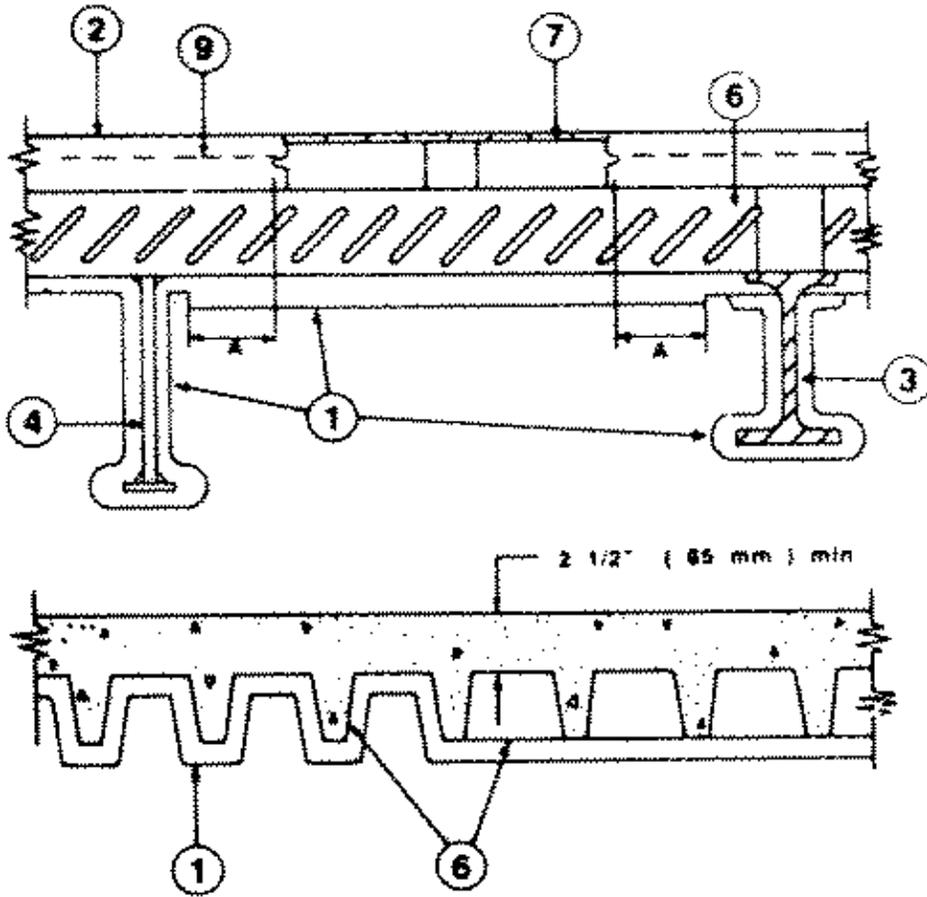


WRG/FCA 240-01

# FLOOR CEILING ASSEMBLY

PROTECTED DECK

(TYPE MK-6, MK-6/HY, Type SK-III and Type RG)



**TABLE OF RATINGS  
LOW DENSITY CONCRETE TOPPING**

RATING			MINIMUM THICKNESS OF PROTECTION (INCHES)*					
Restrained Assembly	Unrestrained Assembly	Unrestrained Beam	Crests	Valleys	Cellular Plate	Beam W8x28 <sub>a</sub>	Beam W8x28 <sub>b</sub>	Joist / Truss
1	0	1	0	0	0	1/2	7/16	1-1/16
2	1	1	3/8**	3/8	3/8	1/2	7/16	1-1/16
3	1	1-1/2	11/16**	1/2	1/2	7/8	3/4	1-11/16
-	2	2	3/8**	3/8	3/8	1-1/8	1	2-1/4
-	3	3	11/16	1/2	1/2	1-5/8	1-9/16	N/R***
4	2	2	1-1/2	1-1/8	N/R***	1-1/8	1	2-1/4

