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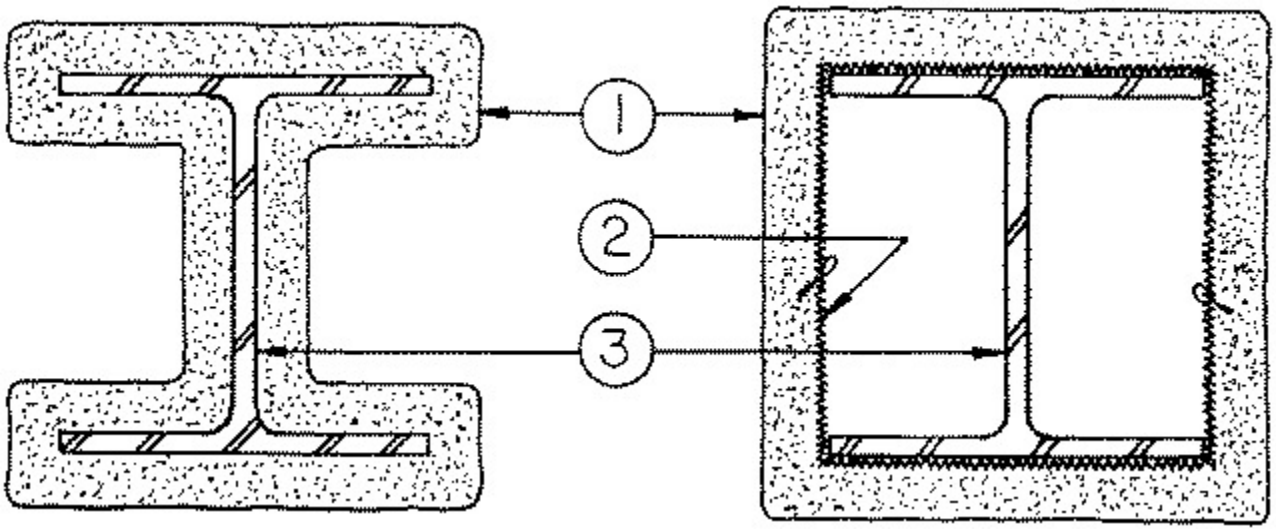
See General Information for Fire Resistance Ratings - ANSI/UL 263

Design No. X772

July 10, 2004

Ratings — 1, 1-1/2, 2, 3 and 4 h.



1. **Spray-Applied Fire Resistive Materials* —** Applied by mixing with water and spraying in more than one coat to the thicknesses shown below, to steel surfaces which are clean and free of dirt, loose scale, and oil. Min avg 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/G. 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, Sprayed Material.

The thickness of Spray-Applied Fire Resistive Materials to be applied to all surfaces of the column (Item 1) required for rating periods of 1 h, 1-1/2 h, 2 h, 3 h, 4 h may be determined by the equation:

$$h = \frac{R}{1.05\,(W/D) + 0.61}$$

Where:

h = Spray-Applied Fire Resistive Materials thickness in the range 0.25-3.875 in.

R = Fire resistance rating in hours (1 - 4 h)

D = Heated perimeter of steel column in inches

W = Weight of steel column in lbs per foot

W/D = 0.33 to 6.62

As an alternate to the equation, the minimum thickness of Spray-Applied Fire Resistive Materials required for various fire resistance ratings of contour sprayed or boxed columns may be determined from the table below:

		Min Thk In.
Min		

Col Size	W/D	1 Hr	1-1/2 Hr	2 Hr	3 Hr	4 Hr
W6X9	0.33	1-1/8	1-1/2	2	2-1/2	3-13/16
W6x16	0.57	13/16	1-1/4	1-11/16	2-1/2	3-5/16
W8x28	0.67	3/4	1-3/16	1-3/8	2	2-11/16
W10x49	0.83	11/16	7/8	1-1/8	1-11/16	2-1/2
W14x228	2.49	5/16	1/2	9/16	7/8	1-1/4
W14x730	6.62	5/16	5/16	5/16	3/8	9/16

The thicknesses contained in the table below are applicable when the Spray-Applied Fire Resistive Materials applied to columns' flange tips are reduced to one-half that shown in the table below:

Min Col Size	W/D	Min Thk In.				
		1 Hr	1-1/2 Hr	2 Hr	3 Hr	4 Hr
W6x9	0.33	1-1/8	1-5/8	2-1/16	2-15/16	3-13/16
W6x16	0.57	7/8	1-5/16	1-3/4	2-9/16	3-3/8
W8x28	0.67	13/16	1-3/16	1-1/2	2-1/4	2-15/16
W10x49	0.83	3/4	1-1/16	1-3/8	2-1/16	2-3/4
W14x233	2.49	5/16	1/2	11/16	1-3/16	1-5/8
W14x730	6.62	5/16	5/16	5/16	9/16	3/4

ARABIAN VERMICULITE INDUSTRIES — Types MK-5, MK-6/CBF, MK-6/ED, MK-6/HY, MK-6/HY Extended Set, MK-6s, Sonophone 1, Sonophone 5, Z-106, Z-106/G.

GRACE CANADA INC — Types MK-4 or MK-5.

W R GRACE & CO - CONN

CONSTRUCTION PRODUCTS DIV — Types MK-4, MK-5, MK-6/HY, MK-6/HY Extended Set, MK-6s, RG, Monokote Acoustic 1, Monokote Acoustic 5, Z-106, Z-106/G.

GRACE KOREA INC — Types MK-6/CBF, MK-6/ED, MK-6/HY, MK-6/HY Extended Set, MK-6s, Monokote Acoustic 1, Monokote Acoustic 5, Z-106, Z-106/G.

PYROK INC — Type LD.

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

VERMICULITE PRODUCTS INC — Type MK-4 or MK-5.

2. **Metal Lath —** (Optional for contour application) — 3.4 lb/sq yd galvanized or painted expanded steel lath. Lath shall be lapped 1 in. and tied together with No. 18 SWG galvanized steel; wire spaced vertically 6 in. O.C.

3. **Steel Column —** Wide flange steel column, min sizes as shown in the tables below.

*Bearing the UL Classification Mark

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