

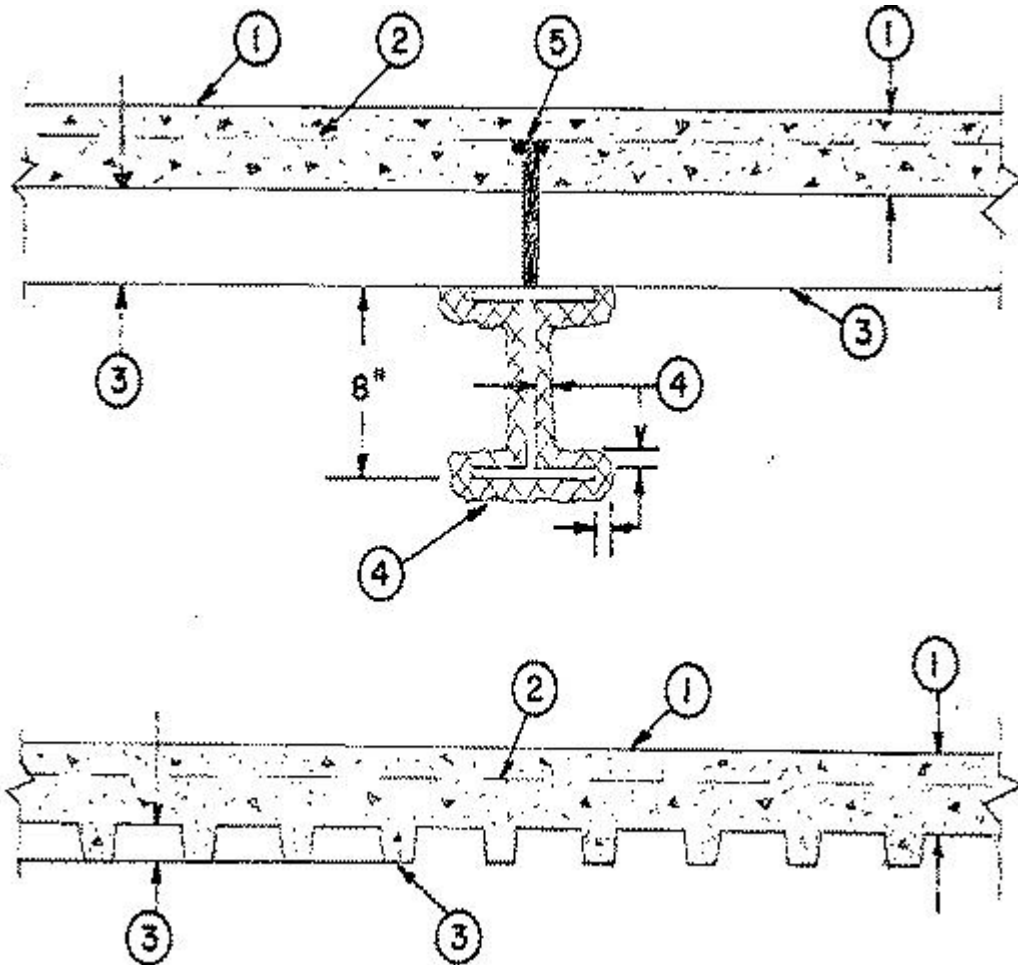
Design No. D919

April 25, 2002

Restrained Assembly Ratings — 1, 1-1/2, 2 and 3 Hr (See Items 1 and 4)

Unrestrained Assembly Rating — 0 Hr (See Item 3)

Unrestrained Beam Rating — 1 and 1-1/2 Hr (See Item 4)



Beam — W8X28, min size.

1. **Normal Weight or Lightweight Concrete** — Normal weight concrete carbonate or siliceous aggregate, 3500 psi compressive strength, vibrated. Lightweight concrete, expanded shale, clay or slate aggregate by rotary kiln method, 3000 psi compressive strength, vibrated, 4 to 7 percent entrained air.

