

Restrained Assembly Ratings — 1, 1-1/2 and 2 Hr.

(See Item 9.)

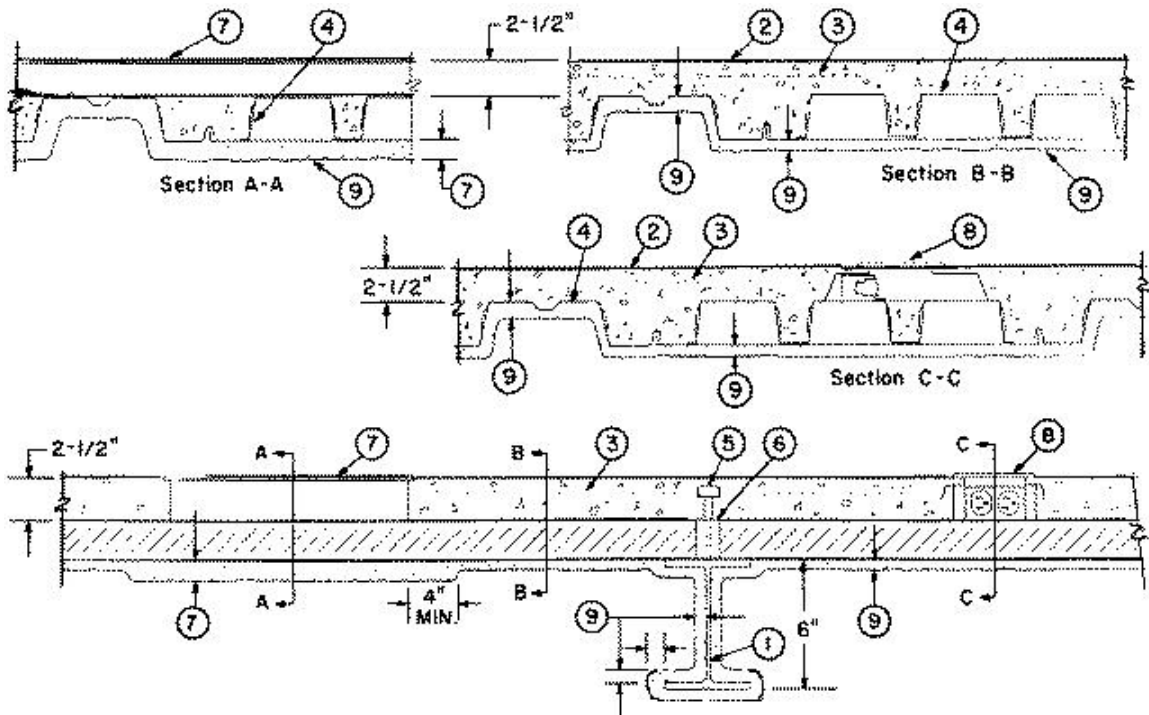
Unrestrained Assembly Ratings — 0, 3/4, 1 and 1-1/2 Hr.

(See Item 9.)

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

(See Item 9.)

(See Items 7 and 9 for Required Thickness of Material for the Various Ratings)



1. **Beam** — W6x12, W8x17, W10x25, W8x24 or W8x28, min size. (See Item 9.)

2. **Normal-Weight or Lightweight Concrete** — Normal weight concrete carbonate or siliceous aggregate, 150 +or- 3 pcf unit weight, 3500 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 pcf unit weight, 3000 psi compressive strength, vibrated.

3. **Welded Wire Fabric** — 6x6 — W1.4xW1.4.

4. **Steel Floor and Form Units*** — Composite, nom 2 or 3 in. deep galv cellular and fluted units. Min gauges are 20/20 MSG for cellular and 22 MSG for fluted units. Floor may consist of all cellular or a blend of one nom 24, 30, or 36 in. wide or two nom 15 in. wide fluted to one or more cellular units. Units welded to supports not over 16 in. OC. Unless noted otherwise, adjacent units button-punched 36 in. OC or welded together 5 ft OC max along side joints.

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

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

5. **Shear Connectors** — Studs, 3/4 in. diam with 1-1/4 in. diam by 1/2 in. thick head or equivalent per AISC specification. 4 or 4-1/2 in. long for use with nom 2 or 3 in. floor units, respectively. Welded to top flange of beam through the deck.

6. **Joint Cover** — 2 in. wide pressure sensitive cloth adhesive tape.

7. **Trench Header** — (Bearing the UL Listing Mark). Constructed of steel and provided with metal edge screeds. When the trench header is located near a support the load carrying capacity of the span may be based on the allowable moment or shear stress of the floor units at the edge of the trench header away from the support, or on the allowable composite moment or shear capacity of the slab at the center of the span whichever governs. For 2 Hr or less Restrained Assembly Rating the required material thickness on floor units below the trench header are 1-3/8 in. in the crests of fluted units and 1-1/8 in. on valleys of fluted and flat plates of cellular units.

As an alternate, trench headers (Bearing the UL Listing Mark) without the bottom pan may be used. The allowable superimposed load for spans with a bottomless trench header shall be based on noncomposite design. The bottomless trench header with a max width of 36 in. consists of two cell closers which conform to the contour of the floor units, placed along the sides of the desired trench header 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 cell closers and floor units. A separate U-shaped galv steel channel (min 18 MSG), 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 the bottomless trench header requires additional protection underneath the trench header. For 2 Hr or less Restrained Assembly Rating the required material thicknesses are 1-3/4 in. in the crests and 1-5/8 in. on valleys and flat plates. For 1 Hr Restrained Assembly Ratings for assemblies consisting of 3 in. deep units, material thicknesses may be reduced to 1-1/2 in. in the crests and 1 in. on valleys and flat plates.

