



### System No. HW-D-0331

September 04, 2015

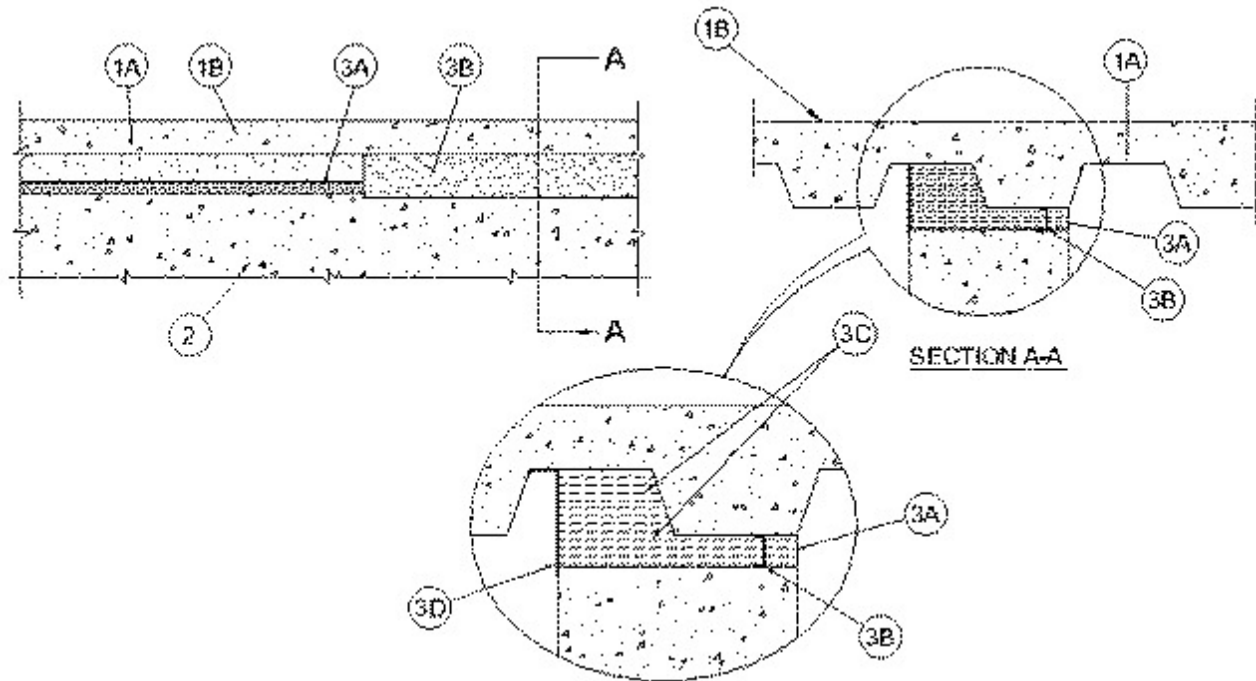
**Assembly Rating — 3 Hr**

**Nominal Joint Width — 2 In.**

**Class II Movement Capabilities — 12.5% 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 deck/concrete floor assembly shall be constructed of the materials and in the manner described in the individual D900 Floor-Ceiling Design in the UL 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 of 1600-2400 kg/m<sup>3</sup>) concrete, as measured from the top plane of the floor units.
- C. Spray-Applied Fire Resistive Material\* (Optional, Not Shown)** — Prior to the installation of the Forming Material and Fill, Void or Cavity Materials (Items 3A through 3D), all surfaces of the steel floor units to be sprayed with the thickness of material specified in the individual D700 Series Design.

**W R GRACE & CO - CONN** — Types MK-6/HY, MK-6/HY ES, RG and MK-6S

**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 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 2 in. (51 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 floor units.

**C. Spray-Applied Fire Resistive Materials\* (Not Shown, Optional)** — Prior to the installation of Forming Material and Fill, Void or Cavity Material (Items 3A through 3D), the roof assembly shall be sprayed with the type and thickness of fire resistive material indicated in the individual P700 Series design.

**W R GRACE & CO - CONN** — Types MK-6/HY, MK-6/HY ES, RG and MK-6S

**2. Wall Assembly** — Min 8 in. (203 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m<sup>3</sup>) structural concrete. Wall shall be installed parallel with the flutes of the steel floor and roof deck units (Item 1A). Wall may also be constructed of any UL Classified 3 hr fire rated **Concrete Blocks\***. When wall is constructed of concrete blocks, the top course of block shall be filled with concrete, grout or mortar.

**See Concrete Blocks** (CAZT) category in the Fire Resistance Directory for names of manufactures.

**3. Joint System** — **Max separation between bottom of steel floor units, roof deck or spray-applied fire resistive material (if used) and top of the wall at time of installation of joint system is 2 in. (51 mm). The joint system is designed to accommodate a max 12.5 percent compression or extension from its installed width.** The joint system consists of the following:

**A. Forming Material\*** — Min 4 pcf (64 kg/m<sup>3</sup>) mineral wool batt insulation cut into strips min 2 in. (51 mm) wide compressed 50 percent in thickness and inserted into the gap between the top of the wall and the bottom of the steel floor units, roof deck or sprayed-applied fire resistive material (if used) flush with one surface of the wall.

**IIG MINWOOL L L C** — MinWool-1200 Safing

**ROCK WOOL MANUFACTURING CO** — Delta Safing Board

**ROCKWOOL MALAYSIA SDN BHD** — SAFE

**ROXUL INC** — SAFE

**THERMAFIBER INC** — SAF

**B. Fill, Void or Cavity Material\*** — Min 1/8 in. (3.2 mm) wet thickness or 1/16 in. (1.6 mm) dry thickness of fill material sprayed or troweled into joint to completely cover mineral wool forming material and to overlap a min of 1/2 in. (13 mm) onto wall and steel deck, roof deck or sprayed-applied fire resistive material (if used) within joint cavity.

**RECTORSEAL** — FlameSafe FS3000, Metacaulk 1200, 1500 or Biostop 750, 800 Spray

**C. Forming Material** — Min 4 pcf (64 kg/m<sup>3</sup>) mineral wool batt insulation cut into strips min 6 in. wide, compressed 50 percent in thickness and inserted into the gap between the top of the wall and the bottom of the steel floor units, roof deck or sprayed-applied fire resistive material (if used) butting edge of the installed forming material Item 3A. When the void beneath the steel floor unit or roof deck is located entirely above the wall, the void shall be completely filled with mineral wool insulation compressed 50 percent in thickness. When void beneath the steel deck is located in part above the wall, that portion of the void above the wall shall be packed with additional strips of mineral wool batt insulation compressed 50 percent in thickness flush with the surface of the wall.

**IIG MINWOOL L L C** — MinWool-1200 Safing

**ROCK WOOL MANUFACTURING CO** — Delta Safing Board

**ROCKWOOL MALAYSIA SDN BHD** — SAFE

**ROXUL INC** — SAFE

**THERMAFIBER INC** — SAF

**D. Fill, Void or Cavity Material\*** — Min 1/8 in. (3.2 mm) thickness or 1/16 in. (1.6 mm) dry wet thickness of fill material sprayed or troweled to completely cover mineral wool forming material and to overlap a min of 1/2 in. (13 mm) onto wall and steel floor unit, roof deck or sprayed-applied fire resistive material (if used) on accessible side of the wall.

**RECTORSEAL** — FlameSafe FS3000, Metacaulk 1200, 1500 or Biostop 750, 800 Spray

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