



Design No. P930
BXUV.P930
Fire-resistance Ratings - ANSI/UL 263

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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.
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BXUV - Fire Resistance Ratings - ANSI/UL 263

BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

[See General Information for Fire-resistance Ratings - ANSI/UL 263](#)

[See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada](#)

Design No. P930

July 02, 2015

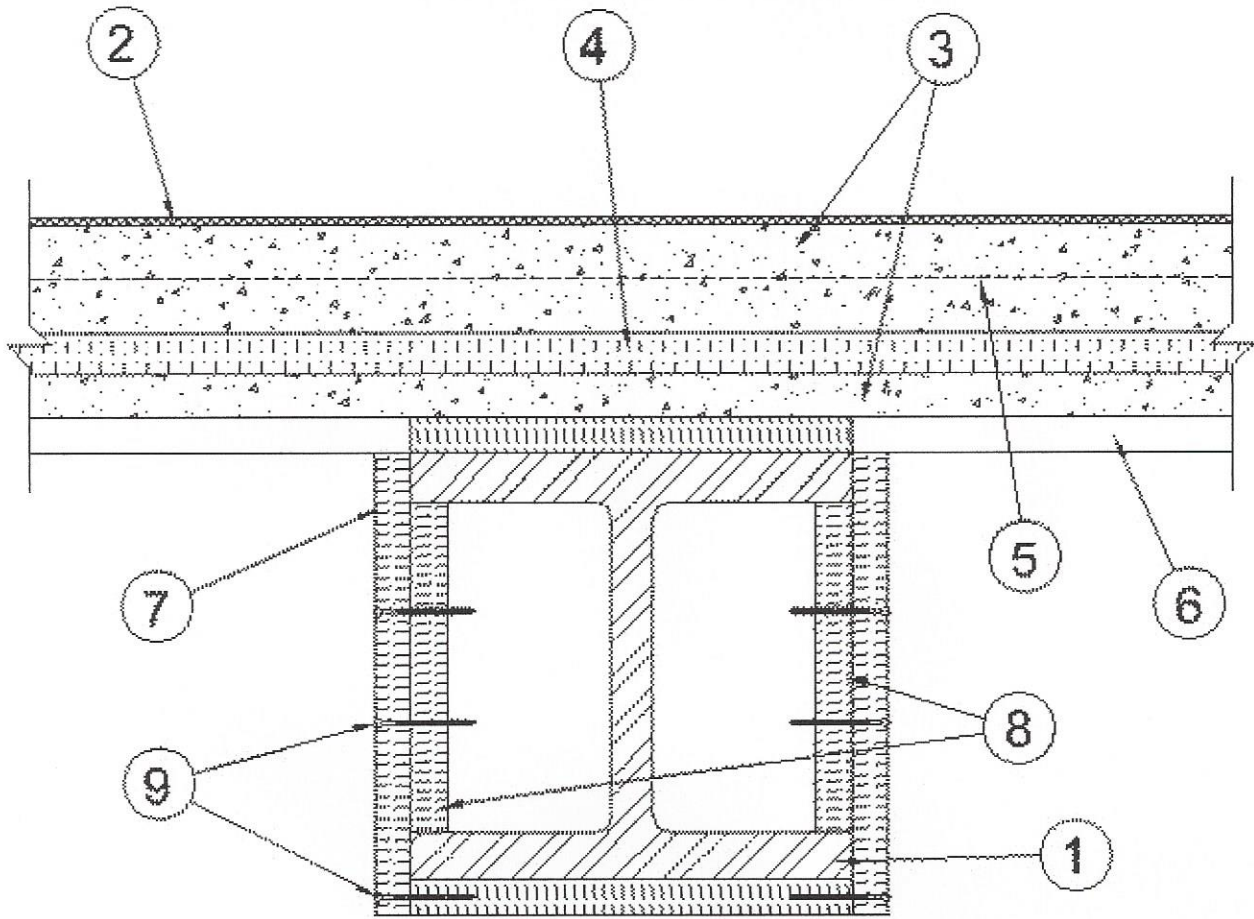
Restrained Assembly Rating — 1, 1-1/2 or 2 Hr (See Item 6, 7)

