

# BXUV.N826 - 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. N826

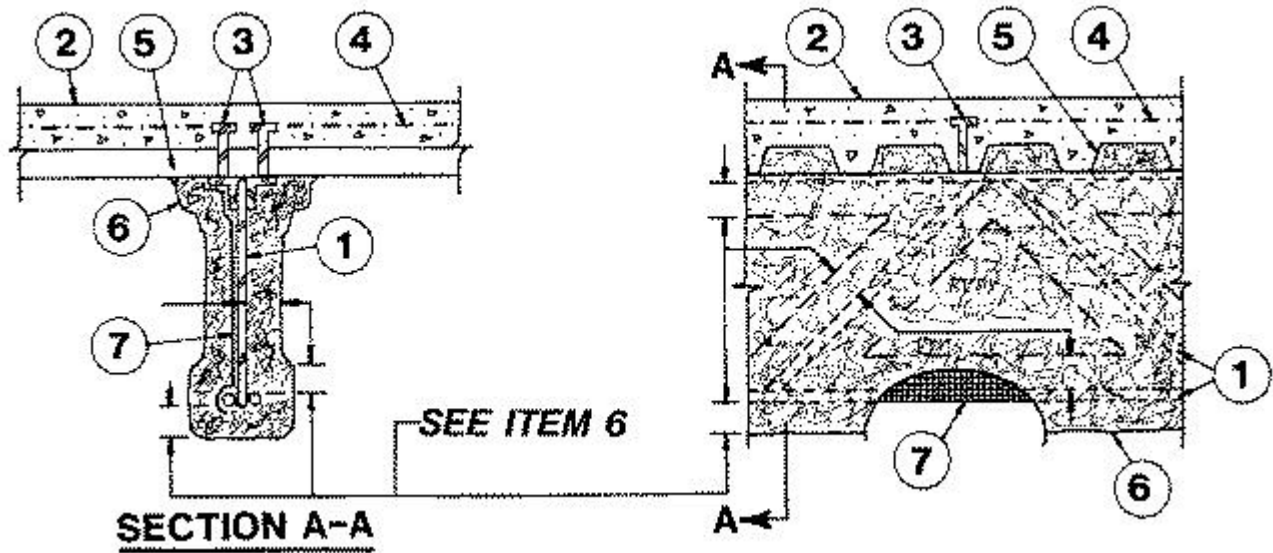
May 07, 2018

**Restrained Beam Rating — 1, 1-1/2, 2 and 3 Hr.**

**Unrestrained Beam Rating — 1, 1-1/2, 2 and 3 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 Joist** — Composite or noncomposite min 12k5 or min depth and weight shall be 12 in. and 7.1 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. Top chords shall consist of two angles measuring 1-1/2 by 1-1/2 by 0.156 in. thick. Bottom chords shall consist of two round bars measuring 0.675 in. in diam. Bearing plates shall consist of two angles measuring 2 by 2 by 0.192 in. thick and shall be min 4-15/16 in. long. The second web member at each end shall consist of 0.654 in. diam round bar. All remaining web members, including the end web members, shall consist of 0.774 in. diam round bars. Bridging per S.J.I. specifications is required when noncomposite joists are used.
2. **Normal Weight or Lightweight 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 joists through the steel floor units. Stud welding, as recommended by the stud manufacturer, should be followed.
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 a 1:1 blend with fluted units.
6. **Spray-Applied Fire Resistive Materials\*** — Applied by spraying with water to a final thickness as shown in the table below. Crest areas of steel floor units shall be filled with Spray-Applied Fire Resistive Materials above the joists. The joist surfaces must be clean and free of dirt, loose scale and oil. When metal lath (Item 7) is used on joist, the protection material is to be applied over lath with no min thickness requirement. Min avg density of 13 pcf and a min ind density of 11 pcf for Types D/C-F, II, or II HS. Min avg and min ind densities of 22 and 19 pcf, respectively, for Type HP. For method of density determinations, refer to Design Information Section, Sprayed Material.

| Restrained & Unrestrained<br>Beam Rating Hr | Min Thkns In. |
|---|---------------|
| 1   | 1-1/4         |
| 1-1/2                                       | 1-11/16       |
| 2   | 2-1/16        |
| 3   | 3-1/4         |

**ISOLATEK INTERNATIONAL** — Type D-C/F, HP, II, or Type II HS investigated for exterior use, Type EBS or Type X adhesive/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 truss using No. 16 SWG steel tie wire located at mid-height of every other web. Both sides of lath must be completely coated with Spray-Applied Fire Resistive Materials with no min thickness requirements.

7A. **Glass Fiber Mesh** — (Optional) - As an alternate to metal lath (Item 7). Min 3/32 in. sq mesh, coated fiberglass scrim fabric, weighing a min of 1.9 oz per sq yd, polypropylene fabric mesh, weighing approximately 1.25 oz per sq yd or equivalent may be used to facilitate spray application. The mesh 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. Suitable methods of attachment include hairpins, 18 SWG galv steel tie wire or hot melted glue. Hairpin clips are nom 1-1/4 in. long by 1/2 in. wide made of 0.064 in. diam steel wire. Hairpin clips or tie wire located near top and bottom and at intermediate points along each web member to firmly secure the fabric to the joist.

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Last Updated on 2018-05-07

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