

# BXUV.G809 - 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

See General Information for Fire-resistance Ratings - ANSI/UL 263

### Design No. G809

July 12, 2018

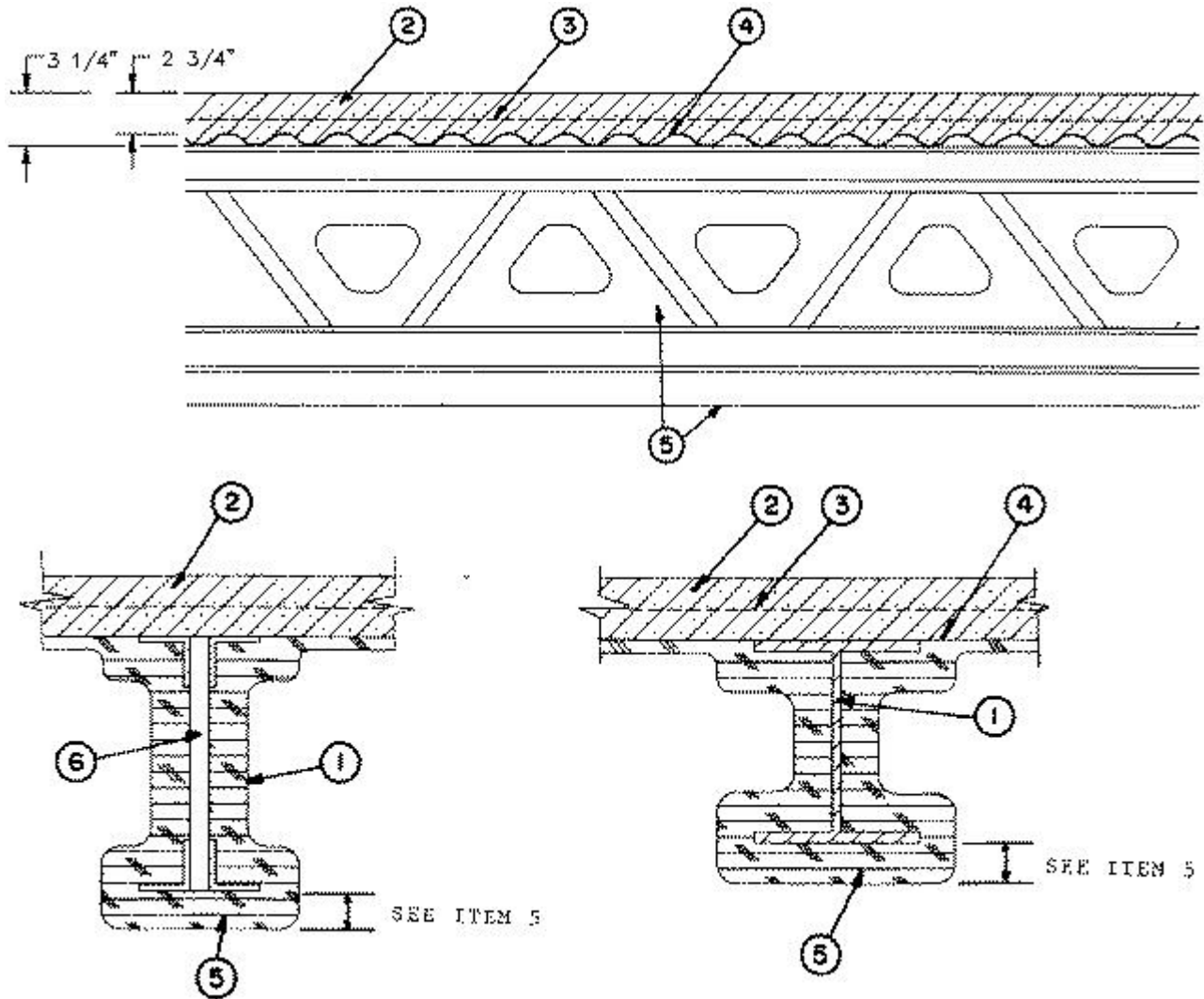
**Restrained Assembly Rating — 1, 1-1/2, 2 or 3 h (See Items 2, 5)**

**Unrestrained Assembly Ratings — 1, 1-1/2, 2 or 3 h (See Items 2, 5)**

**Unrestrained Beam Ratings — 1, 1-1/2, 2 or 3 h (See Item 5)**

**Load Determined by Allowable Stress Design Method or Load and Resistance Factor Design Method published by the American Institute of Steel Construction, or in accordance with the relevant Limit States Design provisions of Part 4 of the National Building Code of Canada — 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. **Beam** — W8x28 min size.

1A. **Steel Joists** — (As an alternate to item 1) - Composite or non-composite min 10k1 or min depth and weight shall be 10 in. and 4.8 lb/ft respectively. May be uncoated or provided with a shop coat of paint. Designed per S.J.I. specifications for a max design yield stress of 50,000 psi (50 ksi). Welded or bolted to end supports. Top chords shall consist of two angles measuring 1-1/4 by 1-1/4 by 0.136 in. thick. Bottom chord shall consist of two angles measuring 1 by 1 by 0.112 in. thick, min. The first diagonal web member at each end shall consist of a min. 0.62 in. diam round bar. All remaining web members shall consist of 0.50 in. diam round bars, min. Bridging per S.J.I. specifications when non-composite joists are used.

