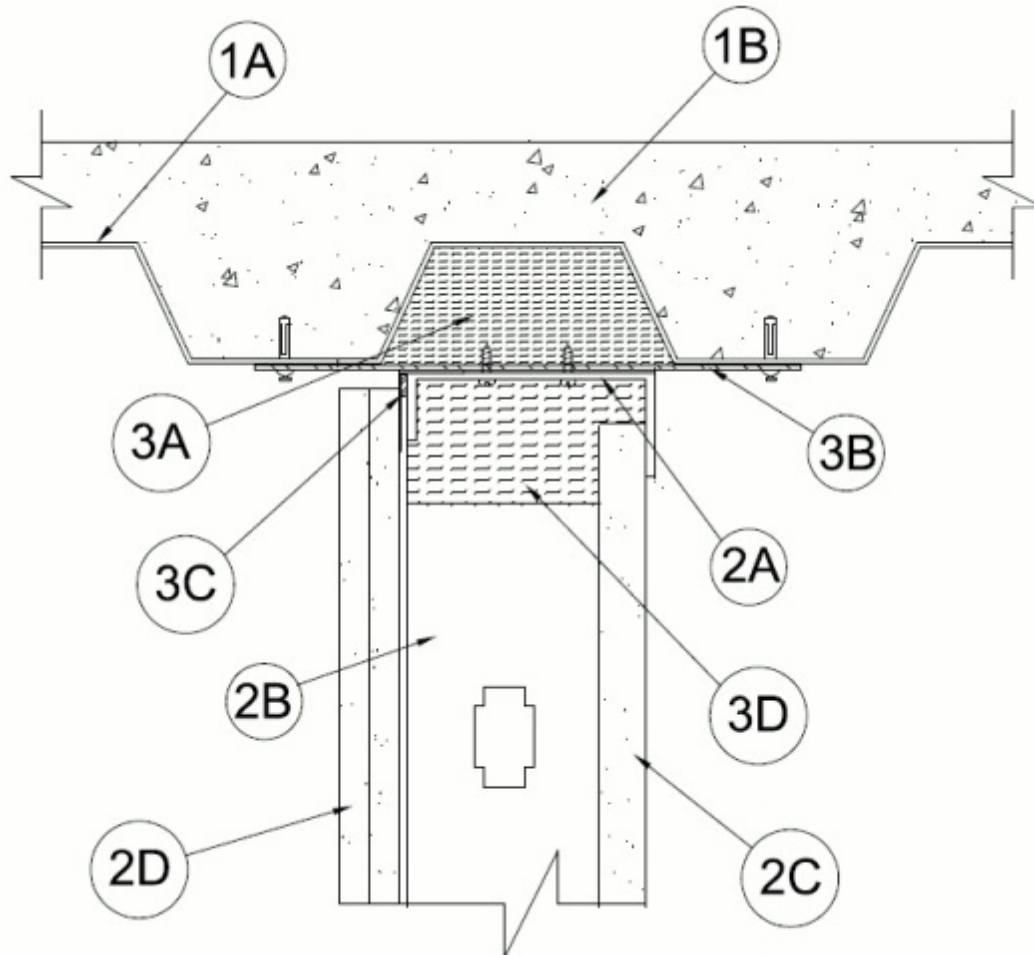




### System No. HW-D-0721

October 28, 2013

ANSI/UL2079	CAN/ULC S115
Assembly Rating — 1 and 2 Hr (See Item 2)	F Ratings — 1 and 2 Hr (See Item 2)
Nominal Joint Width - 3/8 in.	FT Ratings — 1 and 2 Hr (See Item 2)
Class II or III Movement Capabilities — 100% 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 - 3/8 in.
	Class II or III Movement Capabilities — 100% Compression or Extension
	L Rating at Ambient — Less than 1 CFM/Lin Ft
	L Rating at 400°F — Less than 1 CFM/Lin Ft



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/m<sup>3</sup>) concrete, as measure from the top plane of the floor units.

**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 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.

**2. Shaft 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, V400 or W400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:

**A. Floor and Ceiling Runners** — "J"-shaped runner, min 4 in. (102 mm) wide with unequal legs of min 1 in. (25 mm) and min 2 in. (51 mm), fabricated from min 24 MSG galv steel. Ceiling runner installed offset and parallel to steel deck direction with short leg toward finished side of wall. Ceiling runner to be attached to steel straps (Item 3B) with steel fasteners spaced a max 24 in. (610 mm) OC with two fasteners into each strap. As an alternate to the "J"-shaped runner, a min 4 in. (102 mm) wide by 1 or 1-1/4 in. (25 or 32 mm) deep channel formed from min 25 MSG galv steel may be used for the floor runner.

**B. Studs** — "C-T", "I", or "C-H" shaped steel studs to be min 4 in. (102 mm) wide and formed of min 25 ga galv steel. Studs cut 5/8 to 3/4 in. (16 to 19 mm) less in length than assembly height with bottom nesting in floor runner. Studs spaced max 24 in. (610 mm) OC.

**C. Gypsum Board\*** — 1 in. (25 mm) thick by max 24 in. (610 mm) wide gypsum board liner panels. Panels cut max 1 in. (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.

**D. Gypsum Board\*** — Gypsum board 5/8 in. (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 in. (9.5 mm) less in length than the floor to ceiling height. The screws attaching the gypsum board layer(s) to the "C-T", "I", or "C-H" studs shall be located 3 to 3-1/2 in. (76 to 89 mm) below the steel deck. No gypsum board attachment screws shall be driven into the ceiling runner.

**The hourly fire rating and the F, FT, FH and FTH ratings of the joint system are 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 3/8 in. (9.5 mm). The joint system is designed to accommodate a max 100 percent compression or extension from its installed width. The joint system shall consist of the following:

**A. Forming Material\*** — Min 4 pcf (64 kg/m<sup>3</sup>) 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.

See **Forming Material** (XHKU) category in the Fire Resistance Directory for names of manufacturers.

**A1. Forming Material\* - Plugs** — (Not Shown) As an alternate to the forming material 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 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) OC and fastened to floor assembly with one min 1-1/4 in. long steel fastener at each end.

**C. Fill, Void or Cavity Material\*** — Min 25 ga composite steel angle with one 5/8 in. (16 mm) leg and one 1-1/2 in (38 mm) leg with an intumescent strip affixed along the inside 1-1/2 in (38 mm) leg. The 5/8 in. leg of steel angle is friction fit between the top web of the ceiling runner and the steel straps. Steel angle is required on finished side of wall only.

**RECTORSEAL** — Track Safe

**D. Forming Material\*** — Min 3 in. (76 mm) thickness of min 4 pcf (64 kg/m<sup>3</sup>) mineral wool batt insulation cut to width of stud, compressed min 25 percent in width and friction fit into ceiling runner between leg of track and gypsum liner board.

See **Forming Material** (XHKU) category in the Fire Resistance Directory for names of manufacturers.

**E. Fill, Void or Cavity Material\*** — (Not Shown) - Min 1/8 in. (3 mm) wet thickness (min 1/16 in. or 1.6 mm dry thickness) of fill material spray applied or brushed over the exposed forming material in flutes (Item 3A or 3A1) on one side of wall. Fill material to overlap min 1/2 in. (13 mm) onto steel floor or roof deck, steel straps (Item 3B) and steel angle (Item 3C).

**RECTORSEAL** — Metacaulk 1200 Spray, Metacaulk 1500 Spray, Biostop 750 Spray, Biostop 800 Spray, FS 3000 Spray

\*Bearing the UL Classification Mark