

Design No. D840

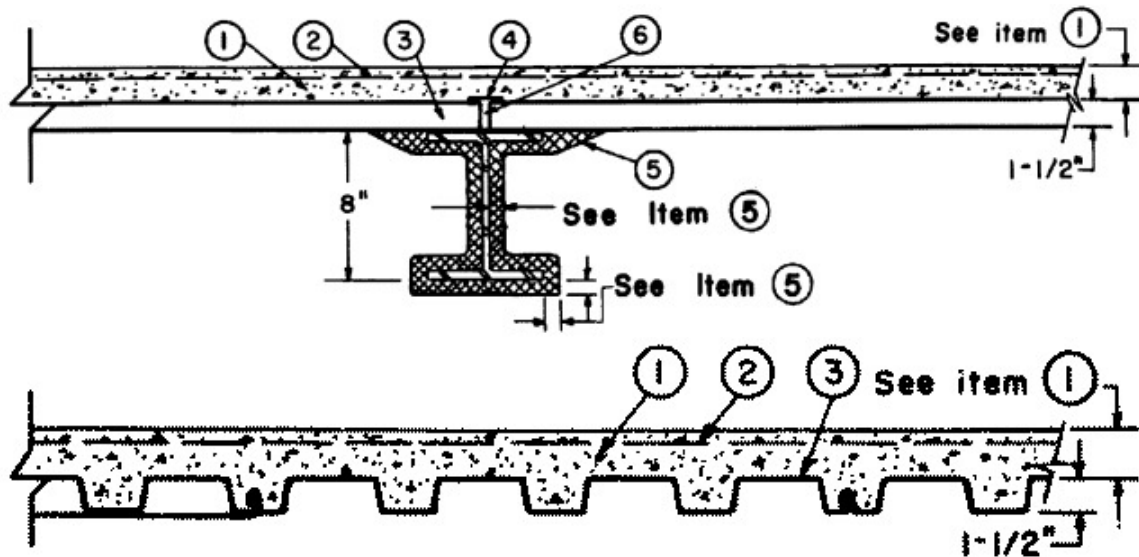
April 25, 2002

Restrained Assembly Rating — 2 Hr.

Unrestrained Assembly Rating — 0 Hr.

(See Item 3)

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



Beam — W8{x}28, min size.

1. **Lightweight Concrete** — Expanded shale or slate aggregate by rotary-kiln method or expanded clay aggregate by rotary-kiln or expanded clay, shale or fly ash aggregate by the sintered-grate method, 3000-psi compressive strength, vibrated, 4 to 7 percent entrained air. Concrete unit weights as follows:

Concrete Unit Weight pcf	Steel Floor & Form Unit	Concrete Thkns In.
107-113	All depths	3-1/4
107-120	All depths	3-1/2
107-116	2 and 3 in. deep only	3-1/4

2. **Welded Wire Fabric** — 6{x}6 — 10/10 SWG.

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

(1) All 24 or 36 in. wide cellular or partial cellular.

(2) All fluted.

(3) One or two 3 in. deep, 12 in. wide, 18/18 MSG min cellular alternating with 3 in. deep fluted or other cellular.

(4) Any blend of fluted and 24 or 36 in. wide cellular or partial cellular.

(5) 3 in. deep, 12 in. wide single flute may be blended with 24 in. wide fluted or cellular when the 12 in. wide single flute units are protected with 3/8 in. thickness of Spray-Applied Fire Resistive Materials as shown on sketch.

(6) 3 in. deep, 30 in. wide cellular with 8-1/8 in. wide valley along side joints may be used when 8/8 in. diam reinforcing bars are placed 1-1/2 in. to each side of side joints and 1 in. above bottom of unit.

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

Spacing of welds attaching units to supports shall be at each edge and not to exceed 16 in. OC between edges. Unless specified otherwise for specific unit types, adjacent units button-punched or welded together 36 in. OC at side joints.

When a superimposed load of 250 PSF is desired the spacing of welds or button-punches shall not exceed 24 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 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.

Alternate Construction — Noncomposite units of the same type listed above may be used provided allowable loading is calculated on the basis of noncomposite design.

4. **Joint Cover** — (Use with fluted units optional) 2 in. wide cloth adhesive tape applied following the contour of the steel form units.

5. **Spray-Applied Fire Resistive Materials*** — Applied by spraying with water in one coat after surface has been wetted with water, to a final untamped thickness as shown above and in table below to steel surfaces which are free of dirt, oil or scale. The material shall be sprayed to the floor a min of 2 in. beyond the beam's top flange at a thickness of 3/4 in. for 1-1/2 hr Unrestrained Beam Rating. Material to follow contours of beam for 2 hr Restrained Assembly and 1 hr Unrestrained Beam Ratings. Use of adhesive is optional. Tamping is optional. Min avg untamped density is 13 pcf with min ind untamped density of 11 pcf for Types II, or DC/F. Min avg and min ind densities of 22 and 19 pcf, respectively, for Type HP. For method of density determination, refer to Design Information Section.

Min Thkns In. (Beam)	Restrained Assembly Rating Hr	Unrestrained Beam Rating Hr
1/2	2	1
3/4	2	1-1/2

ISOLATEK INTERNATIONAL — Type D-C/F, HP or II, Type EBS or Type X adhesive which may also be used as a surface sealer.

6. **Shear-Connector Studs — Optional** — (Not shown) — 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 beam through the steel form units.

*Bearing the UL Classification Mark

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