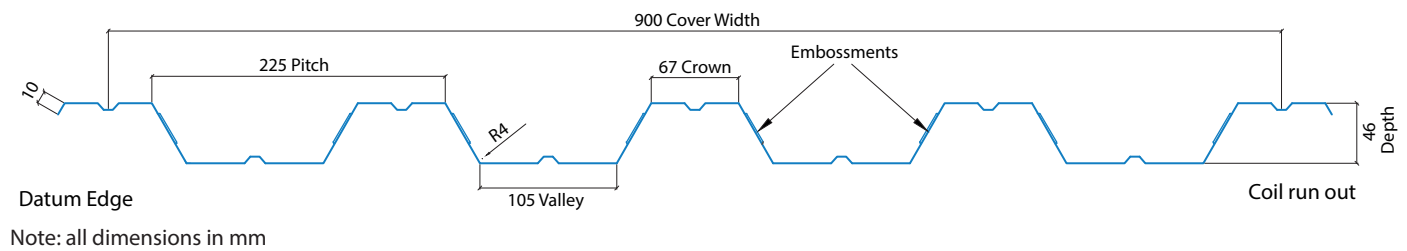


Load/span tables

ComFlor® 46 Profile - 0.90 and 1.20mm steel 280N/mm²

ComFlor® 46 was our first composite flooring profile, introduced in the early 1980s and is still popular today for its primary characteristics of being nestable, easily transported, simple and efficient. It is particularly suited for export or difficult access sites, due to the large area of flooring that will fit into a container and because the deck is fast and easy to lay.



The quick reference load/span tables for ComFlor® 46 are intended as a guide for initial design. Detailed design can be carried out using the new ComFlor® 9 design software to British Standard only. (For Eurocode tables please refer to the Technical Department for assistance.)

The tables are designed to optimise the span in the construction stage, with the minimum amount of reinforcement needed to achieve the relevant imposed loading and fire resistance. However, in certain conditions where slender slabs are subjected to the higher imposed loads (and depending on

whether Mesh and Deck Fire Method or Bar Fire Method is selected for fire resistance), then the limiting design mechanism becomes associated with the normal stage slab bending and/or vertical shear capacity, and not construction stage.

The total applied loads stated in the British Standard tables covers an allowable unfactored total load of either 5.00, 7.50 or 10.00kN/m², which represents three typical cases, as specified in the following table. The total load combination is made up of an imposed live load, ceilings and services, finishes and partition loads. However the dead

load of the slab itself has already been taken into account and need not be considered as part of the applied load.

Loading Combination (kN/m²)

Category	1	2	3
Imposed	3.00	4.00	7.50
C & S	0.50	1.00	1.00
Finishes	0.50	1.50	1.50
Partitions	1.00	1.00	0.00
TOTAL	5.00	7.50	10.00

ComFlor® 46 normal weight concrete – using mesh / Unpropped / British Standard

Single-span slab (m) - Bar Fire Method - Beam width 152mm

Note: A single-span deck will require trough bar reinforcement whether the concrete slab is single or continuous span, using Bar Fire Method.

