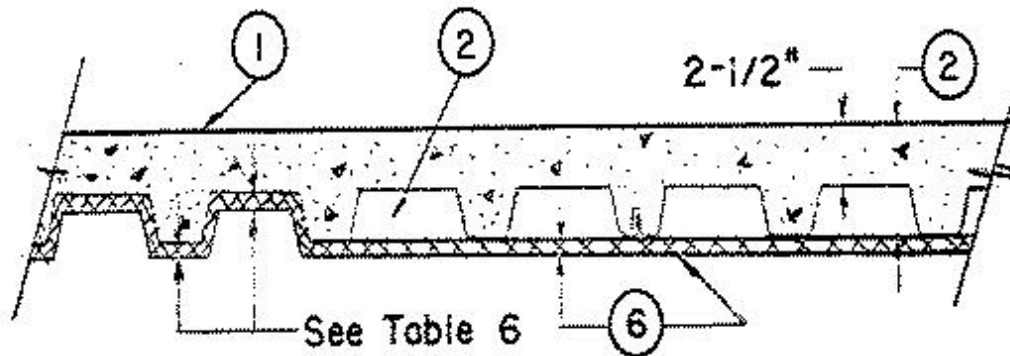
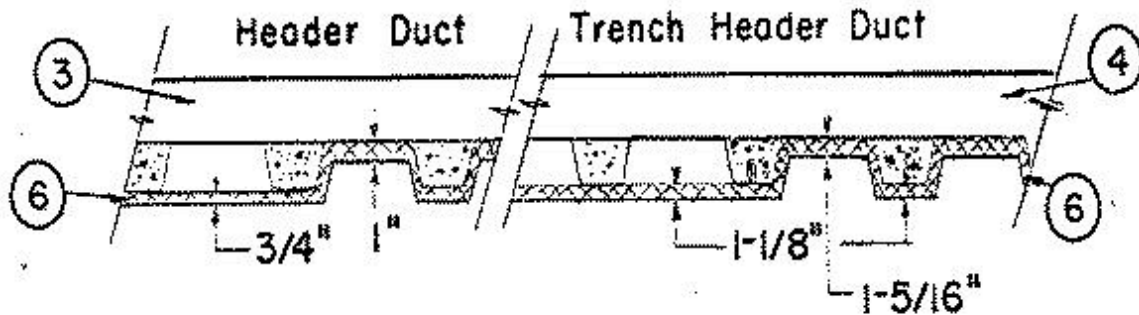
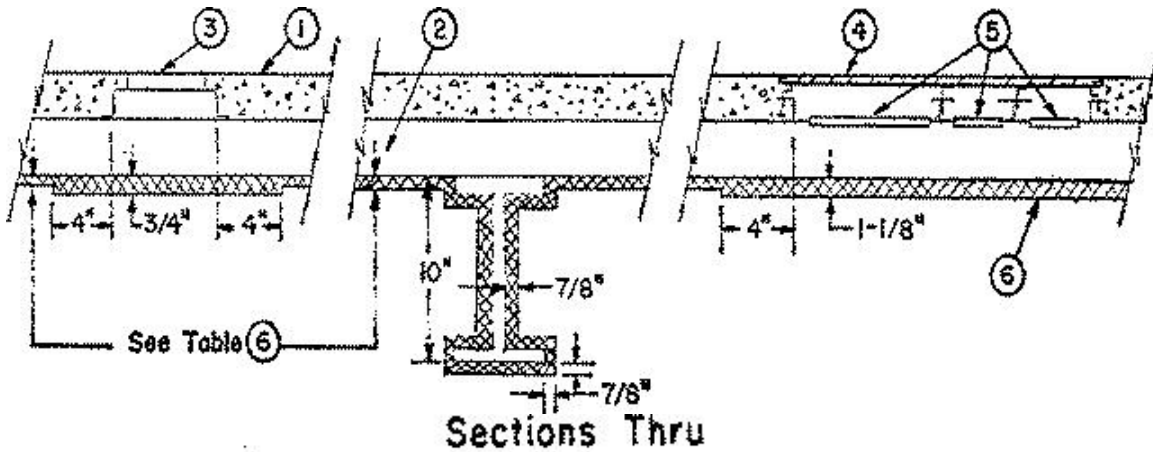


Restrained Assembly Ratings — 2 and 3 Hr.

Unrestrained Assembly Ratings — 2 and 3 Hr.

Unrestrained Beam Rating — 1-1/2 Hr.



Beam — W10x25, min size.

