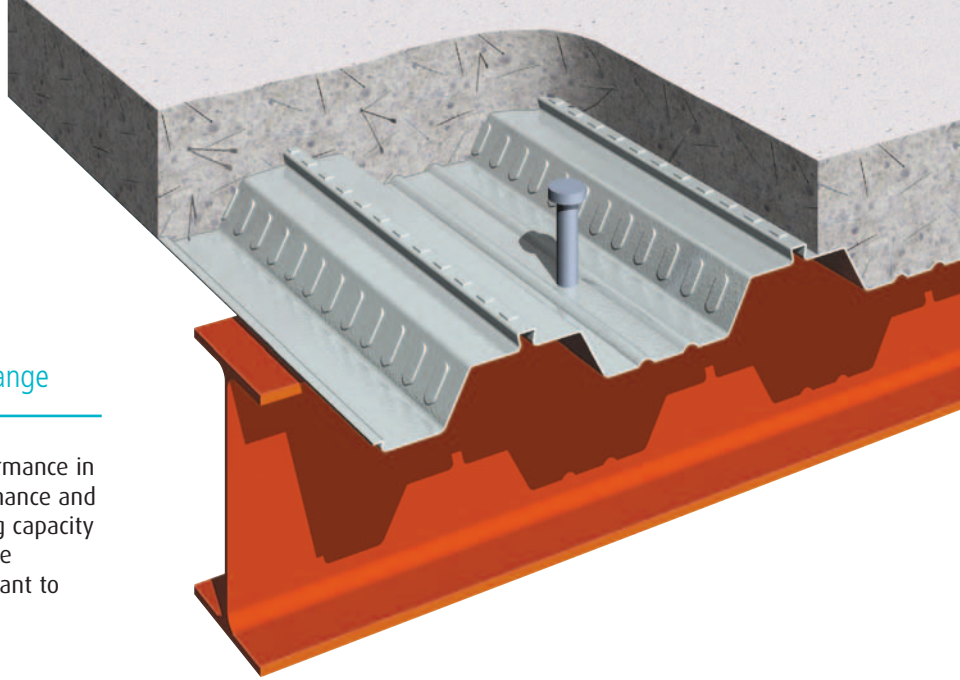


# ComFlor 70

From our shallow composite profile range

**ComFlor 70** is designed for optimum performance in span capacity, economy, composite performance and concrete usage. The economy and spanning capacity of a trapezoidal profile is combined with the interlocking shear performance of a re-entrant to give major performance advantages.



## ✓ Standard shear studs are fully effective with ComFlor 70

The profile is 70mm deep, including the top re-entrant section, but the height of the main trapezoidal section at 55mm defines the critical zone projecting from the base of the shear connector to the web-to-flange junction of the profile. This point was confirmed in The Steel Construction Institute note AD147, following tests. The shear connector should project at least 35mm above the main trapezoidal section, meaning that a standard 95mm stud is conservatively adequate for use with ComFlor 70 profile.

## ✓ Low cost and fast service connection

Low cost connector devices can be used with the small sized re-entrant, for the hanging of ceilings and services direct to the profile.

## ✓ Optimum shear stud placement

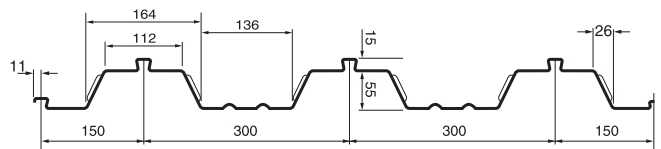
The arrangement of stiffeners in the ComFlor 70 trough allows shear studs to be positioned centre trough, which makes them fully effective in both directions, for composite beam design i.e. no reductions in stud capacity due to deck geometry.

## ✓ Reduced slab depth and concrete usage

The slab depth required for fire and structural design is minimised by the profile design. The concrete usage is further reduced by the profile shape, which eliminates another effective 26mm from the slab depth. Reduced slab depth and concrete usage results in lower overall floor height, lower dead load structure and foundations, lower concrete cost.

## ✓ Fire properties of 55mm deep profile

Not only can the top re-entrant section be disregarded for stud design, tests have also confirmed that it is too small to contribute to the transmission of heat energy through the slab in a fire. Taking the effective profile height as 55mm results in a reduced overall slab depth being required for any particular fire rating.



