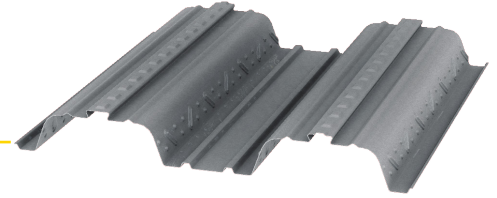


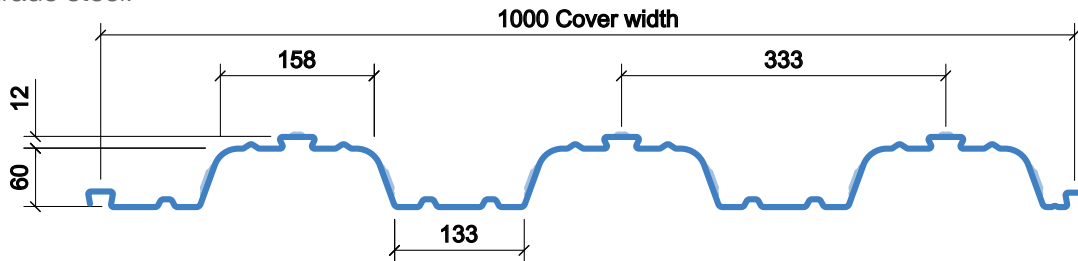
## TR60<sup>+</sup>™

### Floor deck profile



### Deck profile

The TR60 profile was SMD's first trapezoidal profile, added to our product range in 1992. Further research and development in recent years has seen our trapezoidal products evolve into the TR+ range. The TR60+ profile enables un-propped spans in excess of 3.5m and is available in 0.9mm, 1.0mm and 1.2mm gauges in both S350 and S450 grade steel.



### Options

- Reduced concrete volume
- Enhanced speed of installation due to the 1.0m cover width
- Trough stiffeners positioned to ensure central stud position, reducing amount of site checking required
- The steel cross sectional area of this profile makes it the most economical option of the three available profiles
- Soffit 'Wedge Nut' fixings available with load capacity of up to 1kN
- Acoustic Robust Solution – Refer Robust Details Handbook ([www.robustdetails.com](http://www.robustdetails.com))
- Product options include **HIGH DURABILITY HD** steel coating & TAB-Deck™ fibre concrete solution

### Concrete volume and weight

Slab Depth mm	Volume of Concrete m <sup>3</sup> /m <sup>2</sup>	Weight of Concrete (Normal Weight)		Weight of Concrete (Lightweight)	
		Wet (kN/m <sup>2</sup> )	Dry (kN/m <sup>2</sup> )	Wet (kN/m <sup>2</sup> )	Dry (kN/m <sup>2</sup> )
120	0.086	2.02	1.98	1.60	1.52
130	0.096	2.26	2.21	1.79	1.70
140	0.106	2.50	2.44	1.98	1.87
150	0.116	2.73	2.67	2.16	2.05
175	0.141	3.32	3.25	2.63	2.49
200	0.166	3.91	3.83	3.09	2.93
225	0.191	4.50	4.40	3.56	3.37
250	0.216	5.09	4.98	4.03	3.81

Deflection – This table is based on concrete poured to a constant thickness and does not take account for deflection of the decking or supporting beams (as a guide, to account for the deflection of the decking, a concrete volume of span/250 should be added to the figures indicated). Concrete Weight – These tables indicate concrete weight only and do not include the weight of decking or reinforcement. Concrete weights are based on the concrete densities specified in BS5950 Part 4 clause 3.3.3 as follows: Normal Weight Concrete – 2400kg/m<sup>3</sup> (wet) and 2350 kg/m<sup>3</sup> (dry). Lightweight Concrete – 1900kg/m<sup>3</sup> (wet) and 1800 kg/m<sup>3</sup> (dry).

### Profile properties

Nominal Thickness mm	Design Thickness (bare steel) mm	Available Grades N/mm <sup>2</sup>	Depth of Profile mm	Weight of Profile kg/m <sup>2</sup>	Weight of Profile kN/m <sup>2</sup>	Height of Neutral axis mm	Area of Steel mm <sup>2</sup> /m	Moment of Inertia cm <sup>4</sup> /m
0.9	0.86	S350 or S450	60 / 72*	10.03	0.098	33.6	1216	93.5
1.0	0.96	S350 or S450	60 / 72*	11.12	0.109	33.6	1355	102.1
1.2	1.16	S350 or S450	60 / 72*	13.33	0.131	33.7	1633	119.8

# TR60<sup>+</sup>™ Load tables (BS5950)

## Steel Grade S350 – Normal Weight Concrete

Total Unfactored Applied Load (kN/m<sup>2</sup>) Maximum Permissible Span (m)

