

BXUV.P815 - 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. P815

February 08, 2019

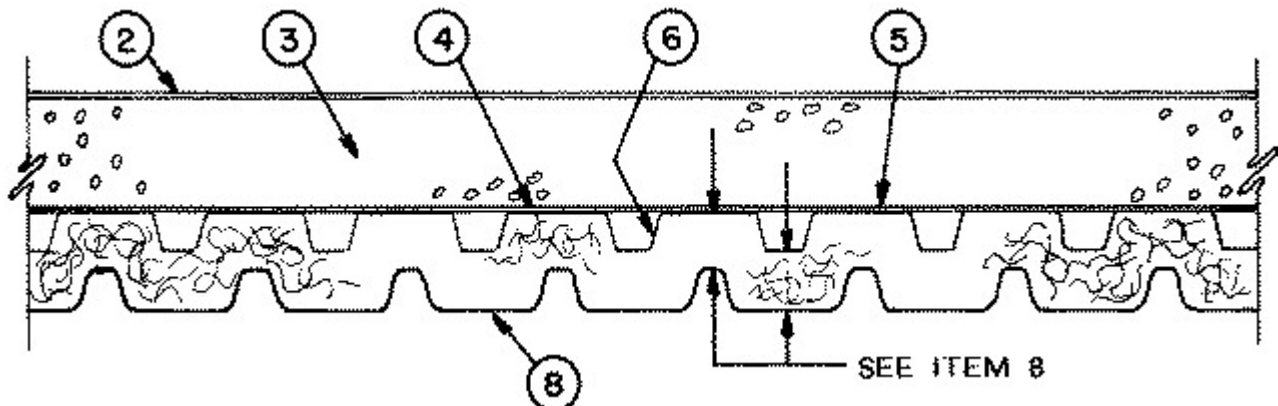
Restrained Assembly Rating- 1, 1-1/2, 2 Hrs (See Item 8)

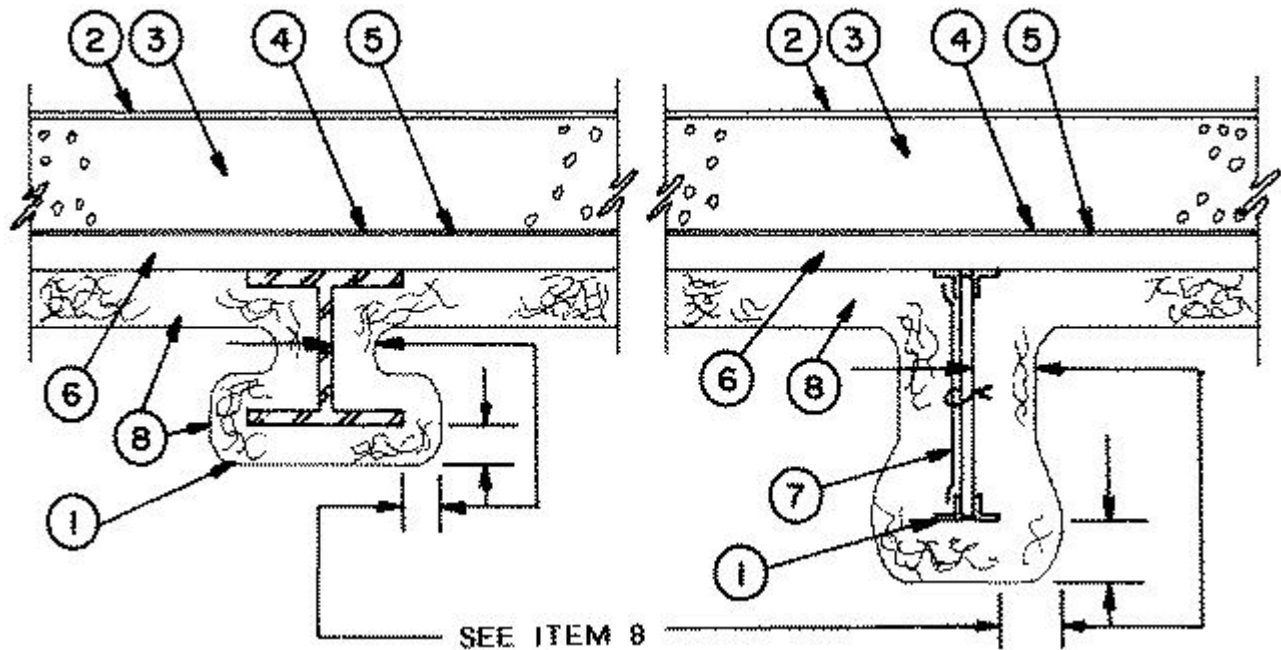
Unrestrained Assembly Rating- 1, 1-1/2, 2 Hrs (See Item 8)