Props	Fire period	Slab depth (mm)	Mesh 0.1% min.reqd.	Total applied load (kN/m ²)					
				5.00	7.50	10.00	5.00	7.50	10.00
				0.90mm			1.20mm		
None	60 minutes	120	A142	2.47 (8)	2.47 (8)	2.47 (8)	2.80 (8)	2.80 (8)	2.80 (10)
		130	A142	2.44 (8)	2.44 (8)	2.44 (8)	2.72 (8)	2.72 (8)	2.72 (10)
		140	A142	2.37 (8)	2.37 (8)	2.37 (8)	2.65 (8)	2.65 (8)	2.65 (8)
		150	A142	2.31 (8)	2.31 (8)	2.31 (8)	2.59 (8)	2.59 (8)	2.59 (8)
		160	A142	2.25 (8)	2.25 (8)	2.25 (8)	2.53 (8)	2.53 (8)	2.53 (8)
		170	A193	2.19 (8)	2.19 (8)	2.19 (8)	2.47 (8)	2.47 (8)	2.47 (8)
		180	A193	2.15 (8)	2.15 (8)	2.15 (8)	2.42 (8)	2.42 (8)	2.42 (8)
		190	A193	2.10 (8)	2.10 (8)	2.10 (8)	2.37 (8)	2.37 (8)	2.37 (8)
		200	A193	2.06 (8)	2.06 (8)	2.06 (8)	2.33 (8)	2.33 (8)	2.33 (8)
None	90 minutes	130	A142	2.44 (8)	2.43 (10)	2.43 (10)	2.72 (8)	2.72 (10)	2.71 (12)
		140	A142	2.37 (8)	2.37 (8)	2.36 (10)	2.65 (8)	2.65 (10)	2.65 (10)
		150	A142	2.31 (8)	2.31 (8)	2.30 (10)	2.59 (8)	2.59 (10)	2.59 (10)
		160	A142	2.25 (8)	2.25 (8)	2.25 (8)	2.53 (8)	2.53 (8)	2.53 (10)
		170	A193	2.19 (8)	2.19 (8)	2.19 (8)	2.47 (8)	2.47 (8)	2.47 (10)
		180	A193	2.15 (8)	2.15 (8)	2.15 (8)	2.42 (8)	2.42 (8)	2.42 (8)
		190	A193	2.10 (8)	2.10 (8)	2.10 (8)	2.37 (8)	2.37 (8)	2.37 (8)
		200	A193	2.06 (8)	2.06 (8)	2.06 (8)	2.33 (8)	2.33 (8)	2.33 (8)
None	120 minutes	140	A142	2.36 (10)	2.36 (10)	2.36 (12)	2.65 (10)	2.65 (12)	2.65 (12)
		150	A142	2.31 (8)	2.30 (10)	2.30 (10)	2.59 (10)	2.58 (12)	2.58 (12)
		160	A142	2.25 (8)	2.25 (10)	2.24 (10)	2.53 (10)	2.53 (10)	2.52 (12)
		170	A193	2.19 (8)	2.19 (10)	2.19 (10)	2.47 (10)	2.47 (10)	2.47 (12)
		180	A193	2.15 (8)	2.15 (8)	2.14 (10)	2.42 (8)	2.42 (10)	2.42 (10)
		190	A193	2.10 (8)	2.10 (8)	2.10 (10)	2.37 (8)	2.37 (10)	2.37 (10)
		200	A193	2.06 (8)	2.06 (8)	2.06 (8)	2.33 (8)	2.33 (10)	2.33 (10)

Double-span slab (m) - Bar Fire Method - Beam width 152mm

Props	Fire period	Slab depth (mm)	Mesh 0.1% min.reqd.	Total applied load (kN/m ²)					
				5.00	7.50	10.00	5.00	7.50	10.00
				0.90mm			1.20mm		
None	60 minutes	120	A142	2.96 (8)	2.95 (10)	2.95 (10)	3.26 (8)	3.25 (10)	3.25 (12)
		130	A142	2.86 (8)	2.86 (8)	2.86 (10)	3.21 (8)	3.21 (10)	3.21 (10)
		140	A142	2.78 (8)	2.78 (8)	2.78 (10)	3.18 (8)	3.18 (10)	3.18 (10)
		150	A142	2.70 (8)	2.70 (8)	2.70 (8)	3.11 (8)	3.11 (8)	3.10 (10)
		160	A142	2.61 (8)	2.61 (8)	2.61 (8)	3.04 (8)	3.04 (8)	3.03 (10)
		170	A193	2.52 (8)	2.52 (8)	2.52 (8)	2.97 (8)	2.97 (8)	2.97 (8)
		180	A193	2.44 (8)	2.44 (8)	2.44 (8)	2.89 (8)	2.89 (8)	2.89 (8)
		190	A193	2.37 (8)	2.37 (8)	2.37 (8)	2.83 (8)	2.83 (8)	2.83 (8)
		200	A193	2.30 (8)	2.30 (8)	2.30 (8)	2.77 (8)	2.77 (8)	2.77 (8)
None	90 minutes	130	A142	2.86 (10)	2.86 (10)	2.85 (12)	3.21 (10)	3.21 (12)	3.20 (16)
		140	A142	2.78 (10)	2.78 (10)	2.77 (12)	3.18 (10)	3.17 (12)	3.17 (12)
		150	A142	2.70 (8)	2.70 (10)	2.70 (10)	3.10 (10)	3.10 (10)	3.10 (12)
		160	A142	2.61 (8)	2.61 (10)	2.61 (10)	3.03 (10)	3.03 (10)	3.03 (12)
		170	A193	2.52 (8)	2.52 (8)	2.52 (10)	2.96 (10)	2.96 (10)	2.96 (12)
		180	A193	2.44 (8)	2.44 (8)	2.44 (10)	2.89 (8)	2.89 (10)	2.89 (10)
		190	A193	2.37 (8)	2.37 (8)	2.37 (8)	2.83 (8)	2.83 (10)	2.83 (10)
		200	A193	2.30 (8)	2.30 (8)	2.30 (8)	2.77 (8)	2.77 (8)	2.77 (10)
None	120 minutes	140	A142	2.78 (10)	2.77 (12)	2.76 (16)	3.17 (12)	3.16 (16)	3.16 (16)
		150	A142	2.70 (10)	2.69 (12)	2.69 (12)	3.10 (12)	3.09 (16)	3.09 (16)
		160	A142	2.61 (10)	2.60 (12)	2.60 (12)	3.03 (12)	3.03 (12)	3.02 (16)
		170	A193	2.52 (10)	2.52 (10)	2.51 (12)	2.96 (10)	2.96 (12)	2.95 (16)
		180	A193	2.44 (8)	2.44 (10)	2.44 (10)	2.89 (10)	2.89 (12)	2.89 (12)
		190	A193	2.37 (8)	2.37 (10)	2.37 (10)	2.83 (10)	2.82 (12)	2.82 (12)
		200	A193	2.30 (8)	2.30 (10)	2.30 (10)	2.77 (10)	2.77 (10)	2.76 (12)

