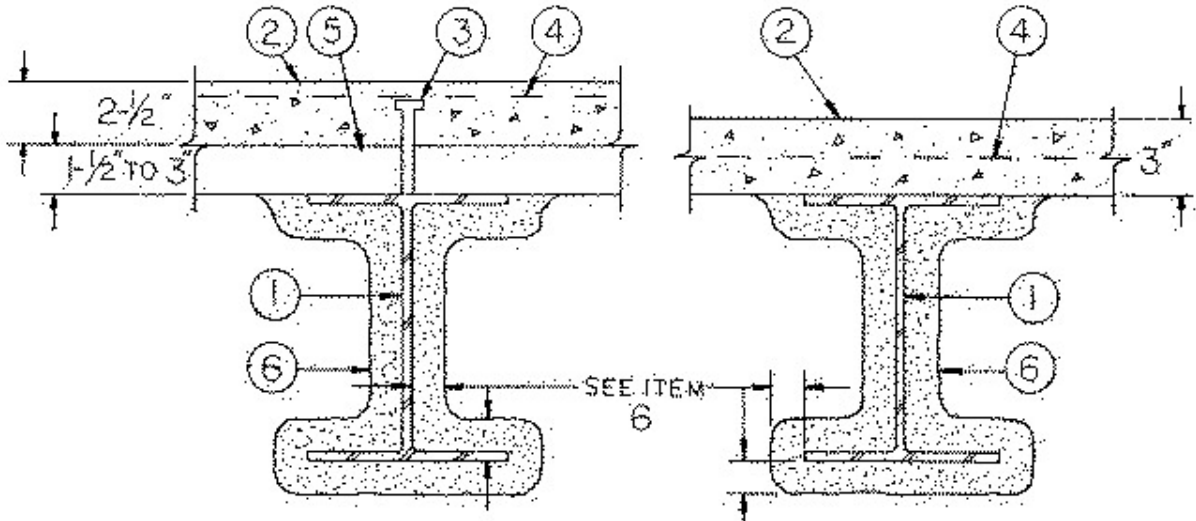


UL Design No. N791

October 06, 2006

Restrained Beam Ratings — 1, 1-1/2, 2, 2-1/2, 3, 3-1/2 and 4 Hr. (See Items 2, 6)
Unrestrained Beam Ratings — 1, 1-1/2, 2, 2-1/2, 3, 3-1/2 and 4 Hr. (See Items 2, 6)

Load Restricted for Canadian Applications — See Guide [BXUV7](#)



1. **Steel Beam** — W8x28 min size.
2. **Normal Weight or Lightweight Concrete** — Compressive strength, 3000 psi. For normal weight concrete either carbonate or siliceous aggregate may be used. Unit weight, 148 pcf. For lightweight concrete, unit weight 110 pcf.
3. **Shear Connector** — (Optional) — Studs, 3/4 in. diam headed type or equivalent per AISC specifications. Welded to the top flange of beam through the steel floor units.
4. **Welded Wire Fabric** — (Optional) — 6x6-10/10 SWG.
5. **Steel Floor and Form Units*** — 1-5/16 in. deep corrugated units; or 1-1/2 to 3 in. deep fluted units, welded to beam.
6. **Spray-Applied Fire Resistive Materials*** — Applied by mixing with water and spraying in more than one coat to the beam to the final thicknesses shown below. Deck crest areas shall be filled with Spray-Applied Fire Resistive Materials above the beam. Beam surfaces must be clean and free of dirt, loose scale and oil. Min avg and min ind density of 17/16 pcf respectively. Min avg and min ind density of 19/18 pcf respectively for Types 7GP and 7HD. For method of density determination, see Design Information Section.

	With Lightweight Concrete		With Normal Weight Concrete	
	Min Thkns In.		Min Thkns In.	
Rating, Hr	Restrained Beam	Unrestrained Beam	Restrained Beam	Unrestrained Beam
1	3/8	3/8	7/16	7/16
1 1/2	3/8	9/16	1/2	5/8

2	9/16	13/16	5/8	13/16
2 1/2**	3/4	1	13/16	1 1/16
3	15/16	1 1/4	15/16	1 1/4
3 1/2**	1 1/16	1 1/2	1 1/8	1 1/2
4	1 1/4	1 5/8	1 1/4	1 13/16

** The 2-1/2 and 3-1/2 hour ratings are for use when mineral fiber boards, polystyrene insulation exceeding 5 pcf, or polyisocyanurate insulation are used over the concrete in D900 series designs as stated in the front of the Fire Resistance Directory - III. FLOOR-CEILINGS AND ROOF-CEILINGS, Item 21. Roof Insulation.

The thickness of Spray-Applied Fire Resistive Materials shown in the table below are applicable when the thickness applied to the beams lower flange edges is reduced by one-half and the beams are supporting solid concrete slabs or floor assemblies containing only fluted floor or form units.

Rating, Hr	With Lightweight Concrete		With Normal Weight Concrete	
	Min Thkns In.		Min Thkns In.	
	Restrained Beam	Unrestrained Beam	Restrained Beam	Unrestrained Beam
1	3/8+	3/8+	1/2	1/2
1 1/2	3/8+	9/16	9/16	3/4
2	9/16	13/16	3/4	1
2 1/2**	3/4	1 1/16	1	1 5/16
3	15/16	1 3/8	1 1/8	1 1/2
3 1/2**	1 1/8	1 3/4	1 3/8	1 13/16
4	1 5/16	1 15/16	1 1/2	2 1/8

+ Thickness applied to beams' lower flange edges shall be a min of 1/4 in.

** The 2-1/2 and 3-1/2 hour ratings are for use when mineral fiber boards, polystyrene insulation exceeding 5 pcf, or polyisocyanurate insulation are used over the concrete in D900 series designs as stated in the front of the Fire Resistance Directory - III. FLOOR-CEILINGS AND ROOF-CEILINGS, Item 21. Roof Insulation.

SOUTHWEST FIREPROOFING PRODUCTS CO — Types 4, 5, 5EF, 5GP, 5MD, 7GP, 7HD, 8EF, 8GP, 8MD, 9EF, 9GP, 9MD.

*Bearing the UL Classification Mark