Unrestrained Beam Rating- 1, 1-1/2, 2, 3 Hrs (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 W6x16 min size, or Steel Joist** — 10K1 or 12K3 min size.

As alternate to steel beam, **Joist girders** (Not shown)-20 in. min depth and 13 lb/lin ft min weight.

2. **Roof Covering*** — Consisting of hot mopped or cold application materials compatible with insulation(s) described herein which provide Class A, B or C coverings. See Roofing Materials and Systems Directory-Roof Covering Materials.

2A. **In lieu of Item 2, roof covering consisting of single-ply Roofing Membrane*** — that is either ballasted, adhered or mechanically attached as permitted under the respective manufacturer's Classification. See Fire Resistance Directory — Roofing Membranes (CHCI).

2B. **Metal Roof Deck Panels (Not shown)** — In addition to or in lieu of Items 2 or 2A, the roof covering may consist of a mechanically fastened metal roof deck panel assembly. See Fire Resistance Directory — Metal Roof Deck Panels (CETW).

3. **Roof Insulation** —

A. **Mineral and Fiber Board*** — Applied in one or more layers with adhesive applied between each layer and to vapor retarder or deck if vapor retarder is not used. When more than one layer is required, joints of adjacent layers are staggered 6 in. min. Min thickness 1 in.

Note — For 2 h rating, fiber thickness on deck must be increased to 2-1/4 in. when this insulation is used.

GAF — GAFTEMP Perlite.

JOHNS MANVILLE

ROCKWOOL — MonoBoard™, MonoBoard™ Plus, "MonoBoard Plus S", TopRock®DD, TopRock® DD Plus or TopRock DD Plus S.

SOPREMA INC — SopraRock®DD and SopraRock®DD Plus.

4. **Adhesive*** — Used with vapor retarder and roof insulation. Applied in nominal 1/2 in. wide ribbons at a rate of 0.4 gal per 100 sq ft. In lieu of adhesive, the first layer of roof insulation may be secured with asphalt applied to a min 50 percent of the crest surface at a rate of 12 to 15 lb per 100 sq ft or with mechanical fasteners (described under Item 2A).

See **Adhesive (BYWR)** category for names of manufacturers.

4A. **Adhesive* -(Optional)** — (Bearing the UL Classification Marking for Roof Systems (TGFU)) - The vapor retarder, or the first layer of roof insulation may be secured with adhesive to the steel crest surfaces. Also used to attach the first layer of insulation to vapor retarder and each additional layer of insulation. Applied at a max rate of 19.8 g/ft². When FAST 100 adhesive is used, additional **Spray-Applied Fire Resistance Materials* (CHPX)** is required on the deck for the 1-1/2 and 2 hr Unrestrained Assembly Ratings. The thickness specified for the deck shall be increased by 1/16 in. for 1-1/2 hr Unrestrained Assembly Rating and 1/4 in. for 2 hr Unrestrained Assembly Rating.

CARLISLE SYNTEC INCORPORATED — FAST 100

5. **Vapor Retarder — Sheathing Material*** — Optional — Applied with adhesive to steel deck, overlapped approx 2 in. on sides.

6. **Steel Roof Deck** — (Unclassified) — Min 1-1/2 in. deep. 24 in. wide, painted or galv, fluted steel deck. Min gauge is No. 22 MSG. Flutes approximately 6 in. OC, crests approximately 3-1/2 in. wide. Painted steel deck units require the use of rib lath (Item 7B). Attached to supports with welds spaced 12 in. OC. Adjacent units button-punched or welded together at midspan between supports; or, **Classified Steel Floor and Form Units*** — 1-1/2 in. deep, 24, 30 or 36 in. wide, painted or galv, fluted steel deck. Min gauge is 22 MSG. Unless otherwise noted for specific unit types, steel deck requires the use of rib lath (Item 7B). Attached to supports with welds spaced 12 in. OC. Adjacent units button-punched or welded together at midspan between supports.