Multi-span (m) - Bar Fire Method - Beam width 152mm

Props	Fire period	Slab depth (mm)	Mesh 0.1% min.reqd.	Total applied load (kN/m ²)					
				5.00	7.50	10.00	5.00	7.50	10.00
				0.90mm			1.20mm		
None	60 minutes	120	A142	2.89 (8)	2.89 (10)	2.89 (10)	3.26 (8)	3.26 (10)	3.25 (12)
		130	A142	2.87 (8)	2.87 (8)	2.86 (10)	3.18 (8)	3.18 (10)	3.18 (10)
		140	A142	2.81 (8)	2.81 (8)	2.81 (10)	3.11 (8)	3.11 (10)	3.11 (10)
		150	A142	2.73 (8)	2.73 (8)	2.73 (8)	3.04 (8)	3.04 (8)	3.04 (10)
		160	A142	2.66 (8)	2.66 (8)	2.66 (8)	3.02 (8)	3.02 (8)	3.01 (10)
		170	A193	2.59 (8)	2.59 (8)	2.59 (8)	2.96 (8)	2.96 (8)	2.96 (8)
		180	A193	2.52 (8)	2.52 (8)	2.52 (8)	2.90 (8)	2.90 (8)	2.90 (8)
		190	A193	2.44 (8)	2.44 (8)	2.44 (8)	2.85 (8)	2.85 (8)	2.85 (8)
		200	A193	2.37 (8)	2.37 (8)	2.37 (8)	2.80 (8)	2.80 (8)	2.80 (8)
None	90 minutes	130	A142	2.86 (10)	2.86 (10)	2.86 (12)	3.18 (10)	3.17 (12)	3.17 (12)
		140	A142	2.81 (10)	2.81 (10)	2.80 (12)	3.11 (10)	3.10 (12)	3.10 (12)
		150	A142	2.73 (8)	2.73 (10)	2.73 (10)	3.04 (10)	3.04 (10)	3.04 (12)
		160	A142	2.66 (8)	2.66 (10)	2.66 (10)	3.01 (10)	3.01 (10)	3.01 (12)
		170	A193	2.59 (8)	2.59 (8)	2.59 (10)	2.96 (8)	2.96 (10)	2.96 (10)
		180	A193	2.52 (8)	2.52 (8)	2.52 (10)	2.90 (8)	2.90 (10)	2.90 (10)
		190	A193	2.44 (8)	2.44 (8)	2.44 (8)	2.85 (8)	2.85 (10)	2.85 (10)
		200	A193	2.37 (8)	2.37 (8)	2.37 (8)	2.80 (8)	2.80 (8)	2.80 (10)
None	120 minutes	140	A142	2.81 (10)	2.80 (12)	2.79 (16)	3.10 (12)	3.09 (16)	3.09 (16)
		150	A142	2.73 (10)	2.72 (12)	2.72 (12)	3.04 (12)	3.04 (12)	3.03 (16)
		160	A142	2.66 (10)	2.65 (12)	2.65 (12)	3.01 (12)	3.01 (12)	3.00 (16)
		170	A193	2.59 (10)	2.59 (10)	2.59 (12)	2.96 (10)	2.96 (12)	2.95 (16)
		180	A193	2.52 (10)	2.52 (10)	2.51 (12)	2.90 (10)	2.90 (12)	2.90 (12)
		190	A193	2.44 (8)	2.44 (10)	2.44 (10)	2.85 (10)	2.85 (12)	2.85 (12)
		200	A193	2.37 (8)	2.37 (10)	2.37 (10)	2.80 (10)	2.80 (10)	2.79 (12)

