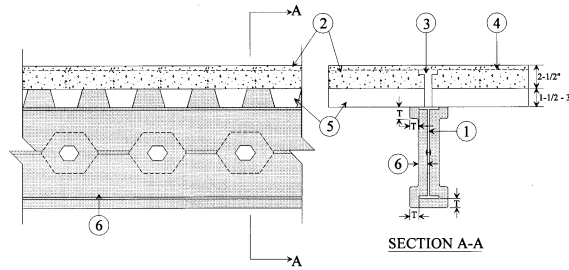


**Design No. N831**

Restrained Beam Ratings — 1, 1-1/2, 2 & 3 Hr(See Item No. 6)  
 Unrestrained Beam Ratings — 1, 1-1/2, 2 & 3 Hr(See Item No. 6)  
 Load Restricted for Canadian Applications — See Guide BXUV7



1. **Structural Steel Members\*** — Type CB12x10 min size.  
**CMC STEEL PRODUCTS**
2. **Lightweight Concrete** — Compressive strength 3500 psi. Unit weight 107 to 113 pcf.
3. **Shear Connector (Optional)** — Studs, 1/2 in. diam headed type or equivalent per AISC specifications. Welded to top flange of beam through the steel floor units.
4. **Welded Wire Fabric** — 6x6, W1.4xW1.4.
5. **Steel Floor And Form Units** — 1-1/2, 2 or 3 in. deep fluted units welded to beam.
6. **Spray-Applied Fire Resistive Materials\*** — Spray applied in one ore more coats to a final thickness as shown in the table below, to steel surfaces which must be clean and free of dirt, loose scale and oil. Crest areas above the beam shall be filled with the material. Min avg density of 13 pcf and min ind density of 11 pcf for Types DC/F and II. Min avg density of 22 pcf and min ind density of 19 pcf for Type HP. For method of density determination, refer to Design Information Section.

**Thickness, In.**

Rating Hr	Unrestrained Beam Rating Hr	Restrained Beam Rating Hr
1	1-1/16	1-1/16
1-1/2	1-7/16	1-3/16
2	2	1-3/4
3	3-1/4	3

**ISOLATEK INTERNATIONAL** —Type DC/F, II or HP. Investigated for exterior use. Type EBS or Type X adhesive/surface sealer optional

- 6A. **Spray-Applied Fire Resistive Materials\*** — As an alternate to Item 6 - See table below for appropriate thicknesses. Applied by mixing with water in accordance with instructions on each bag of materials and spraying in one or more coats to beam or lath surfaces which must be free of dirt, loose scale or oil. Surface of applied material may be lightly finished with a trowel. Crest areas above the beam shall be filled with Spray-Applied Fire Resistive Materials. Min average and min individual density of 15 and 14 pcf, respectively. For method of density determination, see Design Information Section, Sprayed Material.

Restrained and Unrestrained Beam Rating Hr	Thickness, In.
1	1
1-1/2	1-7/16
2	1-7/8
3	2-1/2

**BERLIN CO LTD** — Types 300, 300ES, 300N or SB.  
**ISOLATEK INTERNATIONAL** —Types 300, 300AC, 300ES, 300HS, 300N, or SB.  
**LUCKY CORE INSULATING MATERIALS MANUFACTURING L L C** —Types 300, 300ES, 300N, or SB.  
**NEWKEM PRODUCTS CORP** —Types 300, 300ES, 300N, or SB.

- 6B. **Spray-Applied Fire Resistive Materials\*** — As an alternate to Item 6 and 6A - See table below for appropriate thicknesses. Applied by mixing with water in accordance with instructions on each bag of materials and spraying in one or more coats to beam or lath surfaces which must be free of dirt, loose scale or oil. Surface of applied material may be lightly finished with a trowel. Crest areas above the beam shall be filled with Spray-Applied Fire Resistive Materials. Min average and min individual density of 17.5 and 16 pcf, respectively, for Type 300TW. Min average and min individual density of 22 and 19 pcf, respectively, for Type 400. For method of density determination, see Design Information Section, Sprayed Material.

Restrained and Unrestrained Beam Rating Hr	Thickness, In.
1	1
1-1/2	1-7/16
2	1-7/8
3	2-1/2

**ISOLATEK INTERNATIONAL** — Types 300TW or Type 400.  
**LUCKY CORE INSULATING MATERIALS MANUFACTURING L L C** —Type 400.  
**NEWKEM PRODUCTS CORP** —Type 400.

\*Bearing the UL Classification Mark