Openings from trench headers into cells of floor units shall be provided with grommets.

7A. **Trench Header** — With an intermittent bottom (as an alternate to Item 7) — (Bearing the UL Listing Mark) — The allowable superimposed load for spans with an intermittent bottom trench header shall be based on noncomposite design. The intermittent bottom trench header, with a maximum width of 24 in., consists of a horizontal closure plate (min. No. 22 MSG), over the fluted deck sections at the desired trench header location and affixed to the floor units by welding or screws (No. 14 by 3/4 in. long self-tapping, self-drilling). At the trench header where horizontal plates cover the fluted units, concrete is to be vibrated into the voids formed by the plate and fluted units. The side rails consist of extruding aluminum screeds secured to the galv steel channels (min. No. 18 MSG), serving as the power compartment is welded to the horizontal closure plates, aligned and welded to the cells and fluted floor units. A separate U-shaped galv steel channel (min. No. 18 MSG), serving as the power compartment is welded to the horizontal closure plates and floor units. Steel cover plates 1/4 in. thick, shall be screw attached to the side rails. For **2 H or less Restrained Assembly Rating**, the required fireproofing thickness below the intermittent bottom trench header and extending a min. of 4 in. beyond the sides of this trench header shall be 1-1/8 in.

8. **Electrical Inserts** — Preset and after set electrical inserts Classified as "**Outlet Boxes and Fittings Classified for Fire Resistance.**" * Unless specified otherwise for a particular preset electrical insert type, the spacing of the preset electrical inserts shall be not less than 24 in. O.C. along cellular steel floor units with not more than one preset electrical insert in each 4 sq ft of floor area. The required thickness of Spray-Applied Fire Resistive Materials on the cellular steel floor units with electrical inserts shall be sprayed the entire length and width of the cellular steel floor units between supports and shall extend onto adjacent floor units for a minimum horizontal width of 12 in. In floor spans (between supports) containing electrical inserts, the entire floor span (fluted and cellular steel floor units) must be sprayed with a minimum 3/8 in. thickness of Spray-Applied Fire Resistive Materials.

(1) **Consolidated Systems, Inc.** Inserts.

Installed per accompanying installation instructions over factory, pre-punched knockouts or factory installed over pre-punched knockout holes in Mac-Way 2- or 3-633 MTWA cellular steel floor units. Either Type MSH-400 or MSH-450 fittings are installed with MSIX insert per accompanying installation instructions. The holes cut in the activation covers for passage of wires shall be not more than 1/8 in. larger diameter than the wire. Abandonment requires use of insert cover with no holes in it.

The required Spray-Applied Fire Resistive Materials thicknesses on steel floor units with inserts are tabulated below:

Restrained Assembly Rating, Hr	Floor Unit Type	Concrete Type	Min Spray Applied Fire Resistive Mtl Thk In.
2	2- or 3-633	NW	1/2
	MTWA		
2	2- or 3-633	LW	7/8
	MTWA		

CONSOLIDATED SYSTEMS INC — MSIX inserts with MSH400 or MSH450 fittings.

(2) **Walker Systems Inc.** Preset Inserts.

Installed per accompanying installation instructions over factory-punched holes in 3 in. deep K-Type cellular steel floor units. Either Type RAKM-II, FAKM-II, S36BB, S36BC or S36CC service fittings are installed with Type N-R-G Bloc IV Series preset inserts per accompanying installation instructions. Refer to installation instructions for Classified assemblies. The required Spray-Applied Fire Resistive Materials thicknesses on steel floor units with inserts are tabulated below:

Restrained Assembly Rating, Hr	Floor Unit Type	Concrete Type	Min Spray Applied Fire Resistive Mtl Thk In.
(Type RAKM-II, S36BB, S36BC, S36CC)			
1	3 in. K	LW or NW	3/8
1-1/2	3 in. K	LW or NW	7/16
2	3 in. K	LW or NW	11/16
(Type FAKM-II)			
1, 1-1/2	3 in. K	LW or NW	3/8
2	3 in. K	LW or NW	7/16

WALKER SYSTEMS INC — Type N-R-G Bloc IV Series inserts; Type RAKM-II, FAKM-II, S36BB, S36BC or S36CC service fittings.

9. **Spray-Applied Fire Resistive Materials*** — Applied in one or more coats, depending on required thickness, by spraying with water to steel surfaces which are free of dirt, oil or scale. No tamping required. Surface of cellular floor units and fluted units under bottomless trenches must be sprayed with adhesive diluted with water and the first coat of material applied while the adhesive is still tacky. Min avg density of material is 13 pcf on beam and floor units and the min ind value is 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. The following tabulated thickness of material are for the various hourly ratings and assembly components.

Unrestrained Beam Rating Hr	Concrete Type	Min Beam Size	Min Mtl Thkns on Beam In.
1	LW or NW	W6X12	3/4
1, 1-1/2	LW or NW	W8X28	1/2
1-1/2	NW	W6X12	7/8
1-1/2	LW or NW	W8X17	1
3	LW or NW	W8X24	1-1/2
3	LW or NW	W10X25	1-1/2
3	LW or NW	W8X17	1-7/8

General Floor Area (Without Penetrations)

Restrained Assembly Rating Hr	Unrestrained Assembly Rating Hr	Steel Floor Unit Depth In.	Concrete Type	Min Mtl Thkns In.		
				Crests	Valley	Flat Plate
1	0	2 or 3	LW	0	0	0
1, 1-1/2	1, 1-1/2	2 or 3	LW or NW	3/8	3/8	3/8
or 2	or 2					

ISOLATEK INTERNATIONAL — Type D-C/F, HP, or II, Type EBS or Type X adhesive.

*Bearing the UL Classification Mark

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