Spans are based on beam centres, with a 152mm flange width and a minimum end bearing of 50mm.

Double span (m) - Simple Mesh and Deck Fire Method - Beam width 152mm

Props	Fire period	Slab depth (mm)	Mesh 0.1% min.reqd.	Total applied load (kN/m ²)					
				5.00	7.50	10.00	5.00	7.50	10.00
				0.90mm			1.20mm		
None	60 minutes	120	A142	2.97 (A142)	2.97 (A142)	2.96 (A252)	3.26 (A142)	3.26 (A193)	3.26 (A252)
		130	A142	2.87 (A142)	2.87 (A142)	2.87 (A193)	3.22 (A142)	3.22 (A142)	3.22 (A252)
		140	A142	2.79 (A142)	2.79 (A142)	2.79 (A142)	3.19 (A142)	3.19 (A142)	3.19 (A193)
		150	A142	2.71 (A142)	2.71 (A142)	2.71 (A142)	3.11 (A142)	3.11 (A142)	3.11 (A193)
		160	A142	2.62 (A142)	2.62 (A142)	2.62 (A142)	3.04 (A142)	3.04 (A142)	3.04 (A142)
		170	A193	2.53 (A193)	2.53 (A193)	2.53 (A193)	2.97 (A193)	2.97 (A193)	2.97 (A193)
		180	A193	2.45 (A193)	2.45 (A193)	2.45 (A193)	2.90 (A193)	2.90 (A193)	2.90 (A193)
		190	A193	2.38 (A193)	2.38 (A193)	2.38 (A193)	2.83 (A193)	2.83 (A193)	2.83 (A193)
		200	A193	2.31 (A193)	2.31 (A193)	2.31 (A193)	2.77 (A193)	2.77 (A193)	2.77 (A193)
None	90 minutes	130	A142	2.87 (A142)	2.87 (A193)	2.86 (A252)	3.22 (A142)	3.21 (A252)	3.21 (A393)
		140	A142	2.79 (A142)	2.79 (A142)	2.78 (A193)	3.19 (A142)	3.18 (A193)	3.18 (A252)
		150	A142	2.71 (A142)	2.71 (A142)	2.71 (A193)	3.11 (A142)	3.11 (A193)	3.11 (A252)
		160	A142	2.62 (A142)	2.62 (A142)	2.62 (A142)	3.04 (A142)	3.04 (A142)	3.04 (A193)
		170	A193	2.53 (A193)	2.53 (A193)	2.53 (A193)	2.97 (A193)	2.97 (A193)	2.97 (A193)
		180	A193	2.45 (A193)	2.45 (A193)	2.45 (A193)	2.90 (A193)	2.90 (A193)	2.90 (A193)
		190	A193	2.38 (A193)	2.38 (A193)	2.38 (A193)	2.83 (A193)	2.83 (A193)	2.83 (A193)
		200	A193	2.31 (A193)	2.31 (A193)	2.31 (A193)	2.77 (A193)	2.77 (A193)	2.77 (A193)
None	120 minutes	140	A142	2.79 (A142)	2.78 (A193)	2.78 (A252)	3.18 (A193)	3.18 (A252)	3.17 (A393)
		150	A142	2.71 (A142)	2.71 (A193)	2.70 (A252)	3.11 (A142)	3.11 (A252)	3.10 (A393)
		160	A142	2.62 (A142)	2.62 (A142)	2.62 (A193)	3.04 (A142)	3.04 (A193)	3.04 (A252)
		170	A193	2.53 (A193)	2.53 (A193)	2.53 (A193)	2.97 (A193)	2.97 (A193)	2.97 (A252)
		180	A193	2.45 (A193)	2.45 (A193)	2.45 (A193)	2.90 (A193)	2.90 (A193)	2.90 (A252)
		190	A193	2.38 (A193)	2.38 (A193)	2.38 (A193)	2.83 (A193)	2.83 (A193)	2.83 (A193)
		200	A193	2.31 (A193)	2.31 (A193)	2.31 (A193)	2.77 (A193)	2.77 (A193)	2.77 (A193)

