

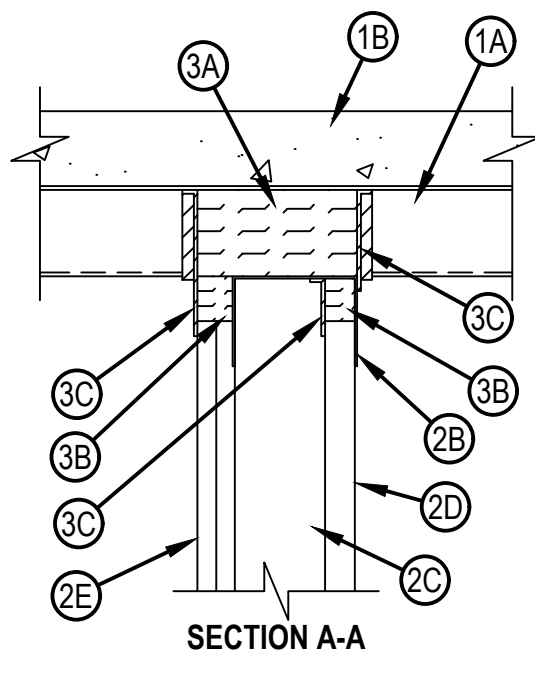
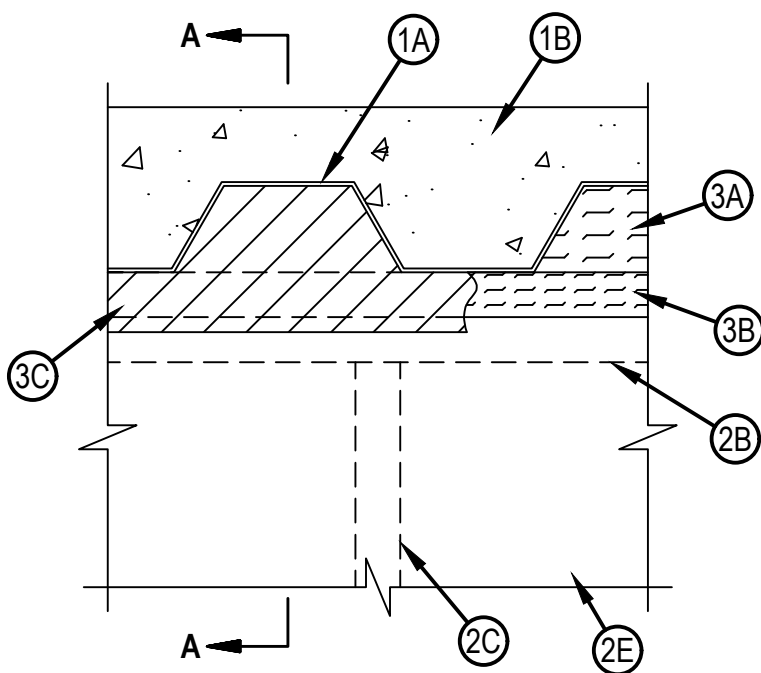


