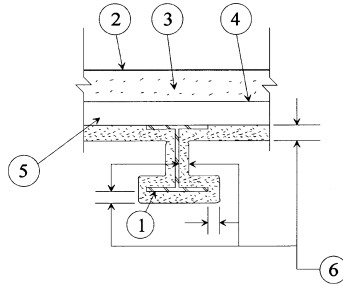


Design No. S734

Restrained Beam Ratings — 1, 1-1/2, 2 and 3 Hr
Unrestrained Beam Ratings — 1, 1-1/2, 2, 3 and 4 Hr
Load Restricted for Canadian Applications — See Guide BXUV7



1. **Steel Beam** — W6x16 or W12x19, 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.
6. **Spray-Applied Fire Resistive Materials*** — Applied by mixing with water and spraying to the beam and deck surfaces to the final min thicknesses shown below. Crest areas above the beam shall be filled with the Spray-Applied Fire Resistive Materials. Surfaces must be clean and free of dirt, loose scale and oil. Min avg and min ind density of 15/14 pcf. For method of density determination see Design Information Section.

Min Spray-Applied Fire Resistive Materials Thickness In.

Rating Hr	Unrestrained Beam		Restrained Beam	Deck
	W6x16	W12x19	W6x16	
1	9/16	5/8	9/16	9/16
1-1/2	13/16	15/16	5/8	7/8
2	1-1/16	1-3/16	7/8	1-5/8
3	1-1/2	1-11/16	1-1/4	1-7/8
4	3-5/16	—	3-5/16	1-7/8

ARABIAN VERMICULITE INDUSTRIES —Types MK-6/CBF, MK-6/ED, MK-6/HY, 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, Sonophone 1.

GRACE KOREA INC —Types MK-6/CBF, MK-6/ED, 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, Monokote Acoustic 1.

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, Monokote Acoustic 1, RG.

- 6A. **Alternate Spray-Applied Fire Resistive Materials*** — Applied by mixing with water and spraying in one or more coats to a final thickness as shown in the tables below to beam and deck surfaces which must be clean and free of dirt, loose scale and oil. Crest areas above the beam shall be filled with the Spray-Applied Fire Resistive Materials. Min avg and min ind density of 22/19 pcf, respectively. For method of density determination, refer to Design Information Section.

Min Spray-Applied Fire Resistive Materials Thickness In.

Rating Hr	Unrestrained Beam		Restrained Beam	Deck
	W6x16	W12x19	W6x16	
1	9/16	5/8	9/16	9/16
1-1/2	13/16	15/16	5/8	7/8
2	1-1/16	1-3/16	7/8	1-5/8
3	1-1/2	1-11/16	1-1/4	1-7/8
4	3	—	3	1-7/8

ARABIAN VERMICULITE INDUSTRIES —Types Sonophone 5, Z-106, Z-106/G, Z-106/HY.

GRACE KOREA INC —Types Monokote Acoustic 5, Z-106, Z-106/G, Z-106/HY.

W R GRACE & CO - CONN —Types Monokote Acoustic 5, Z-106, Z-106/G, Z-106/HY.

- 6B. **Alternate Spray-Applied Fire Resistive Materials*** — Applied by mixing with water and spraying in one or more coats to a final thickness as shown in the tables below to beam and lathed deck surfaces which must be clean and free of dirt, loose scale and oil. Crest areas above the beam shall be filled with Spray-Applied Fire Resistive Materials prior to application of the metal lath. 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, refer to Design Information Section.

Min Spray-Applied Fire Resistive Materials Thickness In.

Rating Hr	Unrestrained Beam		Restrained Beam	Deck
	Rating Hr		Rating Hr	
	W6x16	W12x19	W6x16	
1	9/16	5/8	9/16	9/16
1-1/2	13/16	15/16	5/8	7/8
2	1-1/16	1-3/16	7/8	1-5/8
3	1-1/2	1-11/16	1-1/4	1-7/8
4	3-5/16	—	3-5/16	1-7/8

ARABIAN VERMICULITE INDUSTRIES —Type Z-146 investigated for exterior use, Sonophone 35.

FIRE RESISTANCE DIRECTORY - W R GRACE DESIGNS

W R GRACE & CO - CONN —Type Z-146, Z-146T, Z146PC, Z-156, Z-156T and Z-156PC, investigated for exterior use, Monokote Acoustic 35.

GRACE KOREA INC —Type Z-146, investigated for exterior use, Monokote Acoustic 35.

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 3 in.

*Bearing the UL Classification Mark