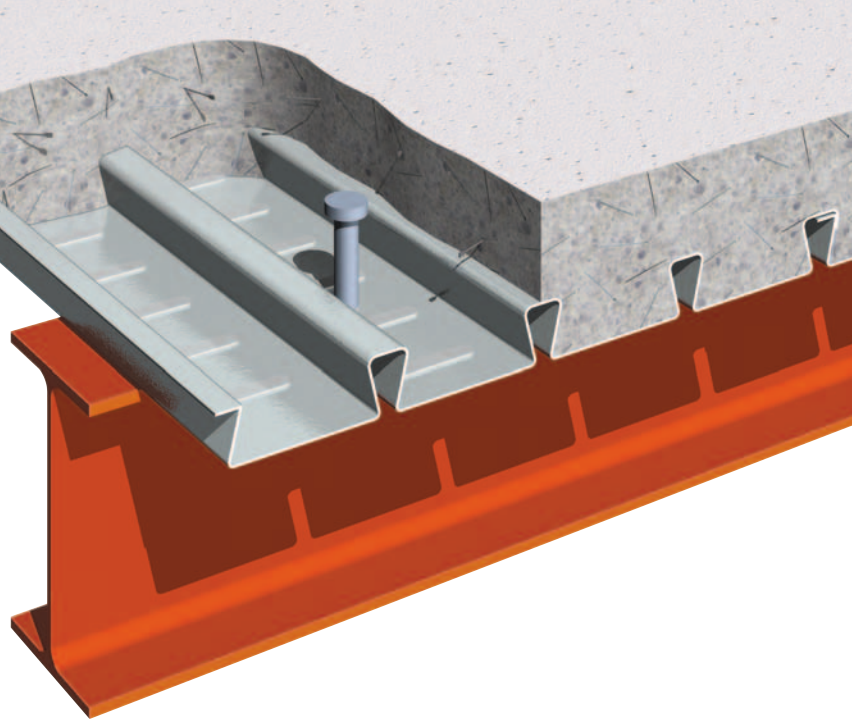


# ComFlor 51

From our shallow composite profile range

**ComFlor 51** is a traditional dovetail re-entrant composite floor deck. This profile provides an excellent mechanical key into the concrete slab, offering a strong shear bond performance, which is augmented by cross stiffeners located in the profile trough. ComFlor 51 presents a virtually flat soffit and a relatively thin slab is required to meet fire design requirements.



## ✓ Shear studs

The wide trough of ComFlor 51 permits a flexible and efficient placement of shear studs.

## ✓ Fire performance of the composite beams

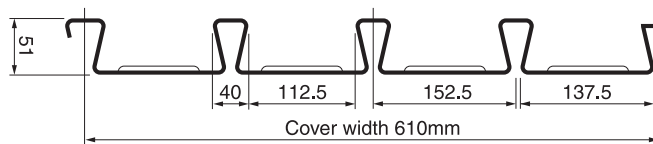
Even for two hours fire rating, the top flange of the steel beam does not require fire protection, when used with ComFlor 51 composite deck.

## ✓ Under floor services

Services are easy to attach to ComFlor 51, with the ribs presenting a dovetailed recessed groove in the concrete slab at 152.5mm centres. This provides the perfect connection for service hangers via a wedge nut or similar type device.

## ✓ Fire performance of the slab

The dovetail presents a very small opening and contributes little to the transfer of heat through the slab in the event of fire. Thus a lesser slab depth is needed for fire design purposes.



Composite Slab - Volume & 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

## Volume & weight table 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) 2400 kg/m<sup>3</sup>  
Normal weight (dry) 2350 kg/m<sup>3</sup>  
Lightweight (wet) 1900 kg/m<sup>3</sup>  
Lightweight (dry) 1800 kg/m<sup>3</sup>

Section Properties (per metre width)

Nominal thickness (mm)	Design thickness (mm)	Profile weight (kN/m <sup>2</sup> )	Area of steel (mm <sup>2</sup> /m)	Height to neutral axis (mm)	Moment of inertia (cm <sup>4</sup> /m)	Ultimate Moment capacity (kNm/m)	
						Sagging	Hogging
0.90	0.86	0.13	1579	16.74	55.70	5.69	6.99
1.00	0.96	0.14	1759	16.73	62.10	6.34	7.93
1.10	1.06	0.16	1938	16.73	68.50	7.00	8.88
1.20	1.16	0.17	2118	16.72	74.90	7.65	9.81