Multi span (m) - Simple Mesh and Deck Fire Method - Beam width 152mm

Props	Fire period	Slab depth (mm)	Mesh 0.1% min.reqd.	Total applied load (kN/m ²)					
				5.00	7.50	10.00	5.00	7.50	10.00
				0.90mm			1.20mm		
None	60 minutes	120	A142	2.90 (A142)	2.90 (A142)	2.90 (A193)	3.27 (A142)	3.27 (A142)	3.26 (A252)
		130	A142	2.87 (A142)	2.87 (A142)	2.88 (A193)	3.19 (A142)	3.19 (A142)	3.19 (A193)
		140	A142	2.82 (A142)	2.82 (A142)	2.82 (A142)	3.12 (A142)	3.12 (A142)	3.11 (A193)
		150	A142	2.74 (A142)	2.74 (A142)	2.74 (A142)	3.05 (A142)	3.05 (A142)	3.05 (A142)
		160	A142	2.67 (A142)	2.67 (A142)	2.67 (A142)	3.02 (A142)	3.02 (A142)	3.02 (A142)
		170	A193	2.60 (A193)	2.60 (A193)	2.60 (A193)	2.97 (A193)	2.97 (A193)	2.97 (A193)
		180	A193	2.53 (A193)	2.53 (A193)	2.53 (A193)	2.91 (A193)	2.91 (A193)	2.91 (A193)
		190	A193	2.45 (A193)	2.45 (A193)	2.45 (A193)	2.86 (A193)	2.86 (A193)	2.86 (A193)
		200	A193	2.38 (A193)	2.38 (A193)	2.38 (A193)	2.80 (A193)	2.80 (A193)	2.80 (A193)
None	90 minutes	130	A142	2.87 (A142)	2.87 (A193)	2.87 (A252)	3.19 (A142)	3.19 (A193)	3.17 (A393)
		140	A142	2.82 (A142)	2.82 (A142)	2.81 (A193)	3.12 (A142)	3.11 (A193)	3.11 (A252)
		150	A142	2.74 (A142)	2.74 (A142)	2.74 (A193)	3.05 (A142)	3.05 (A142)	3.05 (A193)
		160	A142	2.67 (A142)	2.67 (A142)	2.67 (A142)	3.02 (A142)	3.02 (A142)	3.02 (A193)
		170	A193	2.60 (A193)	2.60 (A193)	2.60 (A193)	2.97 (A193)	2.97 (A193)	2.97 (A193)
		180	A193	2.53 (A193)	2.53 (A193)	2.53 (A193)	2.91 (A193)	2.91 (A193)	2.91 (A193)
		190	A193	2.45 (A193)	2.45 (A193)	2.45 (A193)	2.86 (A193)	2.86 (A193)	2.86 (A193)
		200	A193	2.38 (A193)	2.38 (A193)	2.38 (A193)	2.80 (A193)	2.80 (A193)	2.80 (A193)
None	120 minutes	140	A142	2.82 (A142)	2.81 (A193)	2.81 (A252)	3.11 (A193)	3.11 (A252)	3.10 (A393)
		150	A142	2.74 (A142)	2.74 (A193)	2.73 (A252)	3.05 (A142)	3.05 (A193)	3.04 (A252)
		160	A142	2.67 (A142)	2.67 (A142)	2.66 (A193)	3.02 (A142)	3.02 (A193)	3.02 (A252)
		170	A193	2.60 (A193)	2.60 (A193)	2.60 (A193)	2.97 (A193)	2.97 (A193)	2.96 (A252)
		180	A193	2.53 (A193)	2.53 (A193)	2.53 (A193)	2.91 (A193)	2.91 (A193)	2.91 (A193)
		190	A193	2.45 (A193)	2.45 (A193)	2.45 (A193)	2.86 (A193)	2.86 (A193)	2.86 (A193)
		200	A193	2.38 (A193)	2.38 (A193)	2.38 (A193)	2.80 (A193)	2.80 (A193)	2.80 (A193)

Spans are based on beam centres, with a 152mm flange width and a minimum end bearing of 50mm.

