

FIRE-RESISTANCE DESIGN

Assembly Usage Disclaimer

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. S739

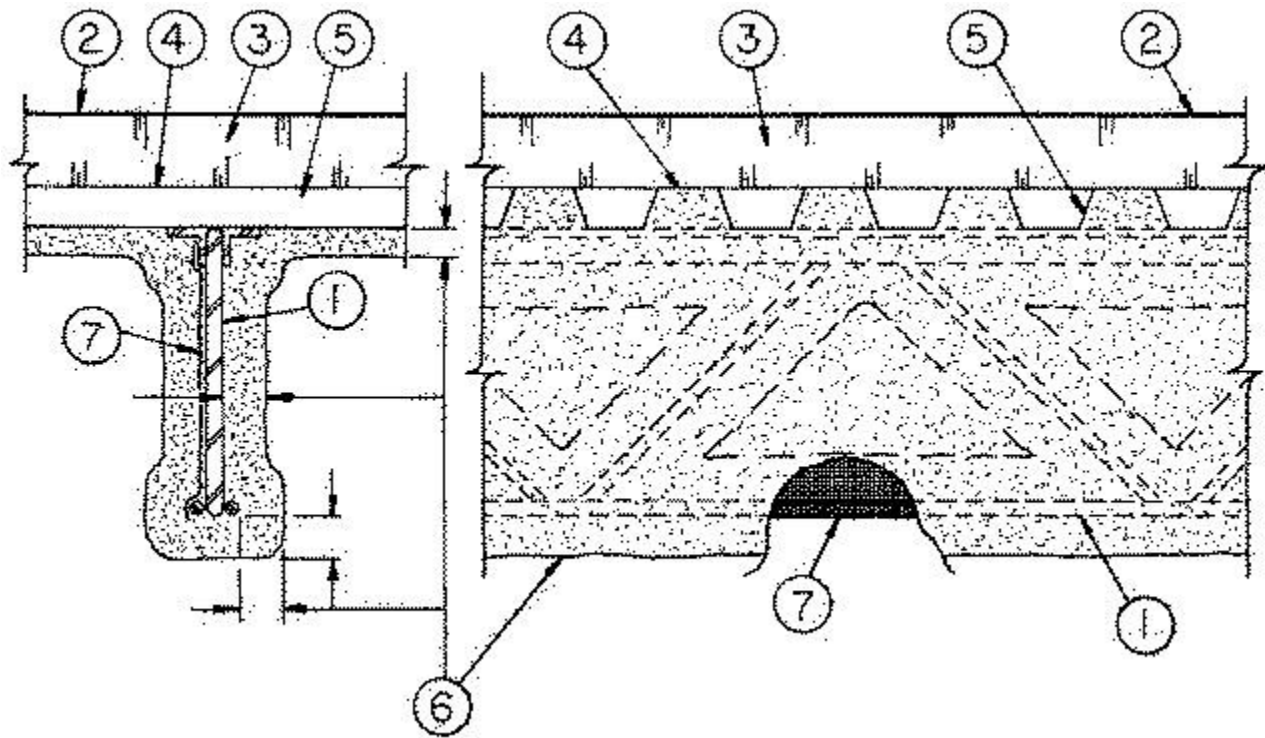
November 23, 2011

Restrained Beam Ratings — 1, 1-1/2, 2 or 3 Hr (See Item 6)

Unrestrained Beam Ratings — 1, 1-1/2, 2 or 3 Hr (See Item 6)

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 Supports** — 10K1 min size steel joists.
2. **Roof Covering*** — Consisting of hot mopped, cold application or single-ply 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).
3. **Roof Insulation*** — Consisting of building units, foamed plastic or mineral and fiber boards, applied in one or more layers. When multiple layers are used, end and side joints shall be offset a min of 12 in. in both directions in order to lap all joints. See category for names of companies providing Classified products — Building Units (BZXX), Foamed Plastic (CCVW) or Mineral and Fiber Boards (CERZ). Roof insulation shall be compatible with roof covering materials Class A, B or C system. See Roofing Materials and Systems Directory-Roof Covering Materials (TEVT).
4. **Adhesive** — (Optional) — May be applied to steel roof deck units or between insulation layers at a max application rate of 0.4 gal per 100 sq ft. See **Adhesives** (BYWR) category for names of manufacturers.
5. **Steel Roof Deck** — (Unclassified) — Fluted, No. 22 MSG min galv 1-1/2 in. deep with 3-1/2 in. wide flutes spaced 6 in. OC. Ends overlapped a min 1-1/2 in. and welded to supports, 12 in. OC max. Adjacent units button-punched, welded or fastened with No. 12 by 1/2 in. long self-drilling, self-tapping steel screws.
6. **Spray-Applied Fire Resistive Materials*** — Applied by mixing with water and spraying to the joist and deck surfaces in one or more coats to the final min thicknesses shown below. Crest areas above the joist shall be filled with the Spray-Applied Fire Resistive Materials. Surfaces must be clean and free of dirt, loose scale and oil. Steel deck surfaces must be "spatter" coated with Type DK Spray Applied Fire Resistive Materials applied in accordance with manufacturer's application instructions. Min avg and min ind density of 15/14 pcf respectively. Min avg and min ind density of 19/18 pcf respectively for Types 7GP and 7HD. For method of density determination, see Design Information Section.

Joist Thickness on Bare Deck			
Restrained Beam Rating	Unrestrained Beam Rating	On 10K1 Joist	On 10K1 Joist @ 4 ft. or less OC
1	1	3/4	3/4
1 1/2	1	1 3/8	1 3/8
1 1/2	1 1/2	1 7/16	1 3/8
2	1	2 1/16	2 1/16
2	2	2 1/8	2 1/16
3	3	3 11/16	3 3/8

Joist and Deck Thickness for Sprayed Deck Assemblies				
Restrained Beam Rating	Unrestrained Beam Rating	On Deck	On 10K1 Joist	On 10K1 Joist @ 4 ft. or less OC
1	1	3/8	3/4	9/16
1 1/2	1	9/16	13/16	13/16
1 1/2	1 1/2	9/16	1 3/16	15/16
2	1	1 1/8	1 5/16	1 1/4
2	2	1 1/8	1 5/8	1 1/4
3	3	2 3/16	2 9/16	2

SOUTHWEST FIREPROOFING PRODUCTS CO — Types 4, 5, 5EF, 5GP, 5AR, 5GP/AR, 5EF/AR, 5MD/AR, 5MD, 7GP, 7HD, 8EF, 8GP, 8MD, 9EF, 9GP, 9MD.

7. Glass Fiber Mesh — (Optional) — Min 1/8 in. square mesh, coated fiberglass scrim fabric, weighing a min of 1.9 oz per 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 Spray-Applied Fire Resistive Materials during application and curing of the material. 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 min 12 in. OC along the top chord of the bar joists. Another method to secure the mesh is by 1-1/4 in. long by 1/2 in. wide hairpin clips formed from No. 18 SWG or heavier steel wire.

8. Metal Lath — (Optional-Not shown) — Diamond mesh, 3/8 in. expanded steel, min 1.7 lb per sq yd fastened to one side of joists using No. 18 SWG steel tie wire, located at the midheight of every other web member or 18 in. O.C. whichever is less. Both sides of lath must be completely coated with Spray-Applied Fire Resistive Materials.

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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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