

BXUV.N830 - 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. N830

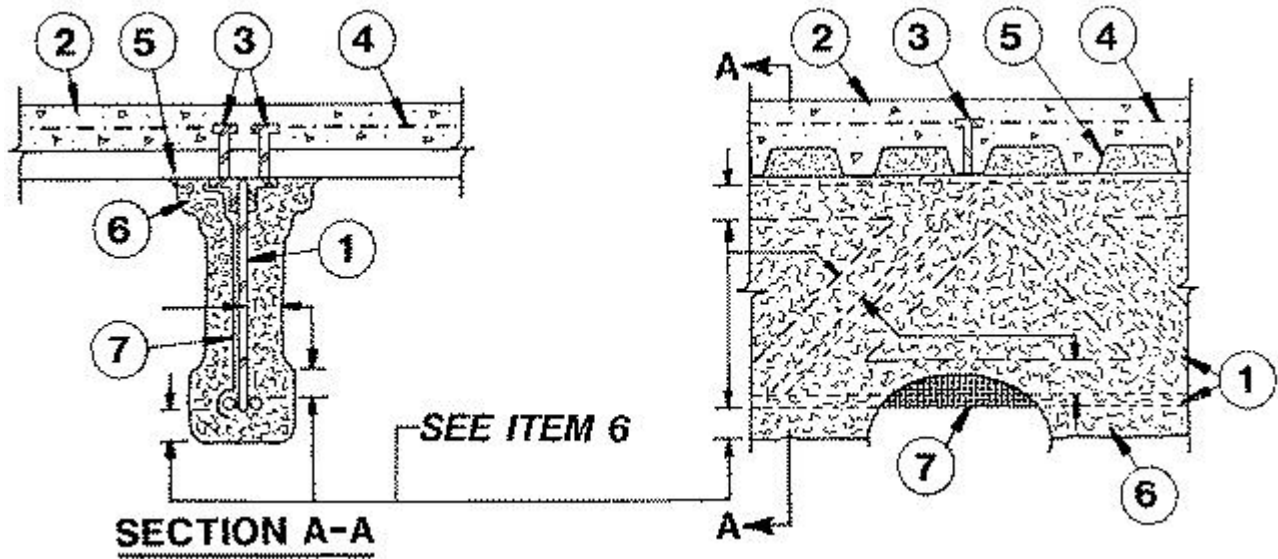
July 13, 2018

Unrestrained Beam Ratings — 1, 1-1/2, 2 and 3 Hr (See Item 6)

Restrained Beam Ratings — 1, 1-1/2, 2 and 3 Hr (See Item 6)

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 Joists — Composite or non-composite min 8k1 or min depth and weight shall be 8 in. and 4.9 lb/ft respectively. May be uncoated or provided with a shop coat of paint. Designed per S.J.I. specifications for a max design stress of 30, 000 psi (30 ksi). Welded or bolted to end supports. The top chords shall consist of two angles measuring 1-1/4 by 1-1/4 by 0.127 in. thick. Bottom chords shall consist of two round bars measuring 0.566 in. in diam or two angles measuring 1 by 1 by 0.125 in. thick. Bearing plates shall consist of two angles measuring 1-1/2 by 2 by 0.188 in. thick and 5-1/16 in. long. Web members shall consist of 0.565 in. diam bars.

1A. Steel Joist — (Not Shown) - As an alternate to Item 1 - Composite or non-composite min 10k1 or min depth and weight shall be 10 in. and 4.97 lb. /ft. respectively. May be uncoated or provided with a shop coat of paint. Designed per S.J.I. specifications for a max design stress of 50,000 psi (50 ksi). Top chords shall consist of two angles measuring 1-1/4 by 1-1/4 by 0.132 in. thick, min. Bottom chords shall consist of two angles measuring 1 by 1 by 0.107 in. thick, min. The first diagonal web member at each end shall consist of a min 0.625 in. diameter round bar. All remaining web members shall consist of .562 in. diameter round bars, min. Bridging per S.J.I specifications when non-composite joints are used.

