

BXUV.J708 - 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. J708

October 17, 2017

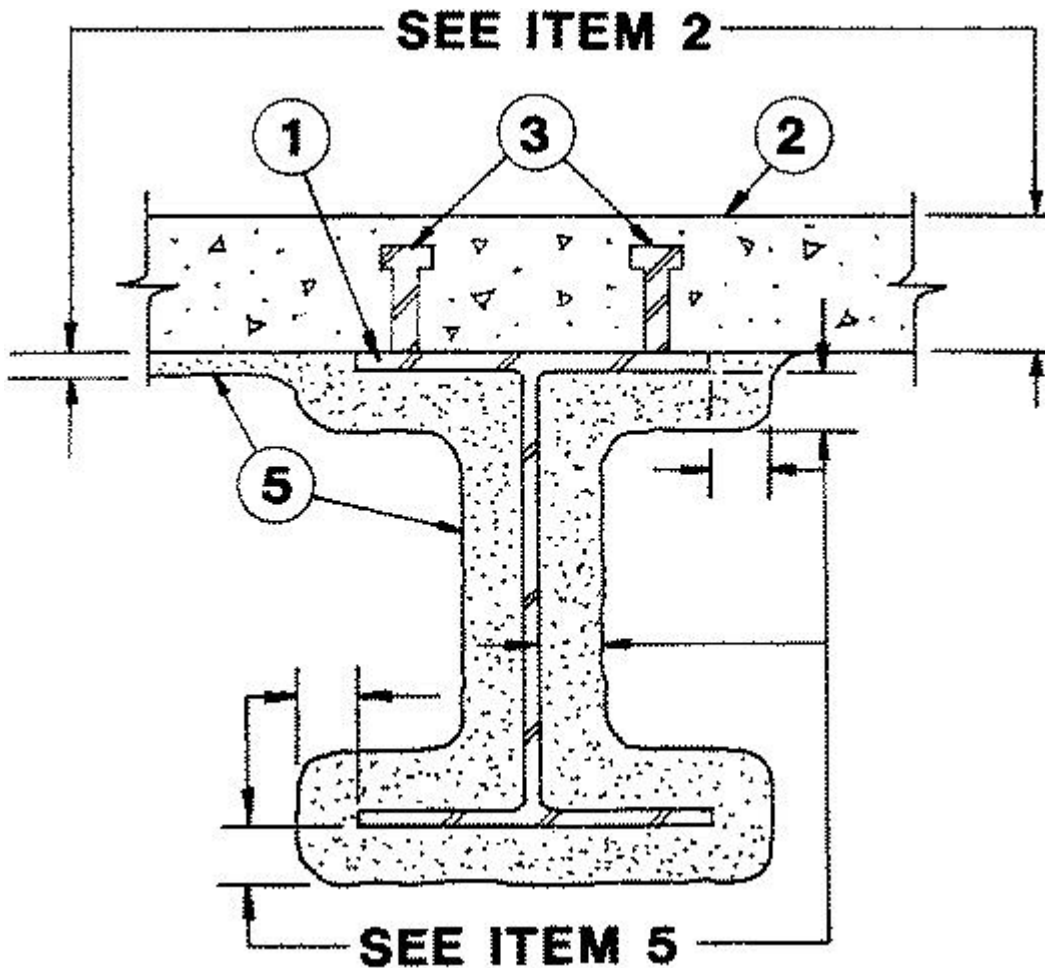
Restrained Assembly Rating — 1, 1-1/2, 2 or 3 h (See Items 2, 5)

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

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

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. **Beam** — W8x28 min size.

2. **Normal Weight or Lightweight Concrete** — Normal weight concrete carbonate or siliceous aggregate, 145 plus or minus 3 pcf unit weight, 3500 psi compressive strength, vibrated. Lightweight concrete, expanded shale or slate aggregate by rotary-kiln method, or expanded clay aggregate by rotary-kiln or sintered-grate method: 3000 psi compressive strength, vibrated, 4 to 7 percent entrained air, unit weight 105 pcf plus or minus 3.

Min Spray Applied Fire Resistive Mtl Thkns In.

