

BXUV.P721 - 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. P721

October 18, 2017

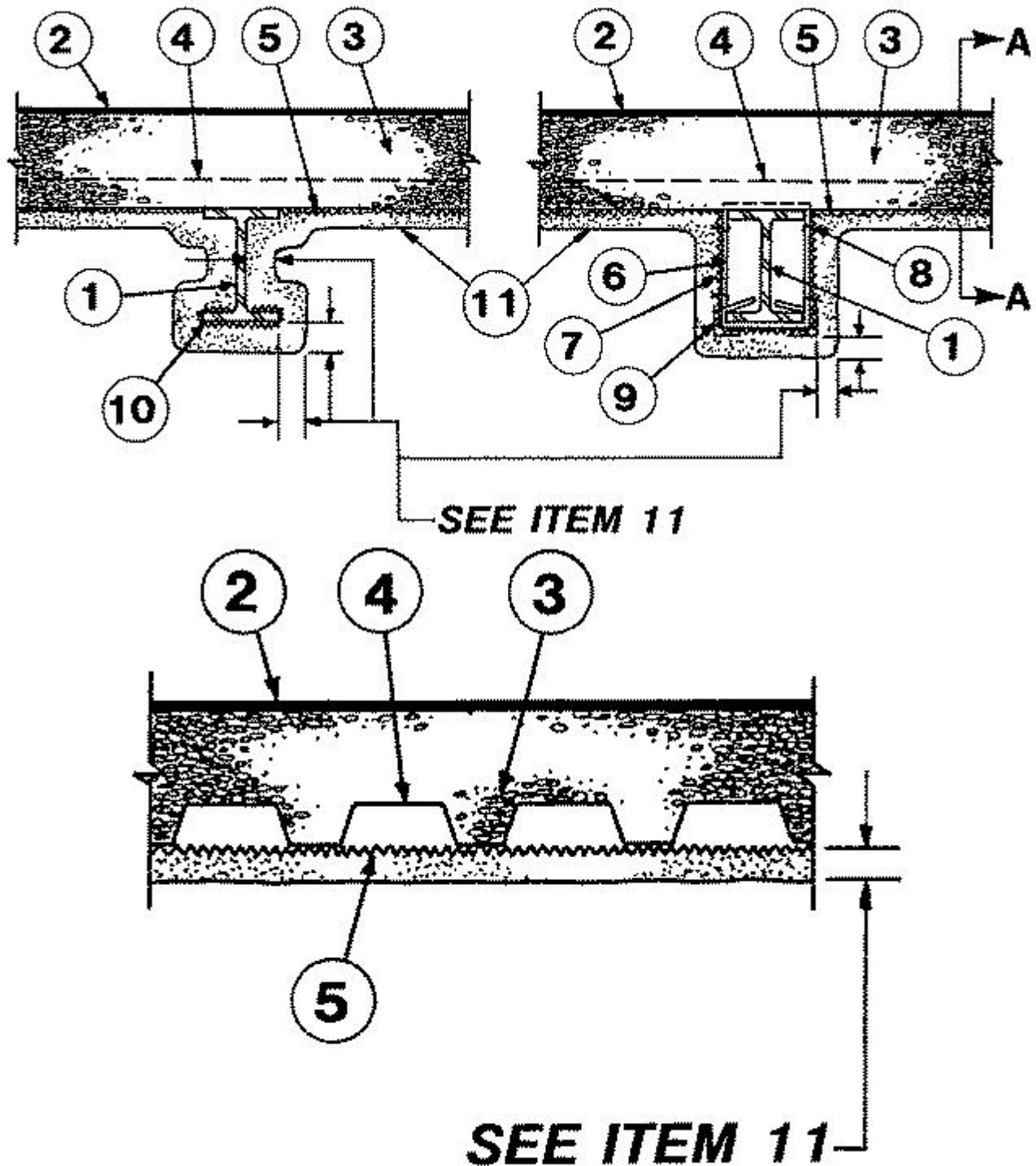
Restrained Assembly Rating — 1 Hr.

Unrestrained Assembly Rating — 1 Hr.

Unrestrained Beam Rating — 1 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.**



SECTION A-A

1. **Steel Beam** — W12x16 min size.

