



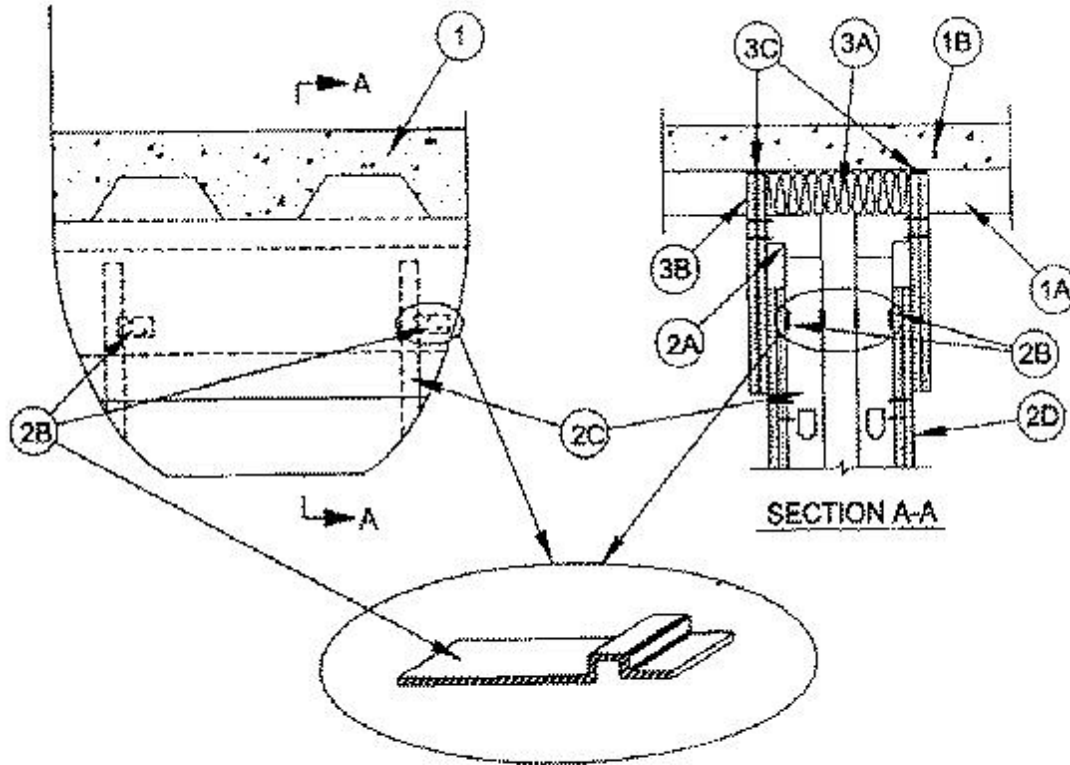
### System No. HW-D-1012

March 09, 2011

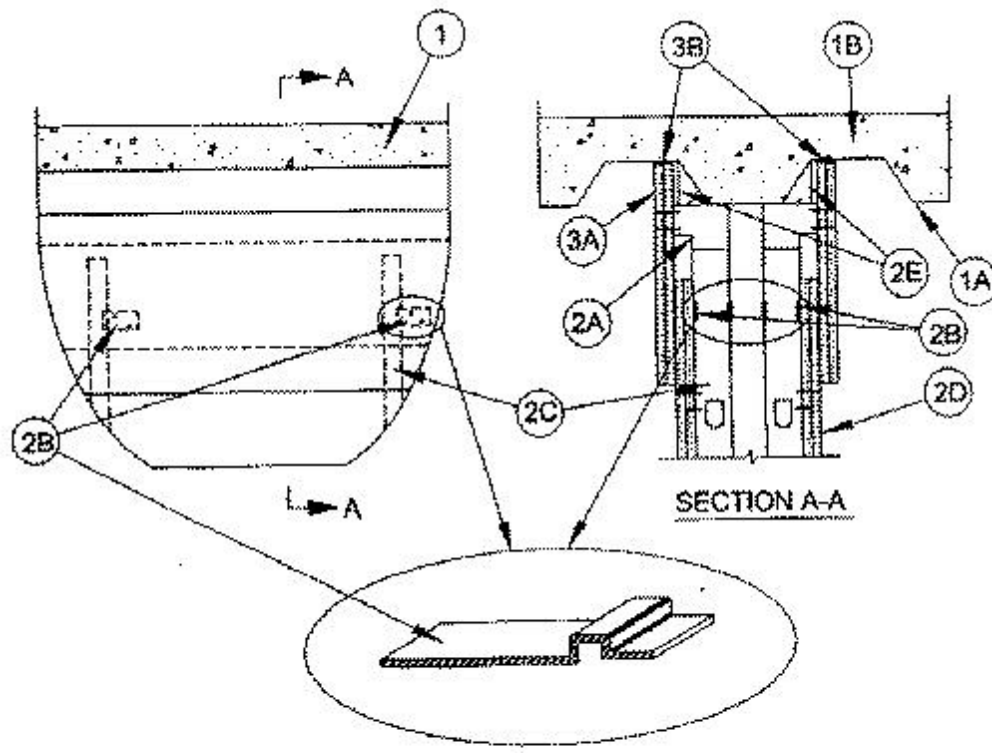
Assembly Ratings — 1, 2 and 3 Hr (See Item 2)