Span Condition	Fire Rating (hours)	Slab Depth (mm)	Mesh	0.9mm Gauge				1.0mm Gauge				1.2mm Gauge			
				3.5	5.0	7.5	10.0	3.5	5.0	7.5	10.0	3.5	5.0	7.5	10.0
Single*	1.0	130	A142	3.15	3.15	3.15	2.74	3.40	3.40	3.28	2.81	3.71	3.71	3.43	2.93
		150	A193	2.99	2.99	2.99	2.99	3.24	3.24	3.24	3.24	3.53	3.53	3.53	3.53
		200	A393	2.71	2.71	2.71	2.71	2.90	2.90	2.90	2.90	3.20	3.20	3.20	3.20
	1.5	140	A193	3.06	3.06	3.06	2.76	3.28	3.28	3.28	2.79	3.62	3.62	3.35	2.87
		150	A193	2.99	2.99	2.99	2.88	3.24	3.24	3.24	2.91	3.53	3.53	3.53	2.99
		200	A393	2.71	2.71	2.71	2.71	2.90	2.90	2.90	2.90	3.20	3.20	3.20	3.20
	2.0	150	A193	2.99	2.99	2.91	2.55	3.24	3.24	2.92	2.56	3.53	3.53	2.95	2.60
		175	A252	2.89	2.89	2.89	2.89	3.06	3.06	3.06	3.06	3.35	3.35	3.35	3.25
		200	A393	2.71	2.71	2.71	2.71	2.90	2.90	2.90	2.90	3.20	3.20	3.20	3.20
	Double	1.0	130	A142	3.59	3.53	3.00	2.66	3.83	3.61	3.07	2.73	4.34	3.77	3.21
150			A193	3.38	3.38	3.38	3.09	3.70	3.70	3.57	3.15	4.12	4.12	3.71	3.28
200			A393	2.97	2.97	2.97	2.97	3.18	3.18	3.18	3.18	3.76	3.76	3.76	3.76
1.5		140	A193	3.48	3.48	2.99	2.66	3.80	3.56	3.03	2.70	4.22	3.66	3.12	2.77
		150	A193	3.38	3.38	3.10	2.75	3.70	3.69	3.14	2.79	4.12	3.78	3.23	2.87
		200	A393	2.97	2.97	2.97	2.97	3.18	3.18	3.18	3.18	3.76	3.76	3.76	3.76
2.0		150	A193	3.38	3.23	2.77	2.47	3.69	3.25	2.79	2.49	3.73	3.29	2.83	2.53
		175	A252	3.16	3.16	3.16	2.94	3.44	3.44	3.33	2.96	3.91	3.91	3.37	2.99
		200	A393	2.97	2.97	2.97	2.97	3.18	3.18	3.18	3.12	3.76	3.76	3.55	3.16
Double Span (Propped)		1.0	130	A393	4.78	4.37	3.80	3.24	4.84	4.43	3.85	3.34	4.96	4.54	3.95
	150		A393	5.04	4.56	4.00	3.60	5.12	4.63	4.06	3.66	5.26	4.76	4.17	3.76
	200		2 x A393	4.42	4.42	4.42	4.42	4.88	4.88	4.88	4.56	5.70	5.70	5.31	4.79
	1.5	140	A393	4.54	4.09	3.57	3.21	4.59	4.13	3.61	3.25	4.67	4.21	3.68	3.31
		150	A393	4.65	4.20	3.68	3.32	4.70	4.25	3.72	3.35	4.79	4.33	3.79	3.42
		200	2 x A393	4.42	4.42	4.42	4.21	4.88	4.88	4.65	4.24	5.70	5.29	4.72	4.30
	2.0	150	A393	4.31	3.89	3.41	3.07	4.33	3.92	3.43	3.09	4.38	3.96	3.47	3.13
		175	2 x A252	4.78	4.49	3.97	3.59	4.95	4.52	3.99	3.62	5.00	4.56	4.03	3.65
		200	2 x A393	4.42	4.42	4.15	3.78	4.88	4.68	4.17	3.80	5.14	4.72	4.20	3.83

Figures shown in Red, indicates where spans are limited by the maximum composite stage condition.

Figures shown in Blue, indicates where spans are limited by the maximum composite stage and are achieved using two rows of temporary propping at third points.

The above tables are limited to the span/depth ratio for end span condition (Refer BS5950 Part 4: Clause 6.6.3 Table 2) and a maximum span of 6m.

\* These tables are based on the composite slab and mesh reinforcement (not necessarily the metal deck) continuous over one or more internal supports (end bay condition). For full design notes relating to these tables refer to page 4 of The White Book.

