

BXUV.N823 - 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. N823

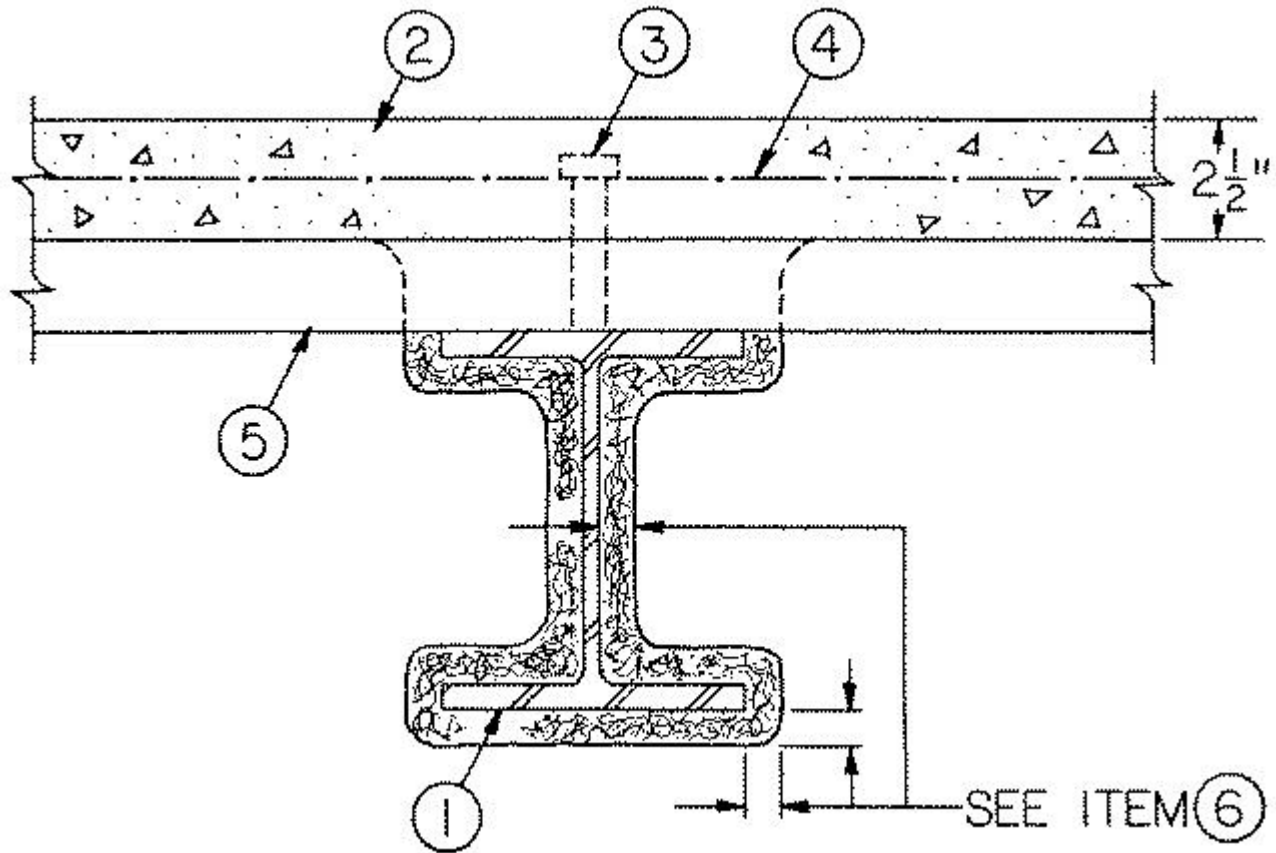
May 03, 2018

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** — W8x28 min size.
- 2. **Normal Weight or Lightweight Concrete** — Compressive strength 2800 psi. For normal weight concrete either carbonate or siliceous aggregate may be used. Unit weight 150 pcf. For lightweight concrete, unit weight 102 pcf.
- 3. **Shear Connector (Optional)** — Studs, 3/4 in. diameter headed type or equivalent per AISC specifications. Welded to top flange of beam through the steel floor units.
- 4. **Welded Wire Fabric** — (optional) 6x6, W1.4xW1.4.
- 5. **Steel Floor and Form Units** — 1-1/2 to 3 in. deep fluted, cellular or corrugated units, welded to beam.
- 6. **Spray-Applied Fire Resistive Materials*** — Applied by spraying with water to the final thicknesses shown below. 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 average density of 13 pcf with min. ind density of 11 pcf for Types II, II HS, , or DC/F. Min avg and min ind densities of 22 and 19 pcf, respectively, for Type HP. For method of density determination, refer to Design Information Section.

Normal Weight Concrete, Fluted Floor and Form Units, Min Thkns, In.

Rating, Hr	Restrained Beam	Unrestrained Beam
1	3/8	3/8
1-1/2	3/8	1/2
2	1/2	3/4
2-1/2*	3/4	15/16
3	1	1-3/16
3-1/2*	1-1/4	1-3/8
4	1-7/16	1-9/16

Lightweight Concrete, Fluted Floor and Form Units, Min Thkns, In.

Rating, Hr	Restrained Beam	Unrestrained Beam
1	3/8	3/8
1-1/2	7/16	5/8
2	3/4	1
2-1/2*	1	1-5/16
3	1-1/4	1-9/16
3-1/2*	1-1/2	1-13/16
4	1-13/16	2

Normal Weight Concrete, Cellular or Corrugated Form Units, Min Thkns, In.

Rating, Hr	Restrained Beam	Unrestrained Beam
1	3/8	3/8
1-1/2	3/8	1/2
2	1/2	13/16
2-1/2*	7/8	1-1/8
3	1	1-5/16
3-1/2*	1-1/4	1-5/8
4	1-7/16	1-7/8

Lightweight Concrete, Cellular or Corrugated Form Units, Min Thkns, In.

Rating, Hr	Restrained Beam	Unrestrained Beam
1	7/16	7/16
1-1/2	1/2	11/16
2	3/4	1
2-1/2*	1-1/16	1-5/16
3	1-1/4	1-5/8
3-1/2*	1-9/16	1-15/16
4	1-13/16	2-3/16

*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.

ISOLATEK INTERNATIONAL — Type D-C/F, HP, II, or Type II HS. Investigated for exterior use. Type EBS or Type X adhesive/surface sealer optional.

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respectively.

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