Classified by
Underwriters Laboratories, Inc.
to UL 2079 and CAN/ULC-S115

System No. HW-D-0569

HW-D-0569

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 - 1-1/2 In.	FT Ratings — 1 and 2 Hr (See Item 2)
Class II Movement Capabilities — 50% Compression and 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 - 1-1/2 In.
	Class II Movement Capabilities — 50% Compression and 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 deck/concrete floor assembly shall be constructed of the materials and in the manner described in the individual D700 or D900 Series Floor-Ceiling Design in the UL Fire Resistance Directory. 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 lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete, as measured from the top plane of the floor units.
 - C. Spray-Applied Fire Resistive Materials* — (Optional, Not Shown) — Prior to or after installation of the steel ceiling runners (Item 2B) the steel floor units may be sprayed with a min 5/16 in. (8 mm) to max 1 3/4 in. (45 mm) thickness of fire resistive material.
GCP APPLIED TECHNOLOGIES INC — Type MK-6-HY
ISOLATEK INTERNATIONAL — Type 300
 - D. Steel Attachment Clips — (Optional, Not Shown) - Used to secure ceiling runner when spray-applied fire resistive material is applied to floor units prior to installation of ceiling runner of wall. Z-shaped clips formed from 1 in. (25 mm) wide strips of min 20 ga galv steel. Clips to be sized to extend through the thickness of the spray-applied fire-resistive material on the floor units with 1-1/2 in. (38 mm) long upper and lower legs. Legs of clips fastened to bottom of roof deck (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 within 1/4 to 3/4 in. (6 to 19 mm) from the surface of the wall.
- 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 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 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 — Min 2-1/4 in. (57 mm) thick poured insulating concrete, as measured from the top plane of the steel roof deck.
- 1B. Roof Assembly — As an alternate to Items 1 and 1A, a fire rated protected 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 P700 Series Roof-Ceiling Design 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. Steel Attachment Clips — (Optional, Not Shown) - Used to secure ceiling runner when spray-applied fire resistive material is applied to roof deck prior to installation of ceiling runner of wall. Z-shaped clips formed from 1 in. (25 mm) wide strips of min 20 ga galv steel. Clips to be sized to extend through the thickness of the spray-applied fire-resistive material on the roof deck with 1-1/2 in. (38 mm) long upper and lower legs. Legs of clips fastened to bottom of roof deck (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 within 1/4 to 3/4 in. (6 to 19 mm) from the surface of the wall.
 - C. Spray—Applied Fire Resistive Materials* — (Not Shown)—Prior to or after the installation of the steel ceiling runners, the roof assembly shall be sprayed with the type and thickness of fire resistive material indicated in the individual P700 Series design.
ISOLATEK INTERNATIONAL — Type 300
GCP APPLIED TECHNOLOGIES INC — Type MK-6/HY
2. Shaft Wall Assembly — The 1 hr or 2 hr fire rated gypsum board/steel stud shaft 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 Wall Runners — (Not Shown) - J-shaped runner, equal in width to steel studs (Item 2C), with unequal legs of 1 in. (25 mm) and 2 in. (51 mm), fabricated from 24 MSG galv steel. Runners positioned with short leg toward finished side of wall. Runners attached to floor with steel fasteners located not greater than 2 in. (51 mm) from ends and not greater than 24 in. (610 mm) OC.
 - B. Ceiling Runner — Ceiling runner of wall assembly shall consist of galv steel channel sized to accommodate steel studs (Item 2C). 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 to steel deck valleys with steel fasteners or welds spaced max 24 in. (610 mm) OC or to steel attachment clips (Item 1D) with steel fasteners spaced max 16 in. (406 mm) OC.

B1. Light Gauge Framing* - Slotted Ceiling Runner — As an alternate to the ceiling runner in Item 2B, slotted ceiling runner to consist of galv steel channel with slotted flanges sized to accommodate steel studs (Item 2C). Flange height of slotted ceiling runner shall be min 1/4 in. (6 mm) greater than max extended joint width. Slotted ceiling runner installed perpendicular to direction of fluted steel deck and secured to steel deck valleys before or after optional spray-applied fire resistive material is used with steel masonry anchors spaced max 24 in. (610 mm) OC. The use of welds to secure the ceiling runner may only be used prior to the installation of the optional spray-applied material.

CEMCO, LLC — CST

CLARKDIETRICH BUILDING SYSTEMS — Types 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 — Slotted Track

TELLING INDUSTRIES L L C — True-Action Deflection Track

B2. Light Gauge Framing* — Slotted Ceiling Runner — As an alternate to the ceiling runner in Item 2B, slotted ceiling runner to consist of galv steel channel, sized to accommodate steel studs (Item 2C). Flange height of slotted ceiling runner shall be 3-1/4 in. (83 mm) with 2 in. (51 mm) deep slots. Slotted ceiling runner installed perpendicular to direction of fluted steel deck and secured to steel deck valleys as described in Item B1.

