



# BXUV.N779

## 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. N779

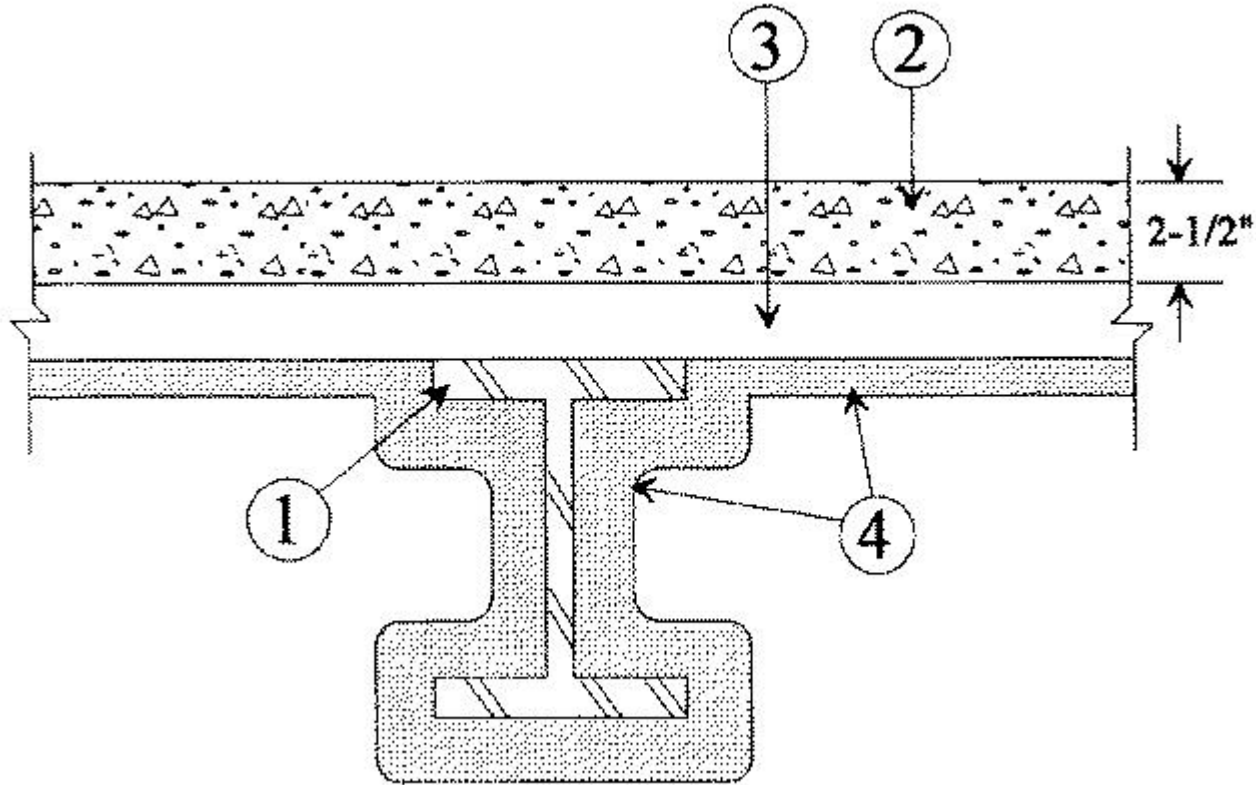
February 05, 2014

**Restrained Beam Ratings — 1, 1-1/2, 2, 3 & 4 Hr**

**Unrestrained Beam Ratings — 1, 1-1/2, 2, 3 & 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** — W8x28 or alternate (per Section IV.6 in the front of the Fire Resistance Directory) steel beam.

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.

2A. **Welded Wire Fabric** — (Optional) — 6x6-10/10 SWG.

3. **Steel Floor and Form Units\*** — Min 1/2 in. to 1-5/16 in. deep corrugated or 1-1/2 to 3 in. deep 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 individual density of 22/19 pcf respectively for Types Z-106, Z-106/G, Z-106/HY. Min avg and min ind density of 40/36 pcf respectively for Types Z-146, Z-146PC and Z-146T cementitious mixture. Min avg and min ind density of 50/45 pcf respectively for Types Z-156, Z-156T and Z-156PC. For method of density determination, refer to Design Information Section.

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

**ARABIAN VERMICULITE INDUSTRIES** — Types MK-6GF, MK-6 GF Extended Set, MK-10 HB, MK-10 HB Extended Set, MK-1000/HB, MK-1000/HB Extended Set.

**GCP KOREA INC** — Types MK-6/HY, MK-6/HB, MK-6s, MK-6 GF, MK-6 GF Extended Set, MK-6/HY Extended Set, MK-10 HB, MK-10 HB Extended Set, MK-1000/HB, MK-1000/HB Extended Set, RG, Z-106, Z-106/HY, Z-106/G, Z-146 investigated for exterior use.

**GCP APPLIED TECHNOLOGIES INC** — Types MK-6/HY, MK-6/HB, MK-6s, MK-6 GF, MK-6 GF Extended Set, MK-6/HY Extended Set, MK-10 HB, MK-10 HB Extended Set, MK-1000/HB, MK-1000/HB Extended Set, RG, Z-106, Z-106/HY, Z-106/G, Z-146, Z-146T, Z146PC, Z-156, Z-156T and Z-156PC investigated for exterior use.

**4A. 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. Crest areas above the beam shall be filled with Spray-Applied Fire Resistive Materials. Steel surfaces must be clean and free of dirt, loose scale, and oil. Min avg and min ind density of 15/14 pcf, respectively. For method of density determination, refer to Design Information Section. The thickness of Spray-Applied Fire Resistive Materials shown in the table below are only applicable when the beams are supporting floor assemblies containing only fluted floor and form units, topped with concrete as specified.

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
1	5/16	None	5/16	None	5/16	None	5/16	None
1-1/2	3/8	None	9/16	None	7/16	3/8	9/16	3/8
2	9/16	None	3/4	None	5/8	3/8	3/4	3/8
3	15/16	None	1-3/16	1/2	15/16	1/2	1-3/16	1/2
4	1-5/16	None	1-5/8	1/2	1-5/16	1/2	1-5/8	1/2

**ARABIAN VERMICULITE INDUSTRIES** — Type MK-6GF, MK-6 GF Extended Set

**GCP KOREA INC** — Type MK-6 GF, MK-6 GF Extended Set

**GCP APPLIED TECHNOLOGIES INC** — Type MK-6 GF, MK-6 GF Extended Set

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

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