1. **Normal-Weight or Lightweight Aggregate Concrete** — Normal weight concrete, carbonate or siliceous aggregate, 150 +or- 3 pcf unit weight, 3500-psi compressive strength, vibrated. Lightweight concrete, expanded shale, clay, or slate aggregate by rotary-kiln method; 112 + 3, -5 pcf unit weight, 3500-psi compressive strength, vibrated, 4 to 7 per cent entrained air.

As an option, welded wire fabric may be placed in the concrete.

2. Steel Floor and Form Units* — Composite 1-1/2, 2, or 3 in. deep galv units. Minimum gauges are 22 MSG for fluted and 20/18 MSG for cellular or partial cellular. For spans with trench headers the allowable loading shall be based on noncomposite design.

CONSOLIDATED SYSTEMS INC — 24 or 36 in. wide Types CFD-1.5, CFD-2 or CFD-3. *A Types CFD-2 and CFD-3 may be phos/ptd. Type EBS adhesive is required on phos/ptd units (see Item 6).

Spacing of welds attaching units to supports shall be not over 12 in. OC. Unless noted otherwise, adjacent units button-punched or welded together 36 in. OC along side joints.

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

3. Header Duct and Fittings — (Bearing the UL Listing Mark). 1-1/2 in. deep by 6-3/4 in. wide. Housing constructed of steel.

4. 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.

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. Fireproofing thickness shall be increased to: 1-3/4 in. in crests and 1-5/8 in. on valleys and flat plates for 2 hr ratings, and the thicknesses shall be increased to 2-1/4 in. in crests and 2-1/8 in. on valleys and flat plates for 3 hr ratings.

5. Access Openings — As required, with grommets.

6. Spray-Applied Fire Resistive Materials* — Applied by spraying with water, in one coat to a final thickness as shown in the table below, to steel surfaces which are free of dirt, oil, or scale. Use of adhesive is required under bottomless trenches; optional for the other conditions. Min avg density is 13 pcf with min ind density of 11 pcf for Type 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.

Restrained Assembly Rating Hr	Unrestrained Assembly Rating Hr	Mtl Thkns Crests	Mtl Thkns	
			Valley	Flat Plate
2	2	11/16	3/8	3/8
3	3	7/8	5/8	5/8

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

7. **Shear-Connector Studs** — Optional — (Not Shown) — Studs, 3/4 in. diam, headed type or equivalent per AISC specifications. Welded to the top flange of beam through the steel floor units. Length of studs, after welding, shall provide a min 1/2 in. concrete cover thickness.

8. **Electrical Inserts** — Optional, not shown — "**Outlet Boxes and Fittings Classified for Fire Resistance**" — May be used for 2 hr ratings with normal weight concrete only. **Dual-Cell** pre-set insert is factory attached to top of cell of Mac-Way 45MDW floor unit. Spacing of inserts is 5 ft. O.C. along floor unit. **MSH500** service fittings or **MSH-AD** abandonment fittings are installed in the **Dual-Cell** insert per accompanying installation instructions. When **Dual-Cell** insert (with or without service or abandonment fittings) is used, a 3/4 in. (for normal weight concrete) or 1-1/16 in. (for lightweight concrete) Spray-Applied Fire Resistive Materials thickness is required on floor units with inserts. Required thickness shall be sprayed the entire width and length of floor unit between supports and extend beyond the edge units for a horizontal width of 12 in.

CONSOLIDATED SYSTEMS INC — Dual-Cell inserts; MSH500 or MSH-AD fittings.

May be used for 2 hr Restrained Assembly only with normal weight or lightweight concrete and Type D-C/F Spray-Applied Fire Resistive Materials only. Installed per accompanying installation instructions over factory pre-punched knockouts or factory installed over pre-punched knockout holes in Mac-Way 2- or 3-633MTWA cellular steel floor units. Spacing shall be not more than one insert in each 7-1/2 sq ft of floor area with not less than 2 ft 6 in. center to center of adjacent inserts. MSH-400 or MSH-450 activating fittings are installed in the MSIX insert per accompanying installation instructions. When MSIX insert (with or without activating fittings) is used, a 1/2 in. for normal weight concrete or 7/8 in. for lightweight concrete Spray-Applied Fire Resistive Materials thickness is required on floor units with inserts. Required Spray-Applied Fire Resistive Materials thickness on cellular steel floor units with inserts shall be sprayed the entire length of units between supports. The holes cut in the activation covers for passage of wires shall be no more than 1/8 in. larger diam. than the wire. Abandonment requires use of insert cover with no holes in it.

CONSOLIDATED SYSTEMS INC — MSIX inserts; MSH-400 or MSH-450 activating fittings.

*Bearing the UL Classification Marking

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