Restrained Assembly Rating Hr	Concrete (Type)	Concrete Unit Weight pcf	Concrete Thkns In.
1	Normal Weight	147-153	3-1/2
1-1/2	Normal Weight	147-153	4
2	Normal Weight	147-153	4-1/2
3	Normal Weight	147-153	5-1/4

1	Lightweight	107-113	2-1/2
1-1/2	Lightweight	107-113	3
2	Lightweight	107-116	3-1/4
2	Lightweight	114-120	3-1/2
3	Lightweight	107-113	4-3/16
3	Lightweight	114-120	4-7/16

2. Welded Wire Fabric — 6 x 6 - W1.4 x W1.4.

3. Steel Floor and Form Units* — Composite 1-1/2, 2 or 3 in. deep galv units. Min gauges are 22 MSG for fluted and 20/20 MSG for cellular. Fluted units may be phos/ptd. The following combinations of units may be used:

- (1) All fluted.
- (2) A blend of one or more fluted units to one 24 in. wide cellular unit.

CONSOLIDATED SYSTEMS INC — 24 or 36 in. wide types CFD-2 or CFD-3; 24, 30 or 36 in. wide Type CFD-1.5. Units may be phos/ptd.

Spacing of welds attaching units to supports shall be 12 in. OC for 24 and 36 in. wide units, four welds per sheet for 30 in. wide units. Adjacent units button-punched or welded together 36 in. OC along side joints.

The Unrestrained Assembly Rating is 1-1/2 Hr. — for the following units and limitations:

- (a) 1-1/2 in. deep, 24 in. wide, 22 MSG or thicker fluted with clear spans not more than 7 ft 8 in.
- (b) 1-1/2 in. deep, 24 in. wide, 20 MSG or thicker fluted with clear spans not more than 8 ft 8 in.
- (c) 1-1/2 in. deep, 24 in. wide, 16 MSG or thicker fluted and 18/18 MSG or thicker cellular with clear spans not more than 9 ft 11 in.
- (d) 3 in. deep, 36 in. wide, 18 MSG or thicker fluted and 24 in. wide, 20/18 MSG or thicker cellular with clear spans not more than 13 ft 2 in.

4. Spray-Applied Fire Resistive Materials* — Spray applied in one coat to a final tamped or untamped thickness as shown in table below, to steel surface which must be clean and free of dirt, oil and loose scale. Use of adhesive and tamping is optional. Min avg density of 13 pcf with min ind density of 11 pcf for Types DC/F and II. Min avg density of 22 pcf with min ind density of 19 pcf for Type HP. For method of density determination refer to Design Information Section.

Unrestrained Beam Rating Hr	Restrained Assembly Rating Hr	Concrete Type	Min Thkns of Spray Applied Fire Resistive Mtl on Beam In.	
			Fluted Deck Only	Blend or Cellular Unit
1	1,1-1/2,2	NW	3/8,1/2*	3/8,1/2*
1	1,1-1/2,2	LW	3/8,1/2*	7/16,9/16*
1-1/2	3	NW	1/2	1/2
1-1/2	3	LW	5/8	11/16

* — Thickness applies when optional items 6 or 7 are used over 3-1/4 in. lightweight concrete topping.

ISOLATEK INTERNATIONAL — Types DC/F, II or HP. Type EBS or Type X adhesive/sealer is optional.

5. **Shear-Connector Studs** — (Optional) — Studs, 3/4 in. diam by 3 in. long, for 1-1/2 in. deep form units to 5-1/4 in. long for 3 in. deep form units, headed type or equivalent per AISC specifications. Welded to the top flange of the beam through the steel form units.

6. **Mineral and Fiberboards*** — (Optional, not shown). For use with the 3-1/4 in. lightweight concrete topping only — Applied over concrete floor with no restriction on thickness. See **Mineral and Fiber Board** (CERZ) category for names of manufacturers.

7. **Foamed Plastic*** — (Optional, not shown. For use with the 3-1/4 in. lightweight concrete topping only). — Consisting of polyisocyanurate, urethane or phenolic roof insulations. Applied over concrete floor with no restrictions on thickness. See **Foamed Plastic** (CCVW) for list of manufacturers.

8. **Cellular Concrete — 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 in accordance with ASTM C495-86.

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 density 29 (+ or -) 3.0 pcf.

9. **Insulated Concrete** — (Optional not shown) various types of insulated concrete prepared and applied in the thickness indicated.

A. **Vermiculite Concrete** — Mix consists of 6 cu ft of Vermiculite Aggregate*, 94 lbs of Portland cement and 6 oz of air entraining agent. Thickness to be 2 in. min from the top plane of steel roof deck.

ELASTIZELL CORP OF AMERICA — Types MS 16-U, MSV 200.

B. 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.

*Bearing the UL Classification Mark

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