**TABLE OF RATINGS  
NORMAL DENSITY CONCRETE TOPPING**

RATING			MINIMUM THICKNESS OF PROTECTION (INCHES)*					
Restrained Assembly	Unrestrained Assembly	Unrestrained Beam	Crests	Valleys	Cellular Plate	Beam W8x28 <sub>a</sub>	Beam W8x28 <sub>b</sub>	Joist / Truss
1	1	1	3/8	3/8	3/8	1/2	7/16	1-1/16
2	1	1	3/8**	3/8	3/8	1/2	7/16	1-1/16
3	1	1-1/2	11/16	1/2	1/2	3/4	3/4	1-11/16
-	2	2	3/8**	3/8	3/8	7/8	1	2-1/4
-	3	3	11/16	1/2	1/2	1-1/4	1-9/16	N/R***
4	2	2	1-7/16	13/16	N/R***	7/8	1	2-1/4

- a) Protection thickness for beam when protection is applied uniformly around perimeter of beam and beam is supporting fluted or cellular floor or form units.
- b) Protection thickness applicable when thickness applied to beam's lower flange edge is reduced to one half that shown in (b) and the beam is supporting only fluted floor or form units. Thickness applied to beam's lower flange edges shall be a minimum of 1/4 inch (6mm).

\* Inches x 25.4 = mm

\*\* Minimum thickness of 1/2 inch (12mm) is required in crests of 1- 1/2 inch (38mm) deep fluted units.

\*\*\* Not rated.

## **1. Sprayed Fire Protection**

Grace Cementitious Mixture, minimum average density 15 pcf (240 kg/m<sup>3</sup>), minimum individual density 14 pcf (225 kg/m<sup>3</sup>), Type MK-6 , MK-6/HY, Type RG and Type SK-III.

## **2. Concrete Topping**

Normal Density: Minimum compressive strength 2545 psi (17.5 mpa) carbonate or siliceous aggregate 150 +/- 3 lbs/ft<sup>3</sup> (2400 +/- 50 kg/m<sup>3</sup>) density. Minimum thickness 2-1/2 inch (65 mm) above the top plane of the flute deck.

## **3. Beams**

W200 x 42 (W8 x 28) M/D = 42.0 (W/D = 0.8) minimum size for protection thickness indicated.

## **4. Joist/Truss**

Steel, 10.7 lbs/ft (16 kg/m) minimum size. Designed in accordance with the relevant provisions of Chapter 4 of the Supplement to the National Building Code of Canada. For composite design use Item 5 below.

## **5. Shear Connectors (Composite Designs Only)**

Studs, headed type. Welded to top flange of joist or beam through the deck.

## **6. Steel Floor Units**

Listed for use as a component in similar fire resistance rated assemblies. Composite or non-composite floor units, 20 ga (1.0 mm) minimum thickness for cellular sections, 22 ga minimum thickness for fluted sections. Units welded to supports on every other trough. Adjacent units crimped along joints at 18-inch (450 mm) O.C. See individual manufacturer's information.

## **7. Trench Header**

Housing constructed of steel, and trench header provided with metal edge screens. Listed for use as component in similar fire resistance rated assemblies. Minimum fire protection thickness under trench header 1.75 inch (45 mm). Maximum restrained assembly rating 2 hours. Dimension A is 6 inch (150 mm) minimum. A spattered coat of Type SK-III must also be used on all cellular units and/or floor units below trench header.

## **8. Bridging (Optional)**

Designed in accordance with the relevant provisions of Chapter 4 of the supplement to the National Building Code of Canada, protected to thickness prescribed in joist/truss protection.

## **9. Welded Wire Mesh**

6 inch x 6 inch (150 mm x 150 mm) P18.7/P18.7 steel wire. Alternate to wire mesh is maximum 3/4 inch diameter steel reinforcing bars placed on a 6 inch by 6 inch grid.