

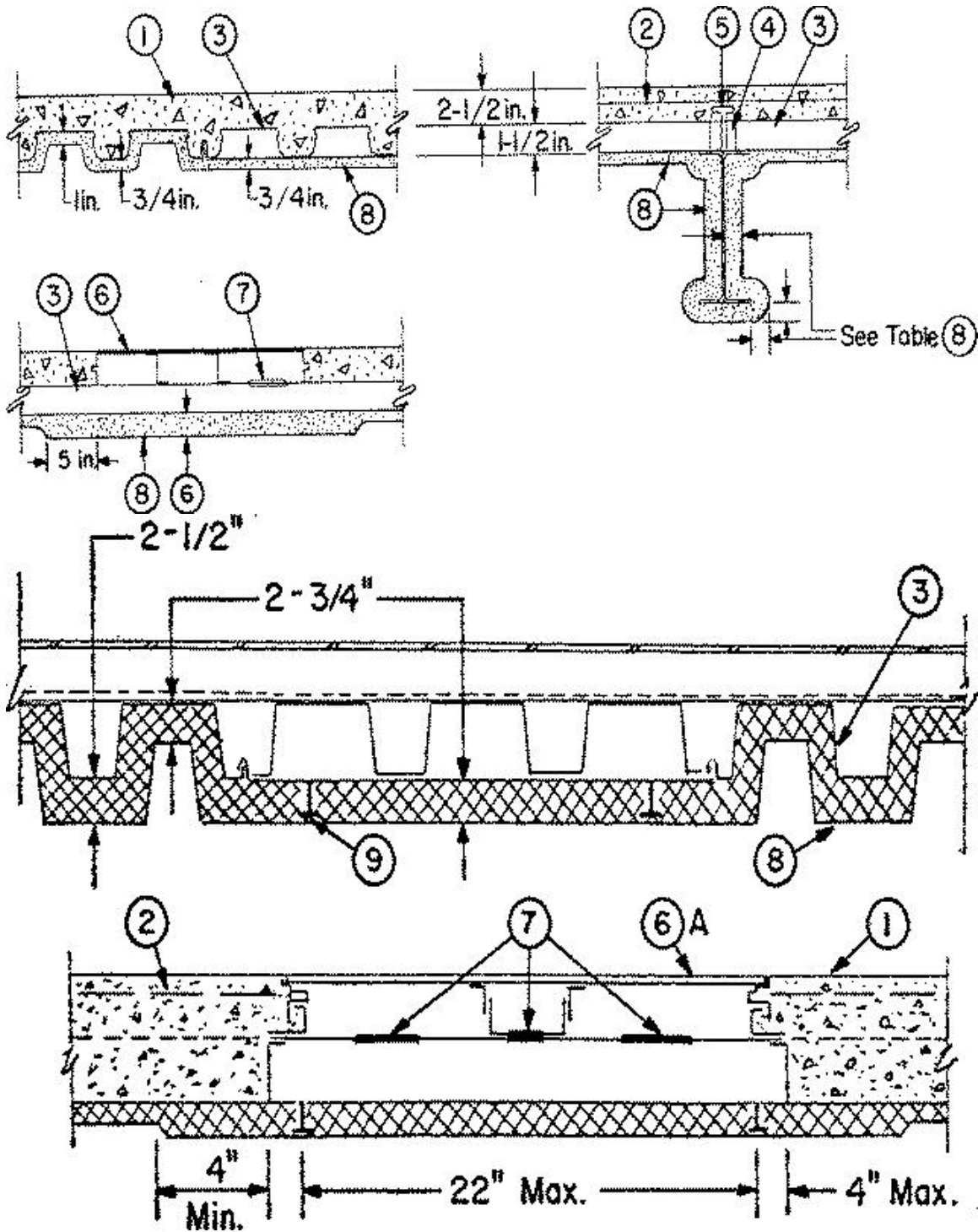
Design No. D708

June 14, 2002

Restrained Assembly Rating — 3 Hr.

Unrestrained Assembly Ratings — 1-1/2 and 3 Hr.

Unrestrained Beam Ratings — 1-1/2 and 3 Hr.



Beam — W10X17, min size.

1. **Normal Weight or Lightweight Concrete** — Normal weight, carbonate or siliceous aggregate, 148 + or - 3 pcf unit weight, 4000 psi compressive strength, vibrated. Lightweight concrete, expanded shale or slate aggregate by rotary-kiln method or expanded clay aggregate by rotary-kiln or sintered-grate method, 112 + or - 3 pcf unit weight 3000 psi compressive strength vibrated, 4 to 7 percent entrained air.

2. **Welded Wire Fabric** — 6X6 — W2.9XW2.9, 42 in. wide centered over beam.

