

BXUV.N759 - FIRE-RESISTANCE RATINGS - ANSI/UL 263

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. N759

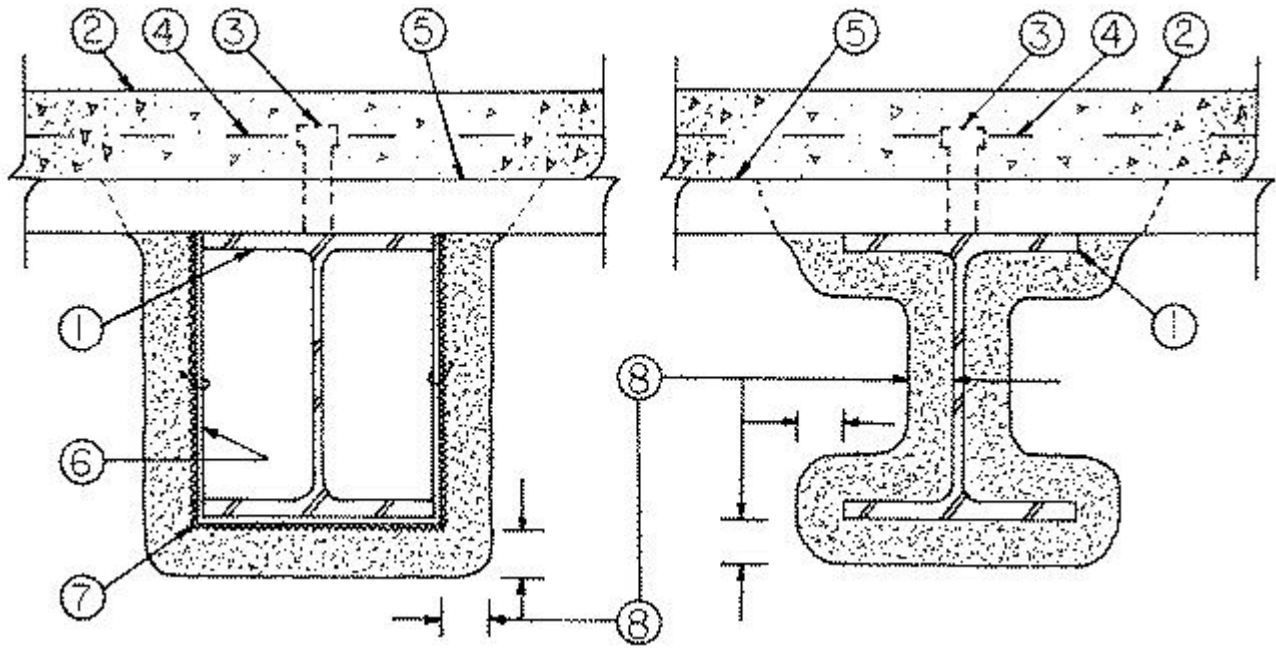
March 27, 2018

Restrained Beam Rating — 1, 1-1/2, 2, 3 and 4 Hr. (See Item 8)

Unrestrained Beam Rating — 1, 1-1/2, 2, 3 and 4 Hr. (See Item 8)