Nominal Joint Width — 3 in.

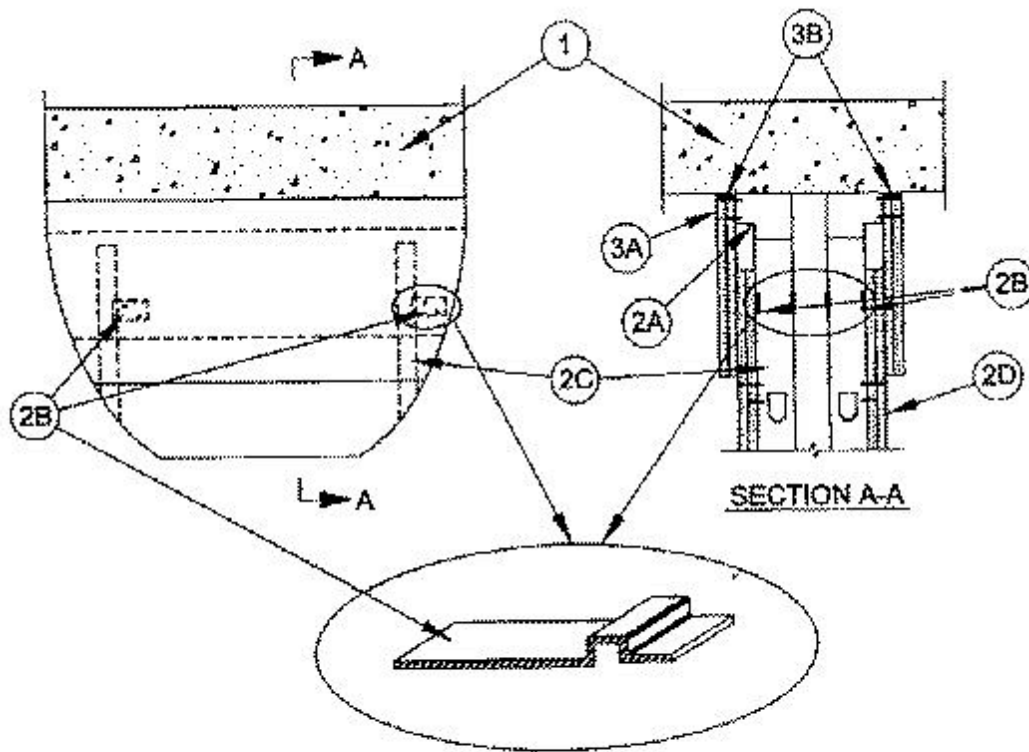
Class II and III Movement Capabilities — 100% Compression or Extension



## 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 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<sup>3</sup>) 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 P700, P800 or 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. In the case of spray-applied protection materials on the steel roof units, the joint system shall be installed prior to the spray-applied protection material.

1B. **Floor Assembly** — As an alternate to Item 1, min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m<sup>3</sup>) structural concrete.

2. **Wall Assembly** — The 1, 2 or 3 hr fire-rated gypsum board /steel stud wall assembly shall be constructed of the materials and in the manner described in the individual U400 and V400-Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:

A. **Light Gauge Framing\* - Deflection Trak** — Deflection trak of wall assembly shall consist of min No. 25 gauge galv steel channels sized to accommodate steel studs (Item 2C) and with offset legs to accommodate wall cladding (Item 3A). Deflection trak installed parallel or perpendicular to the floor units. When installed perpendicular (Configuration A), min No. 25 gauge deflection trak secured on both sides to valley of floor units with 1-1/2 in. (38 mm) long welds spaced max 12 in. (305 mm) OC. Min No. 20 gauge deflection trak may be secured with No. 8 by 1/2 in. (13 mm) long steel tec screws spaced 12 in. (305 mm) OC. When installed parallel (Configuration B), min No. 25 gauge deflection trak secured on one side to valley of floor units with 1-1/2 in. (38 mm) long welds spaced 12 in. (305 mm) OC. Min No. 25 gauge deflection trak may be secured with No. 8 by 1/2 in. (13 mm) steel tec screws spaced max 12 in. (305 mm) OC. The other side of the deflection trak is secured to Z-Furring clips (Item 2B) with two No. 8 by 1/2 in. (13 mm) long tec screws. On concrete floor (Configuration C), min No. 20 gauge deflection trak attached to concrete at ceiling with 1/4 in. (6 mm) diam by 1-1/4 in. (32 mm) long steel expansion anchor spaced max 12 in. OC.