Unrestrained Assembly Rating — 0 Hr (See Item 6)

Unrestrained Beam Rating — 1, 1-1/2 or 2 Hr (See Item 7)

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. **Supports** — W8x28 min size steel beam; or steel joists welded or bolted to end supports.
- 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 (TEVT).
- 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).
- 3. **Insulating Concrete** — Various types of insulating concrete prepared and applied in the thickness indicated below:
 - A. **Vermiculite Concrete** — 6 cu ft of Vermiculite Aggregate* to 94 lbs of Portland cement and 0.06 to 0.5 lb of air entraining agent. Min thickness of slurry coat (vermiculite concrete topping thickness as measured from top of steel roof deck to bottom of foamed plastic) shall be as shown in the following table. Min topping thickness above foamed plastic is 2 in. Max topping thickness determined by job site conditions.

Restrained Assembly Rating Hr	Min Steel Roof Deck Depth In.	Min "Slurry" Coat Thkns In.
1-1/2	9/16	5/16
1-1/2	15/16	1/8
2	9/16	1/2
2	15/16	5/16
2	1-5/16	1/8

See Aggregate (CJZZ) category for names of Classified Companies.

B. **Cellular Concrete — Roof Topping Mixture*** — Foam concentrate mixed with water and Portland cement per manufacturer's specifications. Cast dry density and 28-day compressive strength of min 190 psi as determined in accordance with ASTM C495-66. A 1/8 in. min thickness slurry coat of cellular concrete above top plane of steel deck is required. The cellular concrete topping thickness, above 2 in. min thickness foamed plastic, shall be 2 in. min. The combined thickness of slurry coat plus concrete topping shall not be less than 2-3/8 in.

CELCORE INC — Cast dry density of 31 (+ or -) 3.1 pcf

AERIX INDUSTRIES — Cast dry density 37 (+ or -) 3.0 pcf.

ELASTIZELL CORP OF AMERICA — Type II. Mix #1 of cast dry density 39 (+ or -) 3.0 pcf, Mix #2 of cast dry density 40 (+ or -) 3.0 pcf, Mix #3 of cast dry density 47 (+ or -) 3.0 pcf.

LITE-CRETE INC — Cast dry density of 29 (+ or -) 3.0 pcf

C. Perlite Concrete — 6 cu ft of Perlite Aggregate* to 94 lb of Portland cement and 1-1/2 pints of air entraining agent. Thickness of perlite concrete topping to be 2 in. min as measured to the top plane of the foamed plastic. Min thickness between the top of steel deck and the bottom of the foamed plastic shall be 1/8 in. See Perlite Aggregate (CFFX) Category in the Fire Resistance Directory for names of manufacturers.

D. Cellular Concrete — Roof Topping Mixture* — Foam Concentrate mixed with water, Portland cement and UL Classified Vermiculite Aggregate per manufacturer's application instructions. Cast dry density of 33 (+ or -) 3.0 pcf and 28-day compressive strength of min 250 psi as determined in accordance with ASTM C495-86. A 1/8 in. min slurry coat shall be employed below the foamed plastic (Item 4). The cellular concrete topping thickness, above the foamed plastic, shall be 2 in. thickness, above the foamed plastic, shall be 2 in. min. The combined thickness of slurry coat plus concrete topping shall not be less than 2-3/8 in.

AERIX INDUSTRIES — Cast dry density 37 (+ or -) 3.0 pcf.

4. Foamed Plastic* — for Vermiculite concrete applications — Nom 24 by 48 by max 8 in. thick polystyrene foamed plastic insulation boards having a nom density of 2.5 pcf max. Each insulation board shall contain holes and/or slots.

4A. Foamed Plastic* — Nom 24 by 48 by max 8 in. thick polystyrene foamed plastic insulation boards having a density of 1.0 to 1.1 pcf, encapsulated within cellular concrete topping (Item 2). Each insulation board shall contain six nom 3 in. diam holes oriented in two rows of three holes each with the holes spaced 12 in. O.C., transversely and 16 in. O.C. longitudinally.

See **Foamed Plastic*** (BRYX) category in Building Materials Directory or **Foamed Plastic*** (CCVW) category in Fire Resistance Directory for list of manufacturers.