2. Normal Weight or Light Weight Concrete — 2-1/2 in. thick min compressive strength of 3000 psi. For normal weight concrete, either carbonate or siliceous aggregate may be used. Unit weight, 145 +/-3 pcf. For lightweight concrete, unit weight may range from 104 to 120 pcf.

3. Shear Connector — (Optional) — Studs, min 1/2 in. diam headed type or equivalent per A.I.S.C. specifications. Welded to the top flange of joist through the steel floor units. Studs welded, as recommended by the stud manufacturer.

4. Welded Wire Fabric — Min 6x6-W1.4xW1.4.

5. Steel Floor and Form Units — 1-1/2 to 3 in. deep corrugated, fluted or cellular units welded to joists. Max usage of cellular units shall consist of 1:1 blend with fluted units.

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 joist. Joist surfaces must be clean and free of dirt, loose scale, and oil. Min average density of 15 pcf with min. individual density of 14 pcf for Types II, or DC/F. Min average and min individual 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		Unrestrained	
	8K1 Joist (Item 1)	10K1 Joist (Item 1A)	8K1 Joist (Item 1)	10K1 Joist (Item 1A)
1	1+	3/4	1+	3/4
1-1/2	1	3/4	1-9/16	1-5/16
2	1-5/8	1-5/16	2-1/16	1-13/16
3	NR*	2-3/8	NR*	2-7/8

Light Weight Concrete, Fluted Floor and Form units, Min. Thkns In.

Rating Hr.	Restrained		Unrestrained	
	8K1 Joist (Item 1)	10K1 Joist (Item 1A)	8K1 Joist (Item 1)	10K1 Joist (Item 1A)
1	1-1/8+	3/4	1-1/8+	3/4
1-1/2	1-5/16	3/4	1-3/4	1-5/16
2	2-1/16	1-5/16	2-1/4	1-13/16
3	NR*	2-3/8	NR*	2-7/8

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

Rating Hr.	Restrained		Unrestrained	
	8K1 Joist (Item 1)	10K1 Joist (Item 1A)	8K1 Joist (Item 1)	10K1 Joist (Item 1A)
1	1+	15/16	1+	15/16
1-1/2	1	15/16	1-9/16	1-5/8
2	1-5/8	1-11/16	2-1/16	2-1/4
3	NR*	3-1/16	NR*	3-11/16

Light Weight Concrete, Cellular or Corrugated Form units, Min. Thkns In.

Rating Hr.	Restrained		Unrestrained	
	8K1 Joist (Item 1)	10K1 Joist (Item 1A)	8K1 Joist (Item 1)	10K1 Joist (Item 1A)
1	1-1/8+	15/16	1-1/8+	15/16
1-1/2	1-5/16	15/16	1-3/4	1-5/8
2	2-1/16	1-11/16	2-1/4	2-1/4
3	NR*	3-1/16	NR*	3-11/16

* NR = No Rating.

+ When no bottom chords consist of 1 by 1 by 0.125 in. thick steel angles, the thickness of the spray-applied fire resistive material shall be increased to 13/16 in. on the bottom chord only.

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.

7. Metal Lath — (Optional) — 3/8 in. diamond mesh, expanded steel weighing min 2.5 lb/sq yd, secured to one side of joist using No. 16 SWG steel tie wire located at mid height of every other web. When used, the metal lath is to be fully covered with spray-applied resistive material with no min thickness requirements for material applied onto the lath between chords and between web members.

7A. Glass Fiber Mesh — (Optional, Not Shown) — As an alternate to metal lath (Item 7), min 3/32 in. square mesh, coated fiberglass scrim fabric, weighing a min of 1.9 oz/sq yd, shall be attached to one side of each joist web member. The method of attachment must be sufficient to hold the mesh and fire protection material during application and curing of the material. An acceptable method of attaching the mesh is by embedding the mesh in min 1/4 in. long beads of hot melted glue. The beads of glue shall be spaced max 12 in. OC along the top chord of the joists. Another method of attachment is by the use of 1-1/4 in. long 1/2 in. wide hairpin clips formed from 0.064 in. diam steel wire, alternating from top to bottom of the joist web member.

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