SCAFCO STEEL STUD MANUFACTURING CO — Slotted Track-Type SDLT

C. Steel Studs — "C-H" or "C-T"-shaped studs, min 4 in. (102 mm) wide by 1-1/2 in. (38 mm) deep, fabricated from 25 MSG galv steel, cut to lengths 3/4 to 1 in. (19 to 25 mm) less than floor to ceiling height and spaced 24 in. (610 mm) OC. When slotted ceiling runner specified in Item 2B2 is used the C-H-shaped studs cut in lengths 3/4 to 1-3/4 in. (19 to 44 mm) less than floor to ceiling height.

D. Gypsum Board* — Nom 1 in. (25 mm) thick gypsum board liner panels. Panels cut 1-1/2 in. (38 mm) less in length than floor to ceiling height. Vertical edges inserted into the "H"-shaped section of "C-H" studs or "T"-shaped section of "C-T" studs. At the ends of the assembly, the free edge of the end panels are attached to the long leg of vertical J-runners (Item 2A) with 1-5/8 in. (41 mm) long Type S steel screws spaced max 12 in. (305 mm) OC.

E. Gypsum Board* — Nom 5/8 in. (16 mm) thick gypsum board applied vertically in one or two layers for 1 hr and 2 hr fire rated assemblies, respectively. Panels cut 1-1/2 in. (38 mm) less in length than floor to ceiling height. The screws attaching the gypsum board layers to the C-H or C-T studs shall be located 1 to 1-1/2 in. (25 to 38 mm) below the bottom of the ceiling runner or slotted ceiling track. No gypsum board attachment screws are to penetrate the ceiling runner or slotted ceiling track.

The hourly ratings of the joint system are equal to the hourly fire rating of the wall.

3. Joint System — Max separation between bottom of fluted deck surface and top of gypsum board (at the time of installation of the joint system) is 1 1/2 in. (38 mm). The joint system is designed to accommodate a max 50 percent compression or extension from its installed width. The joint system consists of the following:

A. Forming Material* — Min 4 pcf (64 kg/m³) density mineral wool batt insulation sized to attain a min compression rate of 25 percent in the thickness direction and firmly packed to completely fill the flutes of the steel floor units or roof deck above the ceiling runner as a permanent form. The mineral wool batt insulation is to project beyond the ceiling runner to be flush with the finished wall surfaces. Alternately, nom 4 pcf (64 kg/m³) forming material cut to shape of flute and nom 1 in. (25 mm) longer than thickness of wall; mineral wool compressed from ends and firmly packed into each flute to attain a min compression rate of 14.3 percent in the length (wall thickness) direction to be flush with both wall surfaces.

Johns Manville Corporation — MinWool-1200 Safing

JOHNS MANVILLE — Safing

ROCK WOOL MANUFACTURING CO — Delta Board

ROCKWOOL — SAFE

THERMAFIBER/OWENS CORNING — 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 or roof deck, 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/m³) 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 or roof deck. 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 or roof deck, flush with the surface of the wall.

Johns Manville Corporation — MinWool-1200 Safing

JOHNS MANVILLE — Safing

ROCK WOOL MANUFACTURING CO — Delta Board

ROCKWOOL — SAFE

THERMAFIBER/OWENS CORNING — Type SAF

B1. Forming Material* - Strips — As an alternate to Item 2B, 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 or roof deck. 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 or roof deck, 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. (1.6 mm) dry thickness (1/8 in. or 3.2 mm wet thickness) of fill material sprayed or troweled within stud cavity and on both sides of the shaft wall to completely cover mineral wool forming material. Fill material to overlap a min of 1/2 in. (13 mm) onto gypsum board and ceiling runner within stud cavity. Fill material to overlap a min of 1/2 in. (13 mm) onto gypsum board and steel deck on finished side of wall. Fill material to overlap a min of 1/2 in. onto steel deck and ceiling runner on unfinished side of wall with no overlap onto gypsum liner panel. When spray-applied fire resistive material (Item 1C) is applied to the steel deck, the fill material is to overlap the spray-applied fire resistive material a min of 2 in. (51 mm) on both sides of wall.

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

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

