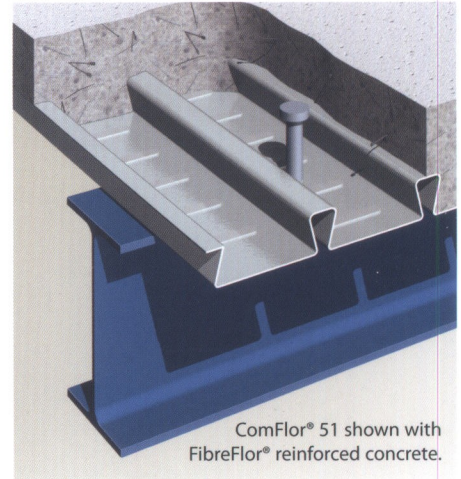
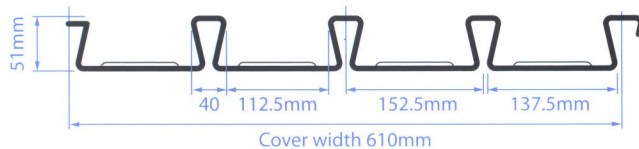


# ComFlor® 51

## Design information



### ComFlor® 51 Composite slab – volume and weight

Slab depth (mm)	Concrete volume (m <sup>3</sup> /m <sup>2</sup> )	Weight of concrete (kN/m <sup>2</sup> )			
		Normal weight Concrete		Lightweight Concrete	
		Wet	Dry	Wet	Dry
101	0.092	2.16	2.12	1.71	1.62
105	0.096	2.26	2.21	1.79	1.69
110	0.101	2.37	2.32	1.88	1.78
115	0.106	2.49	2.44	1.97	1.87
120	0.111	2.61	2.55	2.07	1.96
125	0.116	2.73	2.67	2.16	2.04
130	0.121	2.84	2.78	2.25	2.13
150	0.141	3.32	3.25	2.62	2.49
200	0.191	4.49	4.40	3.56	3.37
240	0.231	5.43	5.32	4.30	4.08

#### Notes:

- Deck and beam deflection (i.e. ponding) is not allowed for in the table.
- Deck and mesh weight is not included in the weight of concrete figures.
- Density of concrete is taken as:  
 Normal weight (wet) 2400kg/m<sup>3</sup>  
 Normal weight (dry) 2350kg/m<sup>3</sup>  
 Lightweight (wet) 1900kg/m<sup>3</sup>  
 Lightweight (dry) 1800kg/m<sup>3</sup>

### ComFlor® 51 section properties (per metre width)

Nominal thickness (mm)	Design thickness (mm)	Cross section area (mm <sup>2</sup> /m)	Profile weight (kN/m <sup>2</sup> )	Height to neutral axis (mm)	Moment of inertia (cm <sup>4</sup> /m)		Ultimate moment capacity (kNm/m)	
					Sagging	Hogging	Sagging	Hogging
0.9	0.86	1571	0.13	16.74	55.70	–	5.69	6.99
1.0	0.96	1759	0.143	16.73	62.10	–	6.33	7.93
1.2	1.16	2130	0.17	16.72	77.29	–	10.24	9.81

Section properties in the above table conform to BS5950

#### Design Notes:

##### Deck material

Tata Steel Galvalite®, hot dip zinc coated steel EN 10326-S350GD+Z275. Guaranteed minimum yield stress 350N/mm<sup>2</sup>. Minimum zinc coating mass 275g/m<sup>2</sup> total both sides.

##### Anti-crack mesh

BS 5950: Part 4 currently recommends that anticrack mesh should comprise 0.1% of slab area. The Eurocode 4 recommendation is that anticrack mesh should comprise 0.2% of slab area for unpropped spans and 0.4% of slab area for propped spans.

Where forklift truck (or other similar concentrated loading) is expected 0.5% minimum percentage reinforcement should be used over the supports and 2% elsewhere to control cracking. For further information contact us or refer to SCI AD150.

Mesh top cover must be a minimum of 15mm for lightweight concrete and 25mm for normal weight concrete. Mesh laps are to be 300mm for A142 mesh and 400mm for A193, A252 & A393 mesh.

##### Fire

For details of the performance of composite slabs comprising ComFlor® 51 decking under a fire condition with nominal anti-crack mesh, please contact the technical team. For other simplified design cases or for full fire engineering, refer to the ComFlor® software.

##### Technical services

The Technical Department at Tata Steel offers a comprehensive advisory service on design of composite flooring, which is available to all specifiers and users. Should queries arise which are not covered by this literature or by the ComFlor® software, please contact us.