ComFlor® 46 normal weight concrete – using mesh / Propped / British Standard

Propped deck, single or continuous slab (m) - Bar Fire Method - Beam width 152mm

(Note: For Simple Mesh and Deck Fire Method) load/span tables, please refer to the Technical Department.)

Props	Fire period	Slab depth (mm)	Mesh 0.1% min.reqd.	Total applied load (kN/m ²)					
				5.00	7.50	10.00	5.00	7.50	10.00
1 line	60 minutes	120	A142	4.79 (32)	4.40 (32)	4.05 (32)	4.85 (32)	4.46 (32)	4.18 (32)
		130	A142	4.80 (16)	4.66 (32)	4.28 (25)	5.20 (32)	4.79 (32)	4.49 (32)
		140	A142	4.68 (12)	4.66 (16)	4.47 (20)	5.50 (32)	5.11 (32)	4.79 (32)
		150	A142	4.53 (12)	4.51 (16)	4.51 (16)	5.49 (16)	5.35 (32)	5.09 (32)
		160	A142	4.39 (12)	4.39 (12)	4.37 (16)	5.35 (16)	5.33 (16)	5.22 (25)
		170	A193	4.26 (10)	4.26 (12)	4.24 (16)	5.22 (12)	5.20 (16)	5.20 (16)
		180	A193	4.15 (10)	4.14 (12)	4.14 (12)	5.08 (12)	5.06 (16)	5.06 (16)
		190	A193	4.04 (10)	4.04 (10)	4.03 (12)	4.95 (12)	4.93 (16)	4.93 (16)
1 line	90 minutes	200	A193	3.93 (10)	3.93 (10)	3.93 (12)	4.83 (12)	4.83 (12)	4.81 (16)
		130	A142	4.80 (16)	4.66 (32)	4.28 (25)	5.20 (32)	4.79 (32)	4.49 (32)
		140	A142	4.66 (16)	4.63 (20)	4.47 (20)	5.50 (32)	5.11 (32)	4.79 (32)
		150	A142	4.51 (16)	4.51 (16)	4.48 (20)	5.47 (20)	5.35 (32)	5.09 (32)
		160	A142	4.37 (16)	4.37 (16)	4.35 (20)	5.35 (16)	5.32 (20)	5.22 (25)
		170	A193	4.24 (16)	4.24 (16)	4.24 (16)	5.20 (16)	5.17 (20)	5.17 (20)
		180	A193	4.14 (12)	4.12 (16)	4.12 (16)	5.08 (16)	5.03 (20)	5.03 (20)
		190	A193	4.03 (12)	4.02 (16)	4.02 (16)	4.93 (16)	4.93 (16)	4.91 (20)
1 line	120 minutes	200	A193	3.93 (12)	3.93 (12)	3.91 (16)	4.81 (16)	4.81 (16)	4.79 (20)
		140	A142	4.63 (20)	4.59 (25)	4.47 (25)	5.50 (32)	5.11 (32)	4.79 (32)
		150	A142	4.48 (20)	4.48 (20)	4.44 (25)	5.43 (25)	5.35 (32)	5.09 (32)
		160	A142	4.37 (16)	4.35 (20)	4.35 (20)	5.32 (20)	5.27 (25)	5.22 (25)
		170	A193	4.24 (16)	4.22 (20)	4.22 (20)	5.17 (20)	5.13 (25)	5.13 (25)
		180	A193	4.12 (16)	4.12 (16)	4.10 (20)	5.03 (20)	5.03 (20)	5.00 (25)
		190	A193	4.02 (16)	4.02 (16)	4.00 (20)	4.91 (20)	4.91 (20)	4.87 (25)
200	A193	3.91 (16)	3.91 (16)	3.91 (16)	4.80 (16)	4.79 (20)	4.79 (20)		

Further help and advice

Tata Steel offers a comprehensive advisory service on the design of composite flooring, available free of charge to specifiers and designers.

Please contact the Technical Department reference the loading method for the current British Standard tables or any other technical queries not covered by this datasheet or by the ComFlor® 9 software on T: +44 (0) 1244 892199

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