5. Wire Mesh — (Optional for 1 and 1-1/2 hr ratings) — No. 19 SWG galv steel wire twisted to form 2 in. hexagons. In addition, straight 16 SWG galv steel woven into mesh and spaced 8 in. apart for stiffness. Mesh installed without attachment perpendicular to supports and overlapped 6 in. at the sides. As an alternate, 4x8-12/14 SWG or 2x2-14/14 SWG welded wire fabric may be used.

6. Steel Roof Deck — (Unclassified) — Noncomposite design, vented or nonvented units, 9/16, 15/16 or 1-5/16 in. deep corrugated steel form units, nom 24 to 36 in. wide. When 9/16 in. deep units are used, their loadings shall be limited to produce a 75 percent max bending stresses in the steel, and the Restrained Assembly Rating shall not exceed 1-1/2 H. Supports spaced not over 4 ft, 0 in. O.C. when 9/16 in. deep, min 28 MSG steel roof deck is used. Supports spaced not over 6 ft, 0 in. O.C. when 1-5/16 in. deep, min 24 MSG steel roof deck is used. Welded to supports with 3/8 in. puddle welds, through weld washers, spaced 15 in. O.C. Adjacent units overlapped one corrugation. For clear spans not more than 7 ft, 8 in. the Unrestrained Assembly Rating Equals the Restrained Assembly Rating. **Classified Steel Floor and Form Units*** — Noncomposite design, 1-5/16 or 1-1/2 in. deep, nom 24 to 36 in. wide, galv corrugated or fluted steel deck. Min gauge for corrugated deck is 24 MSG, min for fluted is 22 MSG. Supports spaced not over 8 ft 0 in., OC. Welded to supports 15 in. OC max.

Adjacent corrugated units overlapped one corrugation along each side. Fluted units button-punched or welded together 36 in. OC along side.

ASC STEEL DECK, DIV OF ASC PROFILES L L C — Types C1.4-32, CP-32 Ventform, CP-32, N-32, NN-32, and DGN-32.

CANAM STEEL CORP — Types P-3606, P-3615, or P-3012.

CANAM STEEL CORP — Types B, UFX, UFXV, UFX-36, UFXV-36

NEW MILLENNIUM BUILDING SYSTEMS L L C — Consoliform and Comvent Types EHD, HD, S, SD. Media-Dek Type (vented and nonvented) and Media-Dek Type 2, Type R

EPIC METALS CORP — Type Metricform

H H ROBERTSON — Type QL-3 or Type 3 with or without up-punched integral hanger tabs

ROOF DECK INC — Types A, B-1, B-2, EHD Multi-Rib or F

VERCO DECKING INC - A NUCOR CO — Types PLB, B, 2"B, 2"B Ventlok, Vercor, Vercor Ventlok, PLW2, W2, System 80, PLN, PLN3, N and N3.

VULCRAFT, DIV OF NUCOR CORP — Types 1.0C, 1.0CSV, 1.3C, 1.3CSV, 1.5C, 2C, 3C, 1.5B, 1.5BI, 1.5PLB, 3N, 3N1, 3.0PLN.

7. Mineral and Fiber Boards — Boards cut in various widths to be compatible with the size of beam being protected. Boards placed parallel with the flange of the beams are cut the width of the flange. Boards placed parallel with the web of the beams are cut the width of the beam (web side) plus twice the board thickness. The voids created by the flutes above the beam to be filled with mineral wool batts having a nom density of 4 lb per cu ft.

Restrained Assembly Rating Hr	Unrestrained Beam Rating Hr	Board Thkns on W8x28 Beam In.
1	1	3/4
1-1/2	1-1/2	3/4
2	1	3/4

ALBI MFG, DIV OF STANCHEM INC — Type Dri-Clad.

8. Noggings — Min 1-1/2 in. thick, pieces of mineral and fiber board (See Item 2). Cut to friction fit between beam flanges; located at horizontal butted joints of adjacent mineral and fiber board sections (Item 2) on the web sides of the beam.

9. Fasteners — The boards are fastened to the noggings and to each other by means of spiral screw type fasteners, spaced a max of 4-6 in. OC. The fasteners are installed on both sides of horizontal joints.

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