2. **Normal Weight or Lightweight Aggregate Concrete** — Normal weight, carbonate or siliceous aggregate concrete, 150 pcf unit weight, 3500 psi compressive strength, vibrated. Lightweight concrete (expanded shale, clay or slate aggregate by rotary-kiln method), 120 pcf unit weight, 3500 psi min compressive strength, vibrated, and an air content of 6 plus or minus percent. For 1, 1-1/2 and 2 h assembly ratings, the 2-3/4 in. concrete topping thickness may be reduced to 2-1/2 in. when non-composite joists are used. The Unrestrained Assembly Rating depends on the type of concrete aggregate and supporting element spacing as shown below.

**Unrestrained Assembly Rating**

	Max Spacing 3 ft, 6 in.	Spacing Greater than 3 ft, 6 in. OC
Lightweight aggregate	1-1/2 h	1-1/2 h
Normal weight aggregate	2 h	1-1/2 h

3. **Welded Wire Fabric** — 6 x 6 in. — W2.0 x W2.0 or 6x6 - 8/8 SWG.

4. **Steel Floor and Form Units\*** — No. 28 MSG min galv corrugated steel, 2-1/2 in. pitch and 1/2. in depth of corrugations. Units welded to each beam or joist, 36 welds per 100 sq/ft of units, with at least one weld at each joint, or **Classified Steel Floor and Form Units\*** —

min 9/16 in. deep, 28 MSG galv or ptd/ptd corrugated deck. Units welded to each beam or joist with 36 welds per 100 sq ft of units, with min one weld at each side joint of units.

**VULCRAFT, DIV OF NUCOR CORP** — Types 0.6 C, 1.0 C or 1.3 C.

**NEW MILLENNIUM BUILDING SYSTEMS L L C** — 24 through 36 in. wide, Types 0.6FD, 1.0FD

4A. **Steel Floor and Form Units\*** — (Not shown) As an alternate to Item 4, Composite 1-1/2 in. deep, 30, 35 or 36 in. wide, galv steel units. Min gauge is 22 MSG. Welded to supports 12 in. OC. Adjacent units button-punched, welded or screwed together 36 in. OC max along side joints. The concrete thickness shall be measured to the top plane of the steel deck.

**NEW MILLENNIUM BUILDING SYSTEMS L L C** — 24 through 36 in. wide, Types 1.5CD, 1.5CDI units may be ptd.

**VULCRAFT, DIV OF NUCOR CORP** — Types 1.5VL, 1.5VLI, 1.5PLVLI.

5. **Spray-Applied Fire Resistive Materials\*** — Applied by spraying with water, in one untamped coat at the thickness shown in the table below, to steel surfaces which are free of dirt, oil or scale. Use of adhesive is optional. Min avg untamped density is 13 pcf with min ind untamped density of 11 pcf for DC/F, II, or Type II HS. Min avg and min ind densities of 22 and 19 pcf, respectively, for Type HP. Tamping is optional. For method of density determination refer to Design Information Section.

Restrained Assembly Rating, Hr	Unrestrained Assembly & Beam Rating, Hr	Min Thkns, In. Deck	Min Thkns Spray Applied Resistive Mtl, In			
			Concrete Type	W8x28 Beam (Item 1)	10k1Joist > 4' OC (Item 1A)	10k1Joist ≤ 4' OC (Item 1A)
1	1	1/2	NW	1/2	15/16	15/16
1-1/2	1-1/2	1/2	NW	13/16	1-5/8	1-3/8
2	1	1/2	NW	1/2	—	—
2	1-1/2	1/2	NW	13/16	—	—
2	2	1/2	NW	1-1/16	2-1/4	1-15/16
3	1-1/2	1/2	NW	13/16	—	—
3	3	1	NW	1-11/16	3-11/16	3-3/16
1	1	1/2	LW	5/8	15/16	15-16
1-1/2	1-1/2	1/2	LW	1	1-5/8	1-3/8
2	1	1/2	LW	5/8	—	—
2	1-1/2	1/2	LW	1	—	—
2	2	1/2	LW	1-7/16	2-1/4	1-15/16
3	1-1/2	1/2	LW	1	—	—
3	3	1	LW	2-1/4	3-11/16	3-3/16

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

6. **Metal Lath** — (Optional) — Metal lath may be used to facilitate the spray application of spray-applied resistive material on steel bar joists and trusses. The diamond mesh, 3/8 in. expanded steel lath, 1.7 to 3.4 lb/sq yd is secured to one side of each steel joist with No. 18

SWG galv steel wire at joist web and bottom chord members, spaced 15 in. O.C. max. When used, the metal lath is to be fully covered with spray-applied resistive material with no min thickness requirements.

7. **Glass Fiber Mesh** — (Optional - Not shown) — As an alternate to metal lath (Item 6), min 3/32 in. sq mesh, coated fiberglass scrim fabric, weighing a min of 1.9 oz per sq yd or, 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.

8. **Horizontal Bridging** — (Not Shown) — Min 1-1/4x1-1/4x1/8 in. thick steel angles for use with non-composite joists (Item 1A). Number and spacing per Steel Joist Institute specifications. Welded to top and bottom chord of the joists. Min thickness of spray-applied resistive material on bridging angles is min thickness on steel joist.

**\* 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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