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 Wet	Normal weight Concrete Dry	Lightweight Concrete Wet	Lightweight Concrete Dry
115	0.090	2.11	2.07	1.67	1.58
120	0.095	2.23	2.18	1.77	1.67
125	0.100	2.35	2.30	1.86	1.76
130	0.105	2.47	2.41	1.95	1.85
135	0.110	2.58	2.53	2.04	1.94
150	0.125	2.94	2.87	2.32	2.20
160	0.135	3.17	3.11	2.51	2.38
180	0.155	3.64	3.57	2.88	2.73
200	0.175	4.11	4.03	3.26	3.08
250	0.225	5.29	5.18	4.19	3.97

## 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	0.10	1178	30.34	54.80	6.18	6.18
1.00	0.96	0.11	1312	30.33	61.80	7.94	7.94
1.10	1.06	0.12	1445	30.33	68.80	9.70	9.70
1.20	1.16	0.13	1578	30.32	76.00	11.48	11.48

ComFlor 70 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	125	A142	2.8	2.8	2.4	3.0	3.0	2.4	3.1	3.1	2.5	3.2	3.2	2.6
		1.5 hr	135	A193	2.7	2.7	2.2	3.0	2.8	2.3	3.1	2.9	2.3	3.2	3.0	2.4
			150	A193	2.6	2.5	2.0	2.8	2.6	2.0	2.8	2.6	2.1	2.9	2.7	2.1
		2 hr	200	A393	2.4	2.4	2.4	2.7	2.7	2.6	2.7	2.7	2.6	2.8	2.8	2.6
			250	A393	2.2	2.2	2.2	2.5	2.5	2.5	2.6	2.6	2.6	2.6	2.6	2.6
	Double span slab & deck	1 hr	125	A142	3.2	3.2	2.8	3.4	3.4	2.8	3.8	3.7	2.9	4.0	3.7	3.0
		1.5 hr	135	A193	3.1	3.1	2.7	3.3	3.3	2.7	3.7	3.5	2.8	3.9	3.5	2.8
			150	A193	2.9	2.9	2.5	3.3	3.1	2.5	3.5	3.2	2.5	3.5	3.2	2.6
		2 hr	200	A393	2.5	2.5	2.5	2.9	2.9	2.9	3.2	3.2	3.2	3.5	3.5	3.5
			250	A393	2.1	2.1	2.1	2.5	2.5	2.5	2.8	2.8	2.8	3.2	3.2	3.2
1 Line of Temporary props	Simple span slab		125	A393	3.8	3.4	2.6	3.9	3.5	2.7	3.9	3.5	2.8	4.0	3.6	2.8
		1 hr	135	A393	3.8	3.4	2.7	3.9	3.5	2.7	4.0	3.5	2.8	4.1	3.6	2.9
			150	A393	3.8	3.4	2.7	3.9	3.5	2.8	3.9	3.6	2.9	4.1	3.7	2.9
		1.5 hr	135	A393	3.4	3.1	2.4	3.5	3.1	2.5	3.5	3.2	2.5	3.6	3.2	2.5
			150	A393	3.4	3.1	2.5	3.5	3.2	2.5	3.6	3.2	2.5	3.6	3.3	2.6
	Double span slab	2 hr	150	A393	3.1	2.8	2.2	3.2	2.9	2.3	3.2	2.9	2.3	3.2	2.9	2.3
			200	2xA393	2.8	2.6	2.1	2.8	2.6	2.1	2.9	2.6	2.1	3.0	2.7	2.1
			250	2xA393	2.7	2.5	2.1	2.7	2.5	2.1	2.8	2.6	2.1	2.8	2.6	2.2
		1 hr	125	A393	4.3	3.8	2.8	4.5	4.0	2.9	4.7	4.1	3.1	4.8	4.3	3.2
			135	A393	4.5	3.9	2.9	4.7	4.1	3.0	4.9	4.3	3.2	5.0	4.5	3.3
	Double span slab		150	A393	4.7	4.1	3.1	4.9	4.3	3.2	5.1	4.5	3.4	5.2	4.7	3.5
		1.5 hr	135	A393	4.0	3.6	2.8	4.1	3.7	2.9	4.2	3.7	2.9	4.2	3.8	3.0
			150	A393	4.2	3.8	3.0	4.3	3.9	3.1	4.4	3.9	3.1	4.4	4.0	3.2
			150	A393	3.7	3.3	2.6	3.8	3.4	2.7	3.8	3.4	2.7	3.8	3.5	2.7
		2 hr	200	2xA393	4.2	3.8	3.1	4.2	3.8	3.1	4.2	3.9	3.1	4.2	3.9	3.1
	250	2xA393	3.8	3.8	3.7	4.3	4.3	3.7	4.9	4.6	3.8	5.0	4.6	3.8		

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
125		3594	3352	2625	3703	3453	2703	3930	3664	2859
130		3680	3438	2695	3797	3547	2781	4016	3750	2938
140		3836	3594	2836	3953	3695	2922	4188	3922	3094
150		3977	3734	2961	4102	3852	3055	4328	4063	3227
200		4523	4281	3477	4633	4383	3563	4836	4578	3719

Comflor Novomesh CMD fire performance - Normal weight Concrete

		Fire resistance - 90 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
135		3008	2602	2219	3070	2656	2266	3250	2805	2391
140		3133	2719	2328	3211	2781	2383	3391	2938	2508
150		3406	2961	2547	3477	3031	2602	3625	3156	2711
200		4234	3766	3289	4281	3813	3328	4430	3938	3445