3. **Steel Floor and Form Units*** — Composite. 1-1/2, 2, or 3 in. deep, 24, 30, or 36 in. wide, galv units. Min. gauges are 22 MSG for fluted, 20/20 MSG for cellular. Adjacent units button-punched or welded together 36 in. O.C. at side joints.

The following combinations of units may be used:

1. All fluted for 2 or 3 in. deep units only.

2. Blend of one or two fluted to one cellular.

CONSOLIDATED SYSTEMS INC — 24 or 36 in. wide Types CFD-1.5, CFD-2, CFD-3. Units may be phos/ptd.

4. **Joint Cover** — 2 in. wide, pressure-sensitive cloth tape.

5. **Shear Connector** — (Optional) Studs, 3/4 in. diam by 3 in. long, headed type or equivalent per AISC specifications. Welded to the top flange of beam through the deck.

6. **Trench Header** — (Bearing the UL Listing Mark). Constructed of steel with metal edge screeds. When the trench header is located near the supports the load carrying capacity of the span may be based on the allowable moment or shear stress of the form units at the edge of the trench away from the support, or on the allowable composite moment or shear capacity of the slab at the center of the span, whichever governs. The Spray-Applied Fire Resistive Materials thickness on floor units below this trench header shall be 1 in. below the bottom plane of units, with the flutes completely filled except for 2 in. and 3 in. deep floor units, where thickness in flutes shall be 1 1/8 in.

6A. **Trench Header** — Trench header (bearing the UL Listing Mark), without the bottom pan. The allowable superimposed load for spans with bottomless trench shall be based on noncomposite design. This trench header, with width ranging from min 12 in. to max 36 in., consists of two cell closers which conform to the contour of the floor units, placed along the sides of the desired trench location and welded to the floor units. The side rails, consisting of extruded aluminum screeds secured to galv steel channels (min 18 MSG) are positioned over the cell closers, aligned and welded to the closers and floor units. A separate U shaped channel (min 18 ga) serving as the power compartment, is welded to the floor units. Steel cover plates, 1/4 in. thick, shall be secured to the side rails. In bottomless trench headers wider than 18 in., each side joint of the steel floor units shall be welded with a 1 in. long weld near the trench header centerline. The use of this trench requires additional protection underneath the trench. Fireproofing thickness shall be increased to 2-1/4 in. in the crest, 2-1/8 in. on valleys and flat plates. These thicknesses shall extend a min of 4 in. beyond the edge of the trench header.

7. **Access Openings** — As required, with grommets.

8. **Spray-Applied Fire Resistive Materials*** — Spray applied by mixing with water in more than one coat, to a final thickness as shown below, to steel surfaces which must be clean and free of dirt, loose scale and oil. Min avg and min ind density of 15/14 pcf respectively. For method of density determination, refer to Design Information Section. Types 4, 5GP, 8GP, 9GP, MK-4 may be used only in general floor areas without concrete penetrations with all fluted steel floor units or blends consisting of one or more fluted units to one 24 in. wide max cellular unit, 1-1/2 or 3 in. deep, with cells spaced approx 6 and 8 in. respectively.

Use of a spatter coat Types DK, SK-1 or SK-III is required on all cellular units with flat plate on the bottom, optional on other steel surfaces. Thickness of spatter coat is included in the total final thickness of the protection material.

Restrained Assembly Rating Hr	Unrestrained Assembly Rating Hr	Unrestrained Beam Rating Hr	Beam Min Thk In.
—	3	3	1-5/8
3	1-1/2	1-1/2	7/8

ARABIAN VERMICULITE INDUSTRIES — Type MK-5.

GRACE CANADA INC — Type MK-5 and Type SK-1.

W R GRACE & CO - CONN CONSTRUCTION PRODUCTS DIV — Types MK-4, MK-5, RG, MK-6/HY, MK-6s, SK-III, Monokote Acoustic 1.

GRACE KOREA INC — Types MK-6/CBF, MK-6/ED, MK-6/HY, MK-6s, SK-III, Monokote Acoustic 1.

PYROK INC — Type LD.

SOUTHWEST VERMICULITE CO — Types 4, 5, 5EF, 5GP, 5MD, 8EF, 8GP, 8MD, 9EF, 9GP, 9MD, DK.

VERMICULITE PRODUCTS INC — Types MK-5, SK-1, VP5.

9. **Steel Studs with Discs** — The studs consist of a No. 12 SWG galv wire, 2-1/8 in. long attached to a 1-3/16 in. diam, No. 28 MSG (0.020 in. thick) galv steel disc. The total number of studs shall average at least one stud per 236 sq in. of cellular floor units beneath the trench header. The studs shall be welded to the cellular floor units in rows running parallel with the trench header. The distance between the rows and the edge of the trench header shall not exceed 4 in. The spacing between the rows shall not exceed 22 in. The spacing between studs along the rows shall not exceed 24 in.

