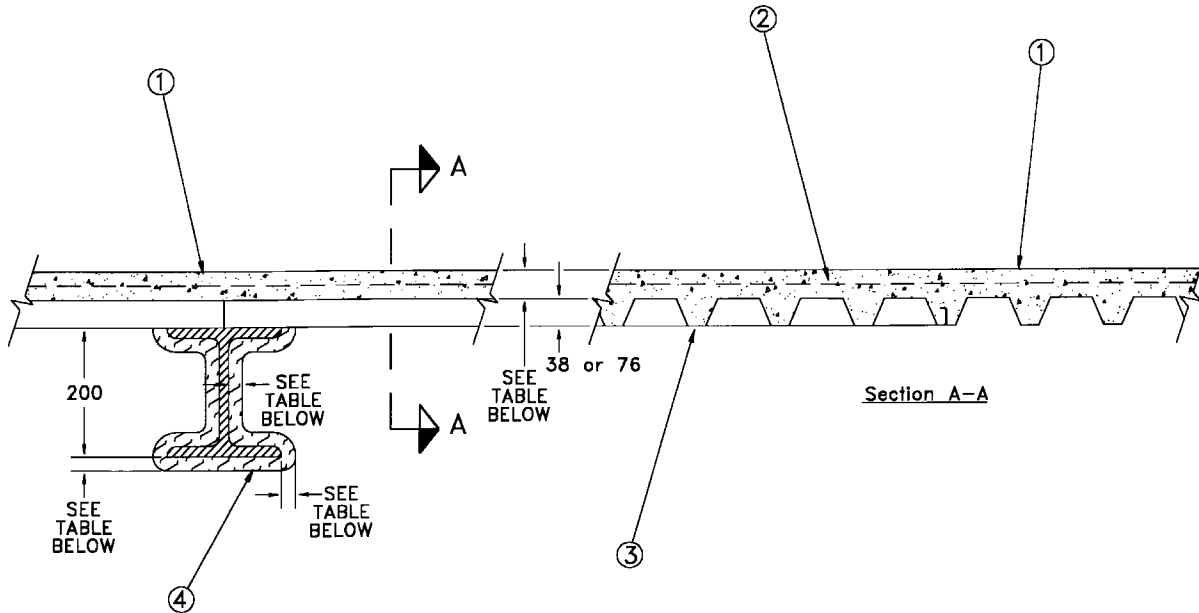


DESIGN No. F906

Restrained Assembly Rating	- 3, 2, 1-1/2 & 1 h (See Item 4)
Unrestrained Assembly Rating	- 0 h, (See Item 3)
Unrestrained Beam Rating	- 3/4, 1 & 1-1/2 h (See Item 4)



Beam – W200x42, Minimum Size. (For Spray-Applied Fire-Resistive Material, see Item 4a or b);

Beam – W150x18 and W150x37, Minimum Size. (For Thin-Film Intumescent Coating, see Item 4c).

1. Normal-Density or Low-Density Concrete – Normal-density concrete, carbonate or siliceous aggregate, $2400 \pm 50 \text{ kg/m}^3$ density, 24 MPa nominal compressive strength. Low-density concrete, expanded shale, clay or slate aggregate by rotary kiln method, $1760 \pm 50 \text{ kg/m}^3$ density, 24 MPa nominal compressive strength, or, expanded blast furnace slag aggregate, $1955 \pm 50 \text{ kg/m}^3$ density, 24 MPa nominal compressive strength.

2. Wire Fabric – 152 by 152 MW9.1xMW9.1 wire mesh.

• **3. Steel Floor Units** – (Guide No. 40 U18.19). Composite or noncomposite floor units. Any combination of 0.76 mm thick fluted sections or 0.91/0.91 mm thick cellular sections, welded to supports with 19 mm puddle welds spaced 300 mm OC. Adjacent units button punched or welded 915 mm OC along side joints. When the maximum clear span of the steel floor units is less than or equal to the tested span of 2900 mm, the unrestrained assembly rating is increased to 3/4 h, 1 h or 1-1/2 h to match the unrestrained beam rating.