ASC STEEL DECK, DIV OF ASC PROFILES L L C — 24 through 36 in. wide, Types DGB Hi-Form, B Hi-Form, DGB, B, DGN Hi-Form, N Hi-Form, DGN, and N. All units may be galvanized or Prime Shield™.

CANAM STEEL CORP — Type P-3606 or P-3615

MARLYN STEEL DECKS INC — Types B, F, N, NV.

NEW MILLENNIUM BUILDING SYSTEMS L L C — Types BD, FD, ND.

VERCO DECKING INC - A NUCOR CO — Deck types PLB, HSB, PLN3, HSN3, PLN, N; FORMLOK™ deck types PLB, B, PLN3, N3, PLN, N. Units may be galvanized or phos./ptd.

VULCRAFT, DIV OF NUCOR CORP — Types 1.5A, 1.5B, 1.5BI, 1.5PLB, 1.5F, 3N, 3NI, 3.0PLN, 3NL-32, 3NI-32, 3PLN-32, BW, High Strength B, High Strength BW, N. Rib lath is not required when galv. Types 1.5A, 1.5B, 1.5BI, 1.5PLB, 1.5F, 3N, 3NI, 3.0PLN, 3NL-32, 3NI-32, 3PLN-32, BW, High Strength B, High Strength BW, and N units are used.

7. **Metal Lath** — Optional — Metal lath used to facilitate the spray application of the Spray-Applied Fire Resistive Material to the steel joists. Diamond mesh, 3/8 in. expanded steel, min 1.7 lb/sq yd fastened to one side of joists using No. 18 SWG steel wire, located at midheight of every other member or 18 in. OC whichever is less. Both sides of lath must be completely coated with Spray-Applied Fire Resistive Material, but with no min thickness requirements.

7A. **Glassfiber Mesh** — 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 the protection material in contact with the joist during its application and curing. 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 a max 12 in. O.C. along the top chord of the bar joists. Another method of attachment is by 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 members.

7B. **Metal Lath** — Not shown — Required on painted steel roof deck. Rib lath, galv or painted, min. 2.5 lb/sq yd, with ribs facing down, fastened to deck using No. 8 by 1/2 in. wafer head self-drilling, self-tapping coated steel screws spaced max 15 in. OC in both directions with lath edges overlapped approx 3 in.

8. **Spray-Applied Fire Resistive Materials*** — Applied by spraying with water in one or more coats, to final untamped thicknesses shown below. Steel surfaces must be free of dirt, oil and loose scale. Use of adhesive is required. For method of density determination, refer to Design Information Section, Sprayed Material.

Minimum Thickness, In.

Restrained & Unrestrained Assembly Rating Hr	Unrestrained Beam Rating Hr	On Deck #	On Beam	On 12K3 Joist	On 10K1 Joist
1	1	1-5/16, 1-1/8+	9/16	1-1/2	1-1/2
1-1/2	1-1/2	1-9/16, 1-1/2+	15/16	1-7/8	2-1/2
2	2	2-1/4	1-3/8	2-1/4	2-1/2
2	3	2-1/4	1-1/2	NR	NR

#The required minimum thickness of Spray-Applied Fire Resistive Materials on the steel deck is increased by 1/16 in. for 1-1/2 hr Unrestrained Assembly Rating and 1/4 in. for 2 hr Unrestrained Assembly Rating when Item 4A is used.

+ — Lesser thickness applicable when span of structural supports does not exceed 7.0 ft.

NR = No Rating.

ISOLATEK INTERNATIONAL — Type D-C/F, Type II, or Type II HS, with a min avg density of 13 pcf and min ind density of 11 pcf, Type HP, min avg and min ind densities of 22 and 19 pcf, respectively, Type EBS or Type X adhesive/sealer.

*** 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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