ComFlor 51 Span table - Normal weight Concrete

Props	Span	Fire Rating	Slab Depth (mm)	Mesh	MAXIMUM SPAN (m)											
					Deck Thickness/Gauge (mm)											
					0.9			1.0			1.1			1.2		
Total Applied Load (kN/m <sup>2</sup> )																
			3.5	5.0	10.0	3.5	5.0	10.0	3.5	5.0	10.0	3.5	5.0	10.0		
No Temporary props	Simple span slab & deck	1 hr	101	A142	2.8	2.8	2.5	2.9	2.9	2.6	3.1	3.1	2.7	3.2	3.2	2.8
		1.5 hr	110	A142	2.7	2.7	2.2	2.9	2.9	2.3	3.0	3.0	2.4	3.1	3.0	2.4
			125	A193	2.6	2.5	2.0	2.7	2.5	2.0	2.8	2.6	2.0	2.9	2.6	2.1
		2 hr	200	A393	2.2	2.2	2.2	2.4	2.4	2.4	2.5	2.5	2.5	2.6	2.6	2.6
			240	A393	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.3	2.4	2.4	2.4
	Double span slab & deck	1 hr	101	A142	3.2	3.2	2.6	3.4	3.4	2.7	3.5	3.5	2.8	3.7	3.7	3.0
		1.5 hr	110	A142	3.2	3.2	2.5	3.3	3.3	2.6	3.5	3.3	2.7	3.6	3.4	2.7
			125	A193	3.1	3.0	2.4	3.2	3.1	2.4	3.3	3.1	2.5	3.4	3.2	2.5
		2 hr	200	A393	2.6	2.6	2.6	2.8	2.8	2.8	2.9	2.9	2.9	3.0	3.0	3.0
			240	A393	2.4	2.4	2.4	2.6	2.6	2.6	2.7	2.7	2.7	2.8	2.8	2.8
1 Line of Temporary props	Simple span slab	1 hr	101	A252	3.6	3.1	2.4	3.8	3.3	2.5	3.9	3.5	2.7	4.0	3.6	2.8
			110	A252	3.7	3.3	2.5	3.8	3.4	2.6	4.0	3.5	2.8	4.1	3.7	2.9
			125	A393	3.8	3.4	2.6	4.1	3.6	2.8	4.3	3.8	2.9	4.4	4.0	3.1
		1.5 hr	110	A252	3.2	2.9	2.2	3.3	3.0	2.3	3.4	3.0	2.4	3.5	3.1	2.4
			125	A393	3.5	3.2	2.5	3.6	3.3	2.6	3.7	3.3	2.6	3.8	3.4	2.7
	Double span slab	2 hr	125	A393	3.0	2.7	2.1	3.1	2.8	2.2	3.1	2.8	2.2	3.1	2.8	2.2
			200	2xA393	3.0	2.8	2.3	3.1	2.8	2.3	3.2	2.9	2.4	3.2	3.0	2.4
			240	2xA393	3.0	2.8	2.3	3.1	2.9	2.4	3.2	3.0	2.4	3.3	3.0	2.5
		1 hr	101	A252	3.6	3.1	2.4	3.8	3.3	2.5	3.9	3.5	2.7	4.1	3.6	2.8
			110	A252	3.7	3.3	2.5	3.9	3.4	2.6	4.1	3.6	2.8	4.2	3.8	2.9
Double span slab	1.5 hr	125	A393	3.8	3.4	2.6	4.1	3.6	2.8	4.3	3.8	2.9	4.4	4.0	3.1	
		110	A252	3.7	3.3	2.5	3.9	3.4	2.6	4.0	3.5	2.8	4.0	3.6	2.8	
		125	A393	3.8	3.4	2.6	4.1	3.6	2.8	4.3	3.8	2.9	4.4	4.0	3.1	
	2 hr	125	A393	3.6	3.2	2.5	3.6	3.3	2.6	3.7	3.3	2.6	3.7	3.3	2.6	
		200	2xA393	4.4	4.0	3.2	4.7	4.3	3.4	4.8	4.4	3.6	4.8	4.4	3.6	
	240	2xA393	4.6	4.3	3.5	4.9	4.5	3.7	5.2	4.7	3.8	5.4	5.0	4.0		

Comflor Novomesh CMD fire performance - Normal weight Concrete

		Fire resistance - 60 mins						Concrete Grade - C28/35		
		Deck Strength - 350 N/mm <sup>2</sup>								
Slab Depth (mm)		Deck thickness (mm)								
		0.9			1.0			1.2		
		Unfactored Imposed Load								
		4.0	5.0	10.0	4.0	5.0	10.0	4.0	5.0	10.0
110		3250	3031	2383	3328	3109	2445	3516	3289	2586
120		3406	3195	2523	3500	3281	2594	3680	3445	2719
130		3570	3344	2656	3656	3430	2727	3836	3602	2859
140		3734	3508	2797	3813	3586	2859	3977	3734	2984
150		3891	3664	2938	3953	3727	2984	4125	3891	3117
200		4445	4219	3453	4516	4281	3508	4656	4414	3617