**FIRE TRAK CORP** — Shadowline, Cavity Shadowline

B. **Light Gauge Framing\*** — Clips are attached to the inside bottom leg of the ceiling runner (Item 2A) with 2 - No. 8 by 1/2 in. (13 mm) long steel-drilling framing screws and engage the short flange of the studs.

**FIRE TRAK CORP** — Slip Clips

**TOTAL STEEL SOLUTIONS L L C** — Redi Klips

C. **Studs** — Steel studs to be min 2-1/2 in. (64 mm) wide and as specified in the individual Wall and Partition Design in the UL Fire Resistance Directory. Studs cut 4 in. (102 mm) less in length than the assembly height with bottom nesting in and resting on floor runner and with top nesting in ceiling runner without attachment. Stud spacing not to exceed 24 in. (610 mm) OC.

D **Gypsum Board\*** — Gypsum board sheets installed and attached to studs and runners as specified in the individual Wall and Partition Design in the UL Fire Resistance Directory, except that a nominal 3-1/2 in. (89 mm) gap shall be maintained between top of the gypsum board and the bottom flange of the deflection trak. Top row of screws shall be installed into the studs 13-1/2 in. (343 mm) below the top edge of the gypsum board sheets.

E. **Z-Furring - (Parallel Units)** — When trak in installed parallel to floor units, Z-Furring clips are attached to the bottom of the floor units within the crests and top of the deflection trak with two No. 8 by 1/2 in. (13 mm) long tec screws or steel fasteners. Clip spacing not to exceed 24 in. (610 mm) OC.

**FIRE TRAK CORP** — Z-Furring Clips

F. **Bracing** — (Not Shown) - Bracing as specified in the individual Wall and Partition Design in the UL Fire Resistance Directory.

**The hourly assembly rating of the joint system is equal to the fire rating of the wall.**

#### **Firestop Configuration A**

**3. Joint System — Max separation between bottom flange of the deflection trak 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 100 percent compression or extension from its installed width.** The joint system consists of packing material (Item 3A), wall cladding (Item 3B) and a fill material (Item 3C) as follows:

A. **Packing Material** — Min 4 pcf (64 kg/m<sup>3</sup>) density mineral wool batt insulation cut to the shape of the fluted deck, 25 percent larger than the area of the flutes and compressed into the flutes of the steel floor units above the ceiling runner as a permanent form.

B. **Wall Cladding** — Strips of the gypsum board material cut to the contour of the steel floor units and attached to the deflection trak. The number of layers, board type and thickness and fastener type shall be as specified for the gypsum board in the individual Wall and Partition Design in the UL Fire Resistance Directory. Fasteners shall be max spaced 3 in. (76 mm) OC. The top of the wall cladding shall be recessed min 1/8 in. (3.2 mm) to max 1/2 in. (13 mm) from the steel floor units and overlap the gypsum board 7 in. (178 mm).

C. **Fill, Void or Cavity Material\*** — Full depth of fill material installed on each side of the wall between the top of the wall cladding and the surface of the steel floor units, flush with each surface of the cladding.

**A/D FIRE PROTECTION SYSTEMS INC** — A/D FireBarrier Seal N/S, A/D FireBarrier Silicone

**DAP PRODUCTS INC** — DAP Firestop Sealant

**EGS NELSON FIRESTOP** — ES 1399 Sealant

**HILTI CONSTRUCTION CHEMICALS, DIV OF**

**HILTI INC** — CP601S, CP606 , FS611A, FS-ONE Sealant

**JOHNS MANVILLE INTERNATIONAL INC** — Firetemp CI

**3M COMPANY** — FB 1000NS, FB 2000, FB 2000+, FD-150+, CP 25 WB+

**NATIONAL GYPSUM CO** — FS-90

**NUCO INC** — Self Seal GG-200

**PASSIVE FIRE PROTECTION PARTNERS** — 4100NS, 4800DW

**RECTORSEAL** — Metacaulk 835+, Metacaulk 1000, Biostop 500+Caulk, Biotherm 100, FS1900, FS4000

**SPECIFIED TECHNOLOGIES INC** — SpecSeal ES Sealant

**TREMCO INC** — TREMstop Acrylic

**UNITED STATES GYPSUM CO** — FC, RFC

### **Firestop Configuration B**

**3. Joint System — Max separation between bottom flange of the deflection trak 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 100 percent compression or extension from its installed width.** The joint system consists of packing material (Item 3A), wall cladding (Item 3B) and a fill material (Item 3C) as follows:

