

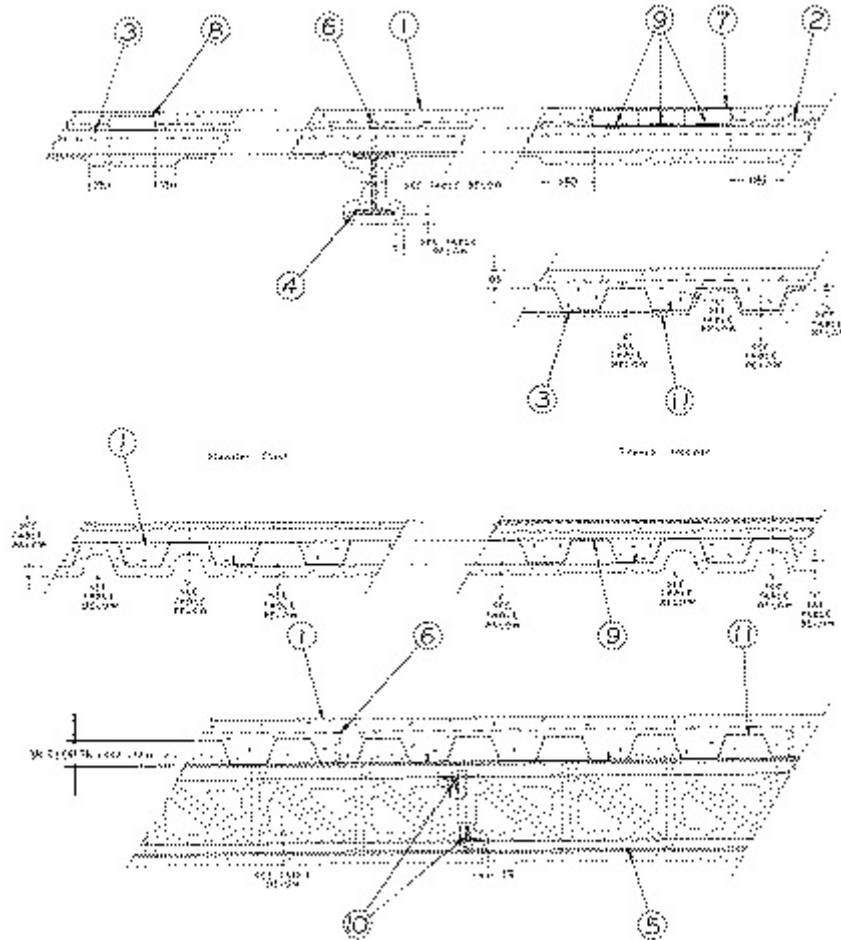
## ULC Design No. F817

April 01, 2003

Restrained Assembly Rating - 3, 2 and 1-1/2 h (See Table Below)

Unrestrained Assembly Rating - 1-1/2 h

Unrestrained Beam Rating - 1 and 1-1/2 h (See Table Below)



1. **Normal-Density or Low-Density Concrete** - Normal-density concrete, carbonate or siliceous aggregate  $2420 \pm 50 \text{ kg/m}^3$  density, 21 MPa nom compressive strength. Low-density concrete, expanded shale, clay, or slate aggregate by rotary kiln method,  $184 \pm 50 \text{ kg/m}^3$  density, 21 MPa nom. compressive strength, or expanded blast furnace slag aggregate,  $1955 \pm 50 \text{ kg/m}^3$  density, 21 MPa nom. compressive strength.

2. **Wire Fabric** - 152x152 P18.7/P18.7 steel wire.

3. **Steel Floor Units** - (Guide No. 40 U18.19). Composite or noncomposite floor units, all 0.91 mm thick fluted sections or alternating one 915 mm or 610 mm wide, 0.91 mm fluted sections to a max of one 610 mm wide 0.91/0.91 mm cellular section. Units welded to supports with 20 mm dia. plug welds spaced on every other trough. Adjacent units crimped along joints at 450 mm OC. See individual manufacturer's listing for those profiles that may be used in this design. Thickness of fluted sections may be reduced to 0.76 mm.

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4. **Beam** - W200x31, min size.
5. **Joist** - 305 mm deep, open-web steel joist, 16 kg/m min. size, designed in accordance with the relevant provisions of Part 4 of the National Building Code of Canada. For composite design, use Item 6 below.
6. **Shear Connectors** - (optional) - Studs, 13 mm dia. by 100 mm long, headed type. Welded to top flange of joist or beam through the deck.
7. **Trench Header** - Housing constructed of steel and trench header provided with metal edge screeds.
8. **Heater Duct** - Housing constructed of steel.
9. **Access Openings** - As required, with grommets.
10. **Bridging** - Designed in accordance with the relevant provisions of Part 4 of the National Building Code of Canada, protected with 19 mm min. "A/D Type FP" spray-applied fire-resistive material (Item 11a), with a min average density of 165 kg/m<sup>3</sup>, or "A/D Type 5" spray-applied fire-resistive material (Item 11b), with a min average density of 272 kg/m<sup>3</sup>.
- 11(a). **Spray-Applied Fire-Resistive Material** - (see table below) - (Guide No. 40 U18.6). "A/D Type FP" fibre for application with or without adhesive to steel surfaces in thicknesses indicated above and in the following table. Fibre to have a min average dry density of 165 kg/m<sup>3</sup> with a min individual value of 145 kg/m<sup>3</sup>. Area between fluted deck and top flange of beam or joist 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 INC**

<b>Deck Protection - General</b>									
<b>Restrained Assembly Rating, h</b>	<b>Unrestrained Assembly Rating, h</b>	<b>Unrestrained Beam Rating, h</b>	<b>(a) Crests, mm</b>	<b>(b) Sides, mm</b>	<b>(c) Valleys, mm</b>	<b>(d) Cellular Plate, mm</b>	<b>Protection Beam mm</b>	<b>Joist mm</b>	
3	—	1½	17	14	6	14	21	38	
2	—	1	13	11	6	11	13	25	
1½	—	1	10	10	6	10	13	25	
—	1½	1½	10	10	6	10	21	38	

<b>Assembly Rating, h</b>	<b>Deck Protection - Under Trench Header</b>			
	<b>(a) Crests, mm</b>	<b>(b) Sides, mm</b>	<b>(c) Valleys, mm</b>	<b>(d) Cellular Plate, mm</b>
3	38	33	29	29
2, 1½	32	24	24	33

Assembly Rating, h	Deck Protection - Under Header Duct			
	(a) Crests, mm	(b) Sides, mm	(c) Valleys, mm	(d) Cellular Plate, mm
3	40	37	32	32
2, 1½	25	25	25	22

- 11(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 (to be used on fluted steel floor units only). Mixture to have a min. average dry density of 272 kg/m<sup>3</sup> with a min. individual value of 248 kg/m<sup>3</sup>. Area between flutes and top flange of beam or joist 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.

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Restrained Assembly Rating, h	Unrestrained Assembly Rating, h	Unrestrained Beam Rating, h	Deck Protection - General				
			(a) Crests, mm	(b) Sides, mm	(c) Valleys, mm	Protection Beam, mm	Joist mm
2	—	1	13	11	6	13	25
1½	—	1	10	10	6	13	25
—	1½	1½	10	10	6	21	38

Assembly Rating, h	Deck Protection - Under Trench Header		
	(a) Crests, mm	(b) Sides, mm	(c) Valleys, mm
2, 1½	32	24	24

Assembly Rating, h	Deck Protection - Under Trench Header		
	(a) Crests, mm	(b) Sides, mm	(c) Valleys, mm
2, 1½	25	25	25