Restrained & Unrestrained Assembly Rating Hr	Normal Weight 5 In. Thk Concrete Slab	Normal Weight 6-1/4 In. Thk Concrete Slab	Lightweight 5 In. Thk Concrete Slab
1, 1-1/2, 2	0	0	0
3	3/8	0	0

For the unprotected slab the min concrete cover below the reinforcements shall vary according to the Restrained and Unrestrained Assembly Rating and the type of concrete aggregate as follows:

Restrained Assembly Rating Hr	Unrestrained Assembly Rating Hr	Min Thkns of Concrete Cover In.
1, 1-1/2 or 2	1 or 1-1/2	1
2 or 3	2	1
3	3	1-5/8*

*For slabs with max spans of 10 ft the min cover thickness shall be 1 in.

3. **Shear Connector** — (Optional) — Studs 3/4 in. diam, headed type or equivalent per AISC specifications. Welded to top flange of beam.

4. **Reinforcing Steel** — (Not Shown) — Min No. 3 (3/8 in. diam) deformed bars, either grade 40 or 60. Min areas of reinforcing steel must be provided in accordance with the latest (ACI) Specifications.

5. **Spray-Applied Fire Resistive Materials*** — See table below for appropriate thicknesses. Prepared by mixing with water and spray-applied in one or more coats to beam surfaces or bottom side of concrete slab (if slab to be protected) which must be clean and free of dirt, loose scale, and oil. Use of Type PC Pre-coat is required to the slab (if slab to be protected) prior to the application of Type 300, 300AC, 300ES, 300HS, 300N, SB, 3000, 3000ES, 400AC or 400ES. Type PC Pre-coat shall be applied to cover approx 70 percent of the surface. Thickness of Type PC Pre-coat is included in the total thickness of the protection material Min average and min individual density of 15 and 14 pcf, respectively, for Types 300, 300AC, 300ES, 300HS, 300N, 3000, 3000ES and SB. For Types 400AC and 400ES min average and min individual density of 22 and 19 pcf, respectively. For method of density determination, see Design Information Section, Sprayed Material.

Restrained Assembly Rating Hr	Unrestrained Assembly Rating Hr	Unrestrained Beam Rating Hr	Thkns on Beam In.
1	1	1	5/16
1-1/2	1	1	5/16
2	1	1	5/16
2	1-1/2	1-1/2	1/2
2	2	2	11/16
3	1-1/2	1-1/2	1/2
3	2	2	11/16
3	3	3	1-1/16

The thicknesses of Spray-Applied Fire Resistive Materials shown in the table below are applicable when the thickness applied to the beam's lower flange edges is reduced to one half that shown in the table.

Restrained Assembly Rating Hr	Unrestrained Assembly Rating Hr	Unrestrained Beam Rating Hr	Thkns on Beam In.
1	1	1	3/8
1-1/2	1	1	3/8
2	1	1	3/8
2	1-1/2	1-1/2	9/16
2	2	2	3/4
3	1-1/2	1-1/2	9/16
3	2	2	3/4
3	3	3	1-3/16

BERLIN CO LTD — Types 300, 300ES, 300N or SB.

GREENTECH THERMAL INSULATION PRODUCTS MFG CO L L C — Types 300, 300AC, or 400AC.

ISOLATEK INTERNATIONAL — Types 300, 300AC, 300ES, 300HS, 300N, SB, 400AC, 400ES, 3000, 3000ES and PC.

NEWKEM PRODUCTS CORP — Types 300, 300ES, 300N, and SB.

5A. **Spray-Applied Fire Resistive Materials* (As an alternate to Item 5)** — See table below for appropriate thicknesses. Prepared by mixing with water and spray-applied in one or more coats to beam surfaces or bottom side of concrete slab (if slab to be protected) which must be clean and free of dirt, loose scale, and oil. Use of Type PC Pre-coat is required to the slab (if slab to be protected) prior to the application of Type 300TW or 400. Type PC Pre-coat shall be applied to cover approx 70 percent of the surface. Thickness of Type PC Pre-coat is included in the total thickness of the protection material. Min average density of 18 pcf with min individual 17 pcf for Type 280. Min average and min individual density of 17.5 and 16 pcf, respectively, for Types 300TW. Min average and min individual density of 22 and 19 pcf, respectively, for Type 400. For method of density determination, see Design Information Section, Sprayed Material.

GREENTECH THERMAL INSULATION PRODUCTS MFG CO L L C — Type 400.

ISOLATEK INTERNATIONAL — Types 280, 300TW or 400.

NEWKEM PRODUCTS CORP — Types 400.

*** 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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