**A. Wall Cladding** — Strips of the gypsum board material attached to the deflection trak. The number of layers, board type and thickness and fastener type shall be as specified for the gypsum board in the individual Wall and Partition Design in the UL Fire Resistance Directory. Fasteners shall be max spaced 3 in. (76 mm) OC. The top of the wall cladding shall be recessed min 1/8 in. (3.2 mm) to max 1/2 in. (13 mm) from the steel floor units and overlap the gypsum board 7 in. (178 mm).

**B. Fill, Void or Cavity Material\*** — Full depth of fill material installed on each side of the wall between the top of the wall cladding and the surface of the steel floor units, flush with each surface of the cladding.

**A/D FIRE PROTECTION SYSTEMS INC** — A/D FireBarrier Seal N/S, A/D FireBarrier Silicone

**DAP PRODUCTS INC** — DAP Firestop Sealant

**EGS NELSON FIRESTOP** — ES 1399 Sealant

**HILTI CONSTRUCTION CHEMICALS, DIV OF**

**HILTI INC** — CP601S, CP606 , FS611A, FS-ONE Sealant

**JOHNS MANVILLE INTERNATIONAL INC** — Firetemp CI

**3M COMPANY** — FB 1000NS, FB 2000, FB 2000+, FD-150+, CP 25 WB+

**NATIONAL GYPSUM CO** — FS-90

**NUCO INC** — Self Seal GG-200

**PASSIVE FIRE PROTECTION PARTNERS** — 4100NS, 4800DW

**RECTORSEAL** — Metacaulk 835+, Metacaulk 1000, Biostop 500+Caulk, Biotherm 100, FS1900, FS4000

**SPECIFIED TECHNOLOGIES INC** — SpecSeal ES Sealant

**TREMCO INC** — TREMstop Acrylic

**UNITED STATES GYPSUM CO** — FC, RFC

### **Firestop Configuration C**

**3. Joint System — Max separation between bottom flange of the deflection trak 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 100 percent compression or extension from its installed width.** The joint system consists of packing material (Item 3A), wall cladding (Item 3B) and a fill material (Item 3C) as follows:

**A. Wall Cladding** — Strips of the gypsum board material attached to the deflection trak. The number of layers, board type and thickness and fastener type shall be as specified for the gypsum board in the individual Wall and Partition Design in the UL Fire Resistance Directory. Fasteners shall be max spaced 3 in. (76 mm) OC. The top of the wall cladding shall be recessed min 1/8 in. (3.2 mm) to max 1/2 in. (13 mm) from the bottom of the concrete floor and overlap the gypsum board 7 in. (178 mm).

**B. Fill, Void or Cavity Material\*** — Full depth of fill material installed on each side of the wall between the top of the wall cladding and the surface of the steel floor units, flush with each surface of the cladding.

**A/D FIRE PROTECTION SYSTEMS INC** — A/D FireBarrier Seal N/S, A/D FireBarrier Silicone

**DAP PRODUCTS INC** — DAP Firestop Sealant

**EGS NELSON FIRESTOP** — ES 1399 Sealant

**HILTI CONSTRUCTION CHEMICALS, DIV OF**

**HILTI INC** — CP601S, CP606 , FS611A, FS-ONE Sealant

**JOHNS MANVILLE INTERNATIONAL INC** — Firetemp CI

**3M COMPANY** — FB 1000NS, FB 2000, FB 2000+, FD-150+, CP 25 WB+

**NATIONAL GYPSUM CO** — FS-90

**NUCO INC** — Self Seal GG-200

**PASSIVE FIRE PROTECTION PARTNERS** — 4100NS, 4800DW

**RECTORSEAL** — Metacaulk 835+, Metacaulk 1000, Biostop 500+Caulk, Biotherm 100, FS1900, FS4000

**SPECIFIED TECHNOLOGIES INC** — SpecSeal ES Sealant

**TREMCO INC** — TREMstop Acrylic

**UNITED STATES GYPSUM CO** — FC, RFC

\*Bearing the UL Classification Mark