10. **Roof Covering*** — (Not Shown) — Applied to concrete surface. Used only with Items 11 or 11 and 12. Class A, B or C **Built Up Roof Covering Materials** consisting only of felt and asphalt (or coal tar pitch) materials in alternate layers. See Building Materials Directory.

11. **Foamed Plastic*** — (Not Shown) — Optional — Rigid foamed plastic insulation boards. May be installed without adhesion after final asphalt glaze coat has cooled or bonded to the built-up covering. When applying more than one layer, successive layers shall be installed over preceding layer without attachment.

OC CELFORTEC INC — Max thickness 8 in. covered with crushed stone or concrete pavers at a rate of 10 psf min.

OWENS CORNING SPECIALTY & FOAM PRODUCTS — Max thickness 8 in. Foamed Plastic boards shall be covered with crushed stone or concrete pavers at a rate of 10 psf, min.

SIPLAST INC — Nom 24 by 48 by max 8 in. thick polystyrene foamed plastic insulation boards with holes and slots. The Foamed Plastic boards shall be covered with Vermiculite Concrete (Item 12) or Cellular Concrete (Item 13).

T CLEAR CORP — 4-3/8 in. thick, concrete mortar faced extruded polystyrene Lightguard Boards.

THE DOW CHEMICAL CO — Max thickness 8 in., extruded polystyrene foamed plastic boards. The unfaced boards shall be covered with crushed stone or concrete pavers, at a rate of 10 psf, min.

VERMICULITE PRODUCTS INC — Nom 24 by 48 by max 8 in. thick polystyrene foamed plastic insulation boards with holes and slots. The Foamed Plastic boards shall be covered with Vermiculite Concrete (Item 12) or Cellular Concrete (Item 13).

12. Vermiculite Concrete — (Not Shown)Optional.

A. Blend 6 to 8 cu. ft. of Vermiculine Aggregate* to 94 lb. Portland Cement and air entraining agent. Min thickness of 2 in. as measured to the top surface of the structural concrete or foamed plastic (Item 11) when it is used.

ELASTIZELL CORP OF AMERICA — Types MS 16-U, MSV200.

SIPLAST INC

VERMICULITE PRODUCTS INC

B. Blend 3.5 cu. ft. of Type NVC Concrete Aggregate* or Type NVS Vermiculite Aggregate* to 94 lb Portland Cement. Slurry coat 1/8 in. thickness beneath foamed plastic (Item 11) when used, 1 in. min topping thickness.

SIPLAST INC

VERMICULITE PRODUCTS INC

Top of vermiculite concrete may or may not be covered with built-up or single membrane roof covering and crushed stone or concrete pavers.

C. Perlite Concrete Mix consists of 6.2 cu ft Perlite Aggregate* to 94 lbs of Portland cement and 1-1/2 pt air entraining agent. Compressive strength 80 psi min.

See Perlite Aggregate (CFFX) category for names of Classified companies.

13. Cellular Concrete — (Not Shown)Optional, Roof Topping Mixture* — Concentrate mixed with water and Portland Cement per Manufacturer's Specifications. Cast dry density and 28-day min compressive strength of 190 psi as determined per ASTM C495. A 1/8 in. min slurry coat shall be employed below Foamed Plastic (Item 11), when used. The Cellular Concrete topping thickness above the foamed plastic shall be 2 in. min.

CELLULAR CONCRETE L L C — Cast dry density of 37 (+ or -) 3.0 pcf.

ELASTIZELL CORP OF AMERICA — Type II. Mix #1 of cast dry density 39 (+ or -) 3.0 pcf, Mix #2 of cast dry density 40 (+ or -) 3.0 pcf, Mix #3 of cast dry density 47 (+ or -) 3.0 pcf.

LITE-CRETE INC — Cast dry density 29 (+ or -) 3.0 pcf.

SIPLAST INC — Mix #1. Cast Dry Density of 32 + or - 3 pcf.

SIPLAST INC — Mix #2. Cast Dry Density of 36 + or - 3 pcf.

Top of Cellular Concrete may or may not be covered with Built-up or Single Membrane Roof Covering.

14. Floor Topping Mixture* (Optional, not shown) — Approx 4.5 gal of water to 41 lbs of NVS Premix floor topping mixture. Slurry coat 1/8 in. thickness beneath foamed plastic (Item 11) when used, 1 in. min topping thickness.

SIPLAST INC

Top of Floor Topping Mixture may or may not be covered with Built-Up or Single Membrane Roof Covering.

*Bearing the UL Classification Mark

Reprinted from the Online Certifications Directory with permission from Underwriters Laboratories Inc.

Copyright © 2005 Underwriters Laboratories Inc.®