

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States

BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

[See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States Design Criteria and Allowable Variances](#)

[See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada Design Criteria and Allowable Variances](#)

Design No. N706

May 08, 2024

(Formerly 34 — 5 Hr., 40 — 4 Hr., 216 — 3 Hr., 239 — 2 Hr.)

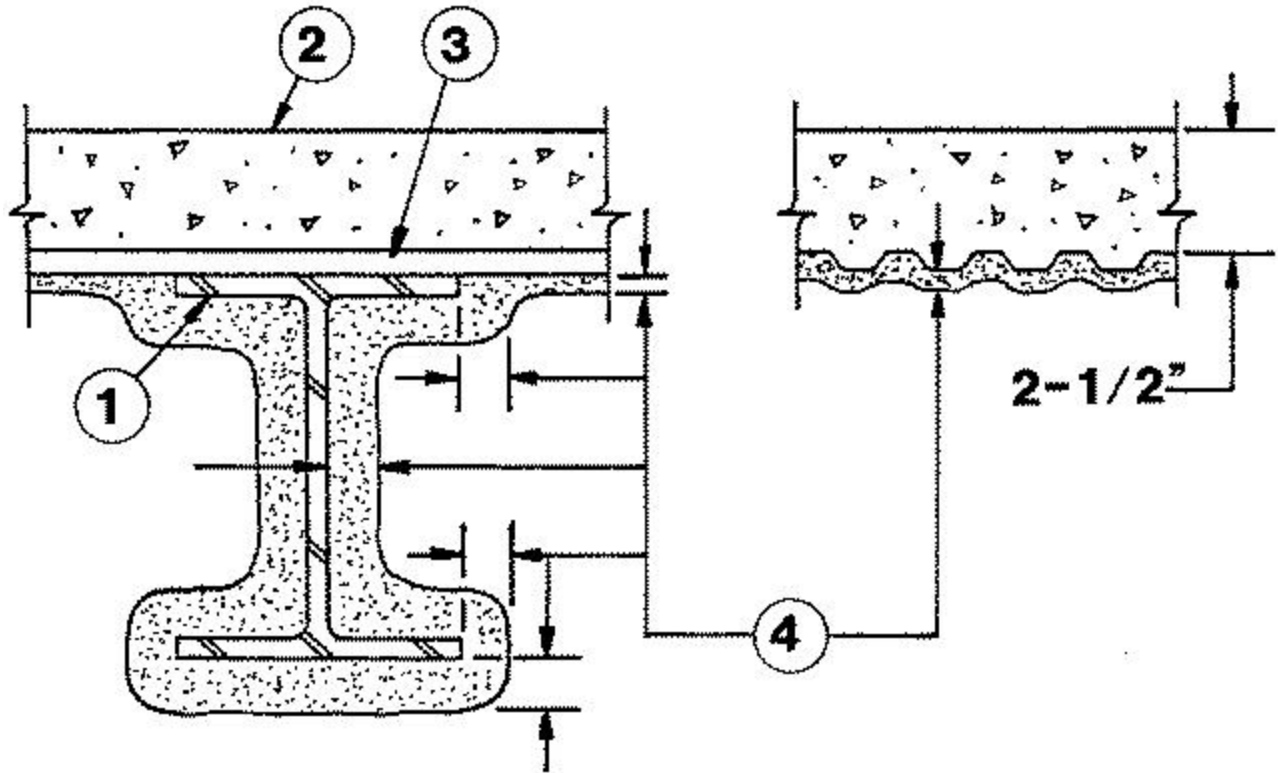
Restrained Beam Ratings — 1, 1-1/2, 2, 3, and 4 Hr.

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

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide [BXUV](#) or [BXUV7](#)

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**





1. **Steel Beam** — Min beam size for ratings shall be:

Rating Hr	Restrained Beam Rating Hr	Unrestrained Beam Rating Hr
4	W8x24	W8x28
3	W8x24	W8x28
2	W8x28	W8x28
1-1/2	W8x28	W8x28
1	W8x28	W8x28

2. **Normal Weight or Lightweight Concrete** — For normal weight concrete either carbonate or siliceous aggregate may be used. Unit weight 148 pcf. For lightweight concrete, unit weight 110 pcf.

3. **Steel Floor and Form Units** — Min 1-1/2 to 3 in. deep cellular or fluted type, welded to beam.

4. **Spray-Applied Fire Resistive Materials*** — Applied by mixing with water and spraying in more than one coat to beam and in one coat to steel deck to final thicknesses shown below. Steel surfaces must be clean and free of dirt, loose scale, and oil. Min avg and min ind density of 15/14 pcf respectively. Min avg and min ind density of 19/18 pcf respectively for Types 7GP and 7HD. For method of density determination, refer to Design Information Section. Types 4, MK-6/CBF, RG, VP4, 5GP, 7GP, 7HD, 8GP, 9GP, may be used only with all fluted steel floor units or blends consisting of one or more fluted units to one 24 in. wide max cellular unit, 1-1/2 or 3 in. deep, with cells spaced approx 6 and 8 in. respectively. When fluted units are used, crest areas above the beam shall be filled with Spray-Applied Fire Resistive Materials.

Rating Hr	Normal Weight Concrete				Lightweight Concrete			
	Restrained Min Thkns In.		Unrestrained Min Thkns In.		Restrained Min Thkns In.		Unrestrained Min Thkns In.	
	Beam	Deck	Beam	Deck	Beam	Deck	Beam	Deck
4	1-1/2	1/2	2	None	1-5/8	1/2	2	None

3	1-1/8	1/2	1-1/4	1/2	1-1/4	1/2	1-9/16	1/2
2	3/4	3/8	7/8	3/8	7/8	3/8	1	3/8
1-1/2	5/8	3/8	11/16	3/8	11/16	3/8	13/16	3/8
1	1/2	None	1/2	None	1/2	None	1/2	None

The thicknesses of Spray-Applied Fire Resistive Materials shown in the table below are applicable when the thickness applied to the beam's lower flange edges is reduced to one-half that shown in the table:

Rating Hr	Normal Weight Concrete				Lightweight Concrete			
	Restrained Min Thkns In.		Unrestrained Min Thkns In.		Restrained Min Thkns In.		Unrestrained Min Thkns In.	
	Beam	Deck	Beam	Deck	Beam	Deck	Beam	Deck
4	1-11/16	1/2	2-1/4	None	1-7/8	1/2	2-1/4	None
3	1-5/16	1/2	1-7/16	1/2	1-7/16	1/2	1-3/4	1/2
2	7/8	3/8	1	3/8	1	3/8	1-1/8	3/8
1-1/2	3/4	3/8	13/16	3/8	13/16	3/8	15/16	3/8
1	9/16	None	9/16	None	9/16	None	9/16	None

ARABIAN Vermiculite Industries — Types MK-6/CBF, MK-6/ED, MK-6/HY, MK-6/HB, MK-10 HB, MK-10 HB Extended Set, MK-6s, Sonophone 1.

GCP Korea Inc — Types MK-6/CBF, MK-6/ED, MK-6/HY, MK-6/HB, MK-10 HB, MK-10 HB Extended Set, MK-6s, Monokote Acoustic 1.

Pyrok Inc — Type LD.

Carbolite Global Inc. — Types 4, 5, 5EF, 5GP, 5MD, 7GP, 7HD, 8EF, 8GP, 8MD, 9EF, 9GP, 9MD.

GCP Applied Technologies Inc — Types MK-6/HY, MK-10 HB, MK-10 HB Extended Set, MK-6/HB, MK-6s, Monokote Acoustic 1, RG.

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