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 min size.
 - 2. **Normal Weight or Lightweight Concrete** — Normal weight or lightweight concrete, 2-1/2 in. min thickness over the steel floor and form unit crests or min 3 in. thick slab with a compressive strength of 3500 psi and min dry unit weight of 110 pcf.
 - 3. **Shear Connector** — (Optional) — Studs, 3/4 in. diam headed type or equivalent per AISC specification. Welded to the top flange of beam through the steel floor units.
 - 4. **Welded Wire Fabric** — (Optional) 6x6, W1.4 x W1.4 or 6x6-10/10 SW.
 - 5. **Steel Floor and Form Units** — 1-1/2 to 3 in. deep fluted, cellular or corrugated units in any combination, welded to beam.
 - 6. **Lath Hangers** — (Optional, for use with Item 7) — No. 6 SWG steel wire, spaced 27 in. OC max.
 - 7. **Metal Lath** — (Optional) — For boxed type protection 3.4 lb./sq. yd. galv or painted expanded steel. Attached by gunned or stud welded pins at max 24 in. OC with 1-1/2 to 3 inch overlaps. As an alternate, lath may be, tied to lath hangers (item 6) and tied together with No. 18 SWG galv steel wire spaced 6 in. OC max with 1 inch overlaps at tie locations.
 - 8. **Spray-Applied Fire Resistive Materials*** — Prepared by mixing with water. Spray-Applied in one or more coats to beam surfaces to a min final thickness as shown in the tables below. Beam surfaces must be clean and free of dirt, loose scale, and oil. Crest areas of deck above the beams shall be filled with spray-Applied Fire Resistive Materials. Min average and min individual density of 15 pcf, and 14 pcf respectively for types 300, 300AC, 300ES, 300HS, 300N, 3000, 3000 ES and SB. For types 400, 400AC, and 400ES min average density and individual density of 22 pcf and 19 pcf respectively. Min avg density of 44 pcf with min individual value of 40 pcf for types M-II and TG. Min average density of 47 pcf with min individual value of 43 pcf for Type M-II/P. For method of density determination, see Design Information Section, Sprayed Material.
- The thicknesses of Spray-Applied Fire Resistive Materials shown in the table below are applicable when the beams are supporting solid concrete slabs or floor assemblies containing only fluted floor or form units.

Rating Hr	Min Thkns In.	
	Restrained Beam	Unrestrained Beam
1	5/16	5/16
1-1/2	3/8	1/2
2	9/16	11/16
2-1/2*	13/16	7/8
3	1	1-1/16

3-1/2*	1-3/16	1-1/4
4	1-7/16	1-1/2

The thicknesses of Spray-Applied Fire Resistive Materials shown in the table below are applicable when the beams are supporting floor assemblies containing cellular or corrugated floor units.

Rating Hr	Min Thkns In.	
	Restrained Beam	Unrestrained Beam
1	5/16	5/16
1-1/2	7/16	9/16
2	9/16	13/16
2-1/2*	13/16	1-1/16
3	1	1-5/16
3-1/2*	1-1/4	1-9/16
4	1-7/16	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 20. Roof Insulation.

The thicknesses of Spray-Applied Fire Resistive Materials shown in the following table are applicable when the thickness applied to the beams' lower flange edges is reduced by 1/2 and the min thickness applied to the lower flange edges is 1/4 in. The beams are supporting solid concrete slabs or floor assemblies containing only fluted floor or form units.

Rating Hr	Min Thkns In.	
	Restrained Beam	Unrestrained Beam
1	3/8	3/8
1-1/2	7/16	9/16
2	5/8	3/4
3	1-1/8	1-3/16
4	1-5/8	1-11/16

The thicknesses 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 1/2 and the min thickness applied to the lower flange edges is 1/4 in. The beams are supporting floor assemblies containing cellular or corrugated floor units

Rating Hr	Min Thkns In.	
	Restrained Beam	Unrestrained Beam
1	3/8	3/8
1-1/2	1/2	5/8
2	5/8	7/8
3	1-1/8	1-7/16
4	1-5/8	2

BERLIN CO LTD — Types 300, 300ES, 300N, SB, or 400; Types M-II, TG and M-II/P

GREENTECH THERMAL INSULATION PRODUCTS MFG CO L L C — Types 300, 300AC, 400, or 400AC; Types M-II, TG and M-II/P

ISOLATEK INTERNATIONAL — Types 300, 300AC, 300ES, 300HS, 300N, SB, 400, 400AC, 400ES, 3000, or 3000ES; Types M-II, TG and M-II/P

NEWKEM PRODUCTS CORP — Types 300, 300ES, 300N, 400, or SB; Types M-II, TG and M-II/P

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