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

A) 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. **Roof Insulation** — Compact thickness of 3-1/2 to 7-1/2 in. Dry mixture consisting of 12 cu ft of perlite aggregate* and 90 lb of hot asphalt conforming to ASTM D312-78, Type III. Resulting mixture spread loosely and compacted to approximately 70 percent of original

volume. Compact density of 30 pcf max. See Fire Resistance Directory — **Perlite Aggregate*** (CFFX) for list of manufacturers.

4. **Steel Deck** — (Unclassified) — Min 1-1/2 in. deep, No. 18 MSG galvanized fluted deck. Flutes approx 6 in. OC, crests approx 3-1/2 in. wide. Attached to supports with welds 12 in. OC. Max adjacent units fastened together with No. 14 by 3/4 in. long, hex-head self-tapping steel screws 18 in. OC max. **Classified Steel Floor and Form Units*** — Noncomposite, 1-1/2 in. deep, galv units, min gauge is 22 MSG. Welded to supports with welding washers 12 in. OC. Side lap joints of adjacent units welded or secured together with No. 12 by 1/2 in. Self-drilling, Self-tapping steel screws midway between steel joists.

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

5. **Metal Ribbed Lath** — 3/8 in. ribbed, expanded steel weighing 3.4 lb per sq yd. Secured to underside of the steel deck (ribs upward) with S-12 by 3/8 in. long panhead, self-tapping steel screws spaced 12 in. O.C. longitudinally and 24 in. O.C. laterally. Steel screws fitted with 1/2 in. diameter steel washers. Lath lapped 1 in. min at ends and butted at sides.

6. **Lath Hangers** — No. 9 SWG steel wire wrapped completely around beam with ends overlapping beneath beam and secured by bending ends around beam's bottom flange edges toward beam's web 2 in. min. Spaced 27 in. O.C. max.

7. **Metal Lath** — (Optional) — Diamond mesh, expanded steel weighing 3.4 lb per sq yd. Wrapped round beam and secured to lath hangers with tie wire.

8. **Tie Wire** — No. 18 SWG galv steel wire; used to fasten lath to lath hangers. Space 6 in. O.C. max.

9. **Corner Bead** — (Optional) — No. 25 MSG galv expanded steel corner bead. May be used in conjunction with beam cage. When used, placed over lower corners of beam cage and attached to metal lath with tie wire spaced 18 in. O.C.

10. **Reinforcing Mesh or Metal Lath** — (Optional) — No. 20 SWG galv steel wire meshed to form 1 in. hexagons or alternately, expanded steel lath weighing 3.4 lb per sq yd. Secured to beam by bending tightly around the bottom flange, extending 2 in. min toward beams's web.

11. **Spray-Applied Fire Resistive Materials*** — Applied by mixing with water and spraying in multiple coats to final thicknesses shown in the table below. Steel surfaces to be sprayed shall be clean and free of dirt, oil and loose scale. Min average density of 44 pcf, min individual density of 40 pcf.

For method of density determination, refer to Design Information Section, Sprayed Material.

Restrained Assembly Rating Hr	Unrestrained Assembly Rating Hr	Unrestrained Beam Rating Hr	Spray Applied Fire Resistive Mtl Thk In.		
			on Deck	w/Beam Cage	on Beam w/o Beam Cage
1	1	1	1	1-5/16	1-5/16

GREENTECH THERMAL INSULATION PRODUCTS MFG CO L L C — Type M-II. Investigated for exterior use.

ISOLATEK INTERNATIONAL — Type M-II. Investigated for exterior use.

NEWKEM PRODUCTS CORP — Type M-II. Investigated for exterior use.

11A. **Spray-Applied Fire Resistive Materials*** — Applied by mixing with water. Trowel applied in multiple coats to final thicknesses shown in the table below. Steel surfaces to be sprayed shall be clean and free of dirt, oil and loose scale. Min average density of 44 pcf, min individual density of 40 pcf.

For method of density determination, refer to Design Information Section, Sprayed Material.

Restrained Assembly Rating Hr	Unrestrained Assembly Rating Hr	Unrestrained Beam Rating Hr	Spray Applied Fire Resistive Mtl Thk In.		
			on Deck	w/Beam Cage	on Beam w/o Beam Cage
1	1	1	1	1-5/16	1-5/16

GREENTECH THERMAL INSULATION PRODUCTS MFG CO L L C — Type TG. Investigated for exterior use.

ISOLATEK INTERNATIONAL — Type TG. Investigated for exterior use.

NEWKEM PRODUCTS CORP — Type TG. Investigated for exterior use.

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