UL Product iQ™

BXUV.J809 - 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. J809

May 07, 2018

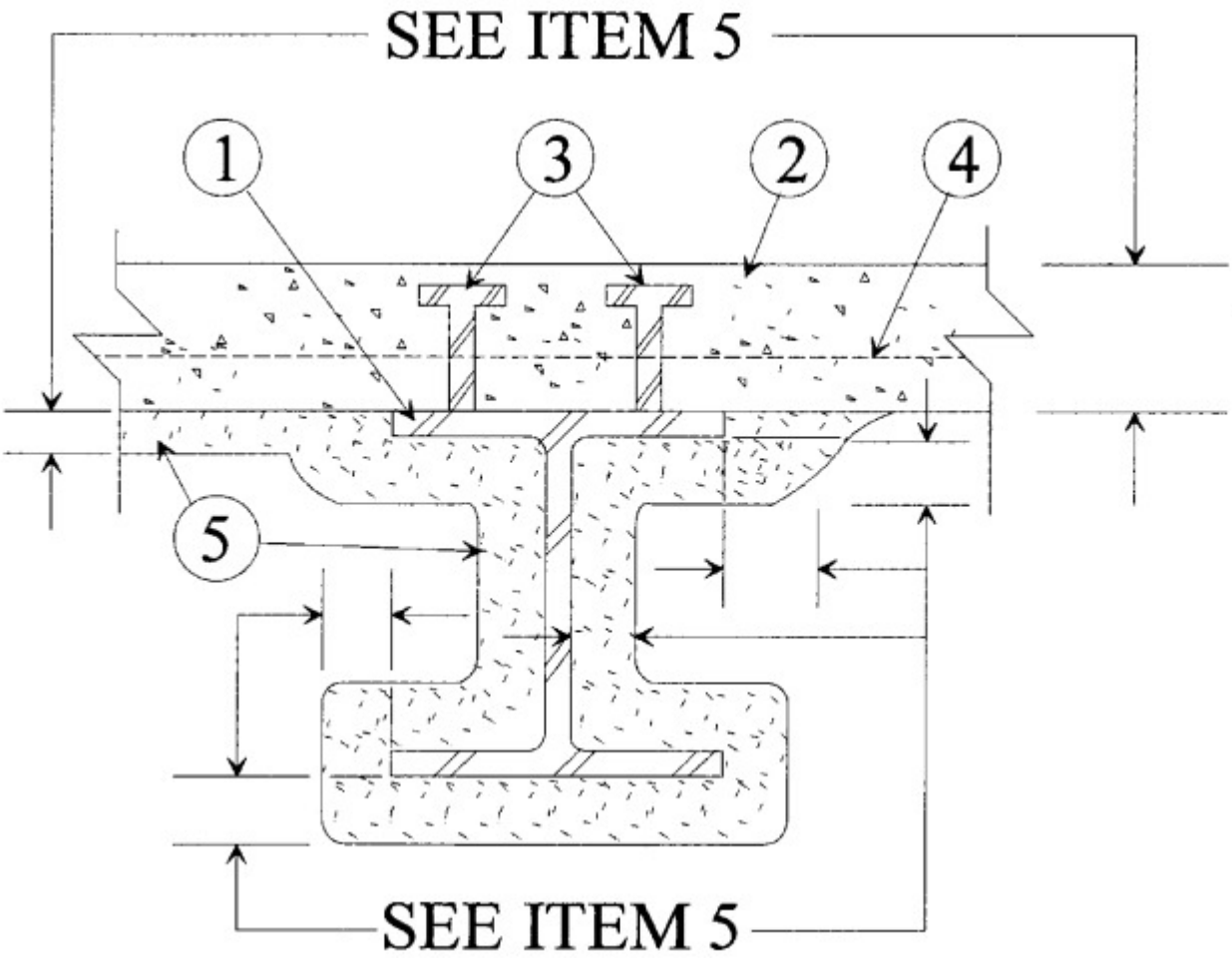
Restrained Assembly Ratings — 1-1/2, 2, 3 or 4 Hr (See Items 5, 5A and 5B)

Unrestrained Assembly Ratings — 1-1/2, 2, 3 or 4 Hr (See Items 5, 5A and 5B)

Unrestrained Beam Ratings — 1-1/2, 2, 3 or 4 Hr (See Items 5, 5A and 5B)

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 Concrete —** Normal weight concrete, carbonate or siliceous aggregate, 145 plus or minus 3 pcf unit weight, 3500 psi Compressive Strength, vibrated. Thickness of the slab shall vary according to the Restrained and/or Unrestrained Assembly Rating, the type of aggregate, and the thickness of the Spray-Applied Fire Resistive Materials protection of the bottom of the slab, as shown in Items 5. For ratings up to 2 h, the min concrete cover shall be 3/4 in. For the 3 and 4 h ratings, the min concrete cover shall be 1 in.

3. **Shear Connector —** (Optional) Studs 3/4 in. diam, headed type or equivalent per AISC specifications.

4. **Reinforced Steel —** (Not shown) — Min No. 3 (3/8 in. diam) deformed bars. Min areas of reinforcing steel must be provided in accordance with the latest (ACI) specifications.

5. **Spray-Applied Fire Resistive Materials* —** Applied by spraying with water, to the final thicknesses shown below. Beam and concrete surfaces must be clean and free of dirt, loose scale, and oil. Min average density of 13 pcf with min ind density of 11 pcf for Types DC/F, II, or Type II HS. Min avg and min ind densities of 22 and 19 pcf, respectively, for Type HP. For method of density determination, refer to Design Information Section, Sprayed Material.