See individual manufacturer's listing for those profiles that may be used in this Design.

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- **4. (a) Spray-Applied Fire-Resistive Material** – (Guide No. 40 U18.6). Fibre material (A/D Type FP) applied to minimum W200x42 steel beam surfaces that are clean and free of dirt, loose scale or oily deposits. Applied to the thickness indicated below. When fluted steel floor units are used, the space between the units and top flange of the beam shall be filled. Fibre to have a minimum average dry density of 165 kg/m³ with no individual value less than 145 kg/m³. For method of density determination, refer to General Information Section under heading "Fire Resistance Ratings".

A/D FIRE PROTECTION SYSTEMS

Restrained Assembly Rating, h	Unrestrained Assembly Rating, h	Unrestrained Beam Rating, h	Min Concrete Cover Thickness, mm		Min Thickness of Spray-Applied Fire-Resistive Material on Beam, mm
			Normal-Density	Low-Density	
3	0 (see Item 3)	1-1/2	140	110	22
2	0 (see Item 3)	1	114	85	13
1-1/2	0 (see Item 3)	1	100	71	13
1	0 (see Item 3)	1	83	64	13

or

- (b) **Spray-Applied Fire-Resistive Material** (see table below) – (Guide No. 40 U18.6). "A/D Type 5" spray-applied fire-resistive material for application with or without adhesive to steel surfaces in thicknesses indicated above and in the following table (fluted units only). Mixture to have a minimum average dry density of 272 kg/m³ with a minimum individual value of 248 kg/m³. Area between fluted and top flange of beam to be filled. For method of density determination, refer to General Information Section under heading "Fire Resistance Ratings". Steel surfaces must be clean and free of dirt, loose scale and oily deposits.

A/D FIRE PROTECTION SYSTEMS

Restrained Assembly Rating, h	Unrestrained Assembly Rating, h	Unrestrained Beam Rating, h	Min Concrete Cover Thickness, mm		Min Thickness of Spray-Applied Fire-Resistive Material on Beam, mm
			Normal-Density	Low-Density	
3	0 (see Item 3)	1-1/2	140	110	22
2	0 (see Item 3)	1	114	85	13
1-1/2	0 (see Item 3)	1	100	71	13
1	0 (see Item 3)	1	83	64	13

or

- (c) **Thin-Film Intumescent Coatings** – (Guide No. 40 U18.12.9). Intumescent coating designated "A/D FIREFILM®II" applied to steel beams in accordance with manufacturer's instructions to the minimum dry film thicknesses shown below:

A/D FIRE PROTECTION SYSTEMS

continued...

For W150x18

Restrained Assembly Rating, h	Unrestrained Assembly Rating, h	Unrestrained Beam Rating, h	Min Concrete Cover Thickness, mm		Min Dry Thickness of A/D FIREFILM®II on Beam, mm
			Normal- Density	Low- Density	
2	0 (see Item 3)	1	114	85	1.65
1-1/2	0 (see Item 3)	1	100	71	1.65
1	0 (see Item 3)	1	83	64	1.65
3/4	0 (see Item 3)	3/4	83	64	1.14

For W150x37

Restrained Assembly Rating, h	Unrestrained Assembly Rating, h	Unrestrained Beam Rating, h	Min Concrete Cover Thickness, mm		Min Dry Thickness of A/D FIREFILM®II on Beam, mm
			Normal- Density	Low- Density	
1-1/2	0 (see Item 3)	1	114	85	1.14
1	0 (see Item 3)	1	83	64	1.14

5. Shear Connectors (optional) (not shown) – Studs 13 mm diameter by 100 mm long, headed type. Welded to top flange of beam through steel floor units.

6. Finish Coating (not shown) – Silicon alkyd designated "A/D COLORCOAT®" topcoat applied over intumescent coating (Item 4c) to maximum thickness of 0.05 mm.