

Fire-resistance Ratings - ANSI/UL 263

**Design No. S750**

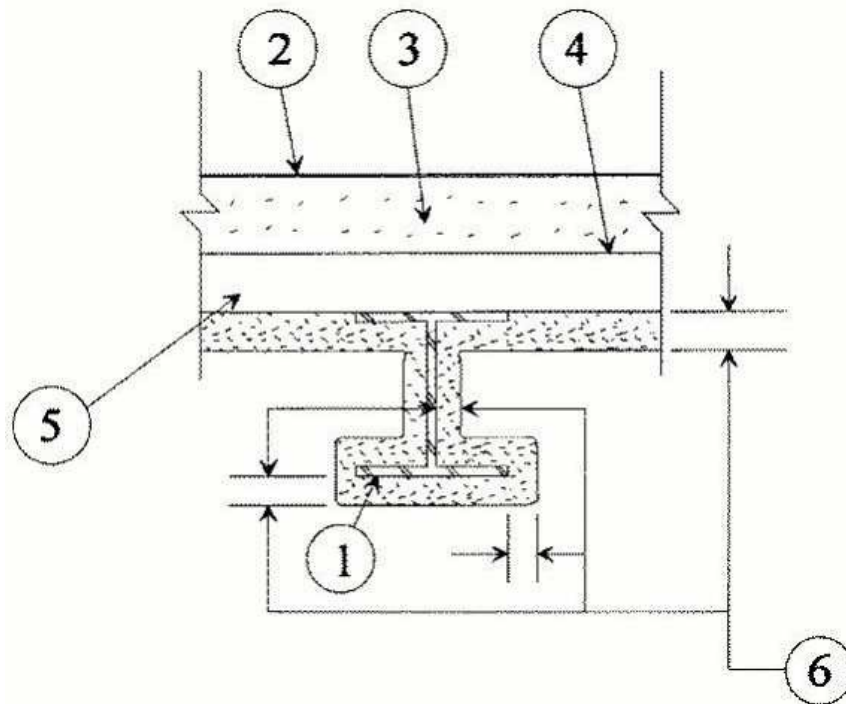
July 23, 2015

Restrained Beam Ratings — 1, 1-1/2, 2 and 3 Hr

Unrestrained Beam Ratings — 1, 1-1/2, 2 and 3 Hr

Loading Determined by Allowable Stress Design Method or Load and Resistance Factor Design Method published by the American Institute of Steel Construction, or in accordance with the relevant Limit State Design provisions of Part 4 of the National Building Code of Canada

\* 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 Beam** — W8x28 min size.
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 (CCVV) 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/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.

# FIRE RESISTANCE DIRECTORY W R GRACE – NON-LOAD RESTRICTED DESIGNS

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6. **Spray-Applied Fire Resistive Materials\*** — Applied by mixing with water and spraying in more than one coat to the beam to the final thicknesses shown below. Crest areas shall be filled with Spray-Applied Fire Resistive Materials above the beam. Beam surfaces must be clean and free of dirt, loose scale and oil. Min average and min ind. density of 15/14 pcf respectively. Min avg and min ind density of 22/19 pcf respectively for Types Z-106, Z-106/HY, Z-106/G. Min avg and min ind density of 40/36 pcf respectively for Types Z-146, Z-146PC and Z-146T cementitious mixture. Min avg and min ind density of 50/45 pcf respectively for Types Z-156, Z-156T and Z-156PC. For method of density determination, see Design Information Section.

**Min Spray-Applied Fire Resistive Materials Thickness In.**

Rating Hr	Restrained Beam	Unrestrained Beam	Deck
1	11/16	11/16	9/16
1-1/2	7/8	15/16	7/8
2	1-3/16	1-1/4	1-5/8
3	1-11/16	1-11/16	1-7/8

**ARABIAN VERMICULITE INDUSTRIES** — Types MK-6/HY, MK-6/HY Extended Set, MK-10 HB, MK-10 HB Extended Set, MK-6/HB, MK-6s, MK-6 GF, MK-6 GF Extended Set, MK-1000/HB, MK-1000/HB Extended Set, Z-106, Z-106/G, Z-146 investigated for exterior use.

**GRACE KOREA INC** — Types MK-6/HY, MK-6/HY Extended Set, MK-10 HB, MK-10 HB Extended Set, MK-6/HB, MK-6s, MK-6 GF, MK-6 GF Extended Set, MK-1000/HB, MK-1000/HB Extended Set, Z-106, Z-106/G, Z-106/HY, Z-146 investigated for exterior use.

**W R GRACE & CO - CONN** — Types MK-6/HY, MK-6/HY Extended Set, MK-10 HB, MK-10 HB Extended Set, MK-6/HB, MK-6s, MK-6 GF, MK-6 GF Extended Set, MK-1000/HB, MK-1000/HB Extended Set, RG, Z-106, Z-106/G, Z-106/HY, Z-146, Z-146T, Z146PC, Z-156, Z-156T and Z-156PC investigated for exterior use.

7. **Metal Lath (Not shown)** — Metal lath shall be used when applying Type Z-146, Z-146T, Z146PC, Z-156, Z-156T and Z-156PC material to the underside of the steel deck. The metal lath shall be 3/8 in. expanded diamond mesh, weighing 1.7 lb per sq yd. secured to underside of steel deck with No. 12 by 3/8 in. pan head self-drilling, self-tapping steel screws and steel washers with an outside diam of 1/2 in. Screws spaced 12 in. OC in both directions with lath edges overlapped approximately 3in.

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