Material Thickness On Beam

Restrained Assembly Rating Hr	Unrestrained Assembly Rating Hr	Unrestrained Beam Rating Hr	Thkns In. **
1, 1-1/2 or 2	1	1	3/8
1-1/2, 2 or 3	1-1/2	1-1/2	11/16
2, 3 or 4	2	2	1
3 or 4	3	3	1-9/16
4	4	4	2-1/4

Slab Thkns In.		Mtl Thkns on Slab In. Restrained or Unrestrained Assembly Rating Hr				
Carbonate Aggregate	Siliceous Aggregate	1	1-1/2	2	3	4
2-1/2	2-1/2	9/16	5/8	13/16	1-1/4	N/R
2-3/4	3	+	9/16	3/4	1-1/8	N/R
3	3-1/2	+	+	9/16	1-1/16	N/R
3-1/4	3-3/4	+	+	1/2	15/16	1-7/16
4	4-1/2	+	+	+	1/2	1-1/8
5	5-1/2	+	+	+	+	1/2

N/R No Rating

+ No Spray-Applied Fire Resistive Material required

** For the 1 and 1-1/2 h Unrestrained Beam Ratings, thicknesses of material shown in the above table shall be increased to 1/2 and 3/4 in., respectively, when the thicknesses applied to the beam's lower flange edges are reduced to one-half that shown in the table.

For the 2, 3 or 4 h Unrestrained Beam Ratings, thicknesses of material shown in the above table may be also used when the thicknesses applied to the beam's lower flange edges are reduced to one-half that shown in the table.

ISOLATEK INTERNATIONAL — Type D-C/F, HP, II, or Type II HS. Type EBS or Type X adhesive/sealer optional.

5A. **Spray-Applied Fire Resistive Materials* —** As an alternate to Item 5 - For maximum 3 hour ratings only - Applied by mixing with water and spraying in one or more coats to the thicknesses shown in the table above (Item 5), to concrete surfaces which are clean and free of dirt, loose scale and oil. Use of Type PC Pre-coat is required 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.
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, 300ES and PC.

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

5B. **Spray-Applied Fire Resistive Materials* —** As an alternate to Item 5 and 5A - For maximum 3 hour ratings only - Applied by mixing with water and spraying in one or more coats to the thicknesses shown in the table above (Item 5), to concrete surfaces which are clean and free of dirt, loose scale and oil. Use of Type PC Pre-coat is required prior to the application of Types 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 and min individual density of 17.5 and 16 pcf, respectively, for Type 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 300TW or 400.

NEWKEM PRODUCTS CORP — Type 400.

5C. **Spray-Applied Resistive Material* —** As an alternate to Items 5, 5A and 5B, Applied by mixing with water according to instructions on each bag of material. Mixture can be spray or trowel applied in one or more coats. The thickness of the mixture is dependent on the type of floor unit. See table below for appropriate thickness. The steel surfaces must be clean and free of dirt, loose scale, and oil. Min avg density of 44 pcf with min ind value of 40 pcf for Type M-II. Min avg density of 44 pcf with min ind value of 42 pcf for Type TG. For method of density determination, refer to Design Information Section, Sprayed Material.

Material Thickness On Beam

Restrained Assembly Rating Hr	Unrestrained Assembly Rating Hr	Unrestrained Beam Rating Hr	Thkns In. **
1, 1-1/2 or 2	1	1	3/8
1-1/2, 2 or 3	1-1/2	1-1/2	5/8
2, 3 or 4	2	2	13/16
3 or 4	3	3	1-3/16
4	4	4	1-1/2

Slab Thkns In.		Mtl Thkns on Slab In. Restrained or Unrestrained Assembly Rating Hr				
Carbonate Aggregate	Siliceous Aggregate	1	1-1/2	2	3	4
2-1/2	2-1/2	5/8	11/16	13/16	1-1/4	N/R
2-3/4	3	+	5/8	13/16	1-1/8	N/R
3	3-1/2	+	+	5/8	1-1/16	N/R
3-1/4	3-3/4	+	+	9/16	15/16	1-7/16
4	4-1/2	+	+	+	9/16	1-1/8
5	5-1/2	+	+	+	+	9/16

Thickesses measured to the face of metal lath.

N/R=No Rating

+ = No Spray-Applied Fire Resistive Material required

GREENTECH THERMAL INSULATION PRODUCTS MFG CO L L C — Types M-II, or TG. Investigated for exterior use.

ISOLATEK INTERNATIONAL — Types M-II, or TG. Investigated for exterior use.

NEWKEM PRODUCTS CORP — Types M-II, or TG. Investigated for exterior use.

6. **Metal Lath —** (For use on underside of concrete slab when Item 5C is used) - Not Shown- 3/8 in. diamond mesh, min 2.5 lbs per sq yd painted or galv expanded steel. Fastened to underside of slab with ribs facing down with fasteners as described in Item 7. Lath edges overlapped approx 3 in.

7. **Fasteners —** (For use with Item 6) - Not Shown- No. 12 by 1 in., Type AB, with high-low threads and a flat head. For powder actuated attachment, any standard concrete and steel fastener with a min length of 1-1/4 in., min shank diam of 0.145 in. and a min 1/16 by 1/2 in. diam washer. Fasteners spaced 12 in. O.C. in both direction to secure lath to floor units.

*** 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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