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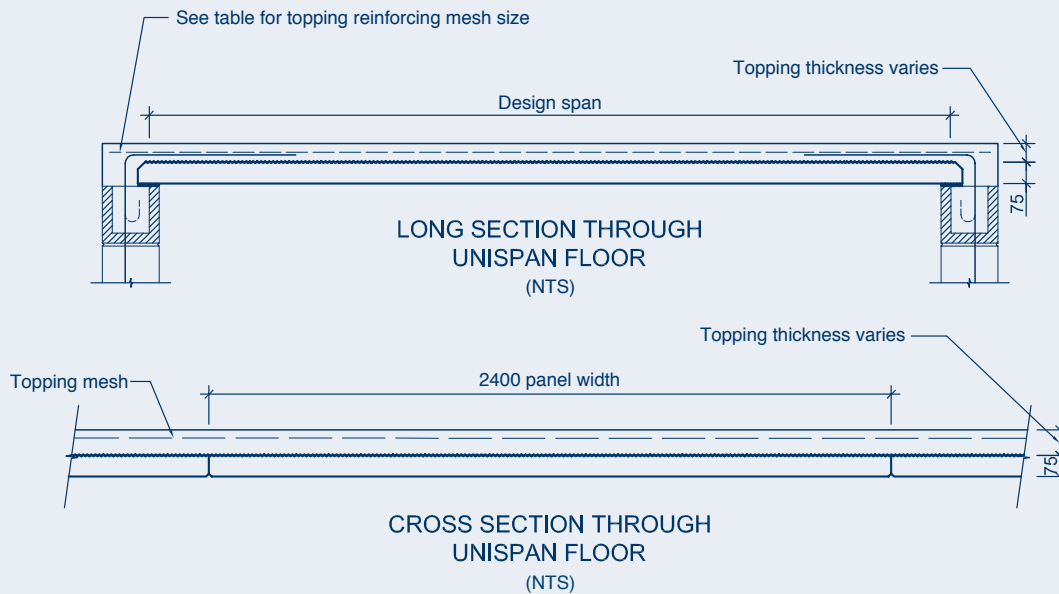
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Unispan

by HEB Precast



- Notes**
1. 12mm chamfer to bottom edges of Unispan planks.
 2. For topping, propping during construction and typical construction details refer to HEB Precast drawing no. 80008-STD-001

Safe Load/Span Tables

(generally based on a topping concrete strength of 20 MPa at 28 days)

The table shows maximum superimposed live loads (kPa) for different topping thicknesses.

Increased live loads and/or spans may be possible by specific design, please check with HEB Precast.

Design Span (m)	3.5	4.0	4.5	5	5.5	6	6.5	7	7.5	8	Minimum Topping Mesh
with 60mm topping	16.0	11.5	8.5	6.0	4.5						666
with 65mm topping	17.0	13.0	9	6.5	4.8	4.2					666
with 75 mm topping		15.0	11.0	8.0	5.5	5.0	4.75				665
with 90mm topping		19.0	14.0	10.0	7.5	6.0	5.0	4.0			665
with 110mm topping					10.5	8.5	8.5	7.0	5.5	4.25	663

Durability

The load/span table is based on the durability requirements specified in NZS 3101:2006 for an A1 internal environment exposure classification. Where a more severe exposure classification is specified then the load/span table live loads may require downgrading.

Sound Transmission Class (STC):

A concrete floor such as Unispan is ideal for residential dwellings because its mass prevents sound transmission. Unispan with 60mm topping has an STC rating of 55.

Topping Concrete

Designs are generally based on a topping concrete strength of 20 MPa at 28 days. The concrete strength requirements will be shown on (shop) layout drawings for specific designs.

Temporary Propping During Construction

Specific propping requirements for given loads and spans will be detailed on the shop drawings and are usually in the order of:

- 1 row of props for spans up to and including 5 metres
- 2 rows are required for spans greater than 5 metres.

Design Notes

- 1 The maximum safe loads shown are based on simply supported spans for both serviceability (SLS) and ultimate (ULS) limit states. Design for longer spans may be possible where structural continuity is available. The section properties are based on transformed sections for maximum spans.
- 2 The Load/Span Table is based on simply supported spans up to a floor thickness of span/44. Spans with floor thickness less than span/44 will require continuity.
- 3 Calculated deflection due to live load has been limited to span/500. If design is required for sustained super dead and/or live loads then long term creep deflection must be checked. This may result in a requirement for a more robust unit.
- 4 Camber over temporary props is approximately 5mm per metre of span over 4 metres and will be shown on shop drawings
- 5 The minimum mesh conditions shown in the Load Span table are specified in accordance with NZS 3101:Part 1:2006. Cl. 8.8 - Shrinkage and temperature reinforcement. If required heavier mesh sizes may be used.

Section Properties

Are based on a 2,400mm wide section acting compositely with a specified depth of concrete topping.
Concrete density assumed at 24 kN / cu.m

	O/A depth mm	Area Ac 10 ⁻² m ²	I 10 ⁻⁴ m ⁴	Yb mm	Zb 10 ⁻³ m ²	Zt 10 ⁻³ m ²	Floor Mass kg/m	Floor Weight kPa
Bare unit	75	18.0	0.8438	37.5	2.250	2.250	441	1.80
75 with 60mm topping	135	32.4	4.013	60.6	6.620	5.396	793	3.24
75 with 65mm topping	140	33.6	4.473	62.8	7.127	5.791	822	3.36
75 with 75mm topping	150	36.0	5.499	67.1	8.196	6.634	881	3.60
75 with 90mm topping	165	39.6	7.321	73.7	9.930	8.022	969	3.96
75 with 110mm topping	185	44.4	10.320	82.8	12.470	10.09	1087	4.44

Design

HEB Precast can supply a Producer Statement for the design of the Unispan floor as well as the manufacture of the Unispan units.

Transport And Site Erection

HEB Precast can supply economical transport and erection for the Unispan slabs using Smithbridge plant.

Quotation And Preliminary Design

HEB Precast has a free a quotation and preliminary design service. The preliminary design, which is based on spans and loadings provided by the customer, will indicate the topping thickness, mesh, propping and topping concrete strength required.

For Free Quotations Contact: HEB Precast

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