# TR60<sup>+</sup>™ Load tables (BS5950)

## Steel Grade S350 – Lightweight Concrete

Total Unfactored Applied Load (kN/m<sup>2</sup>) Maximum Permissible Span (m)

Span Condition	Fire Rating (hours)	Slab Depth (mm)	Mesh	0.9mm Gauge				1.0mm Gauge				1.2mm Gauge			
				3.5	5.0	7.5	10.0	3.5	5.0	7.5	10.0	3.5	5.0	7.5	10.0
Single*	1.0	120	A142	3.44	3.44	3.07	2.67	3.72	3.72	3.14	2.74	4.05	4.05	3.28	2.86
		150	A193	3.20	3.20	3.20	3.20	3.47	3.47	3.47	3.47	3.79	3.79	3.79	3.63
		200	A393	2.95	2.95	2.95	2.95	3.14	3.14	3.14	3.14	3.44	3.44	3.44	3.44
	1.5	130	A193	3.35	3.35	3.26	2.78	3.63	3.63	3.29	2.81	3.97	3.97	3.32	2.88
		150	A193	3.20	3.20	3.20	2.99	3.47	3.47	3.47	3.02	3.79	3.79	3.68	3.10
		200	A393	2.95	2.95	2.95	2.95	3.14	3.14	3.14	3.14	3.44	3.44	3.44	3.44
	2.0	140	A193	3.27	3.27	3.03	2.63	3.55	3.55	3.04	2.65	3.88	3.88	3.07	2.69
		175	A252	3.12	3.12	3.12	3.12	3.29	3.29	3.29	3.29	3.60	3.60	3.60	3.43
		200	A393	2.95	2.95	2.95	2.95	3.14	3.14	3.14	3.14	3.44	3.44	3.44	3.44
	Double	1.0	120	A142	3.94	3.52	2.96	2.62	4.18	3.60	3.03	2.68	4.41	3.75	3.16
150			A193	3.63	3.63	3.61	3.17	3.97	3.97	3.68	3.24	4.43	4.43	3.82	3.36
200			A393	3.23	3.23	3.23	3.23	3.54	3.54	3.54	3.54	4.10	4.10	4.10	4.10
1.5		130	A193	3.83	3.63	3.05	2.70	4.06	3.68	3.09	2.73	4.44	3.76	3.17	2.81
		150	A193	3.63	3.63	3.24	2.87	3.97	3.91	3.29	2.91	4.43	4.00	3.38	2.99
		200	A393	3.23	3.23	3.23	3.23	3.54	3.54	3.54	3.54	4.10	4.10	4.10	4.10
2.0		140	A193	3.73	3.42	2.89	2.56	3.97	3.44	2.92	2.58	4.00	3.48	2.96	2.63
		175	A252	3.42	3.42	3.42	3.12	3.74	3.74	3.56	3.13	4.19	4.19	3.59	3.17
		200	A393	3.23	3.23	3.23	3.23	3.54	3.54	3.54	3.54	4.10	4.10	4.10	4.10
Double Span (Propped)		1.0	120	A252	4.32	3.92	3.37	3.00	4.38	3.99	3.43	3.05	4.48	4.10	3.54
	150		A393	5.09	4.75	4.17	3.74	5.14	4.82	4.23	3.79	5.23	4.93	4.34	3.89
	200		2 x A393	4.89	4.89	4.89	4.53	5.39	5.39	5.34	4.69	6.18	5.89	5.52	4.98
	1.5	130	A393	4.58	4.23	3.70	3.32	4.64	4.29	3.75	3.35	4.75	4.39	3.81	3.40
		150	A393	5.03	4.51	3.91	3.51	5.08	4.55	3.95	3.54	5.17	4.64	4.02	3.61
		200	2 x A393	4.89	4.89	4.89	4.53	5.39	5.39	5.06	4.57	6.18	5.81	5.12	4.64
	2.0	140	A393	4.62	4.13	3.57	3.19	4.68	4.18	3.61	3.23	4.77	4.26	3.68	3.30
		175	2 x A252	5.09	4.59	4.02	3.62	5.12	4.62	4.04	3.64	5.18	4.68	4.09	3.68
		200	2 x A393	4.89	4.89	4.83	4.37	5.39	5.39	4.85	4.38	6.07	5.53	4.88	4.42

For more comprehensive tables covering a wider range of slab depths, loadings, fire ratings and mesh sizes visit our website at [www.smdltd.co.uk](http://www.smdltd.co.uk)



# TR60<sup>+</sup>™ Fire tables (BS5950)

## TAB-Deck™ Fibres - Normal Weight Concrete

Total Unfactored Applied Load (kN/m<sup>2</sup>) Maximum Permissible Span (m)

Span Condition	Fire Rating (hours)	Slab Depth (mm)	Steel Fibre	0.9mm Gauge				1.0mm Gauge				1.2mm Gauge			
				3.5	5.0	7.5	10.0	3.5	5.0	7.5	10.0	3.5	5.0	7.5	10.0
Double	1.0	130	HE 1.0/50	3.59	3.42	2.99	2.68	3.83	3.54	3.09	2.78	4.19	3.80	3.33	2.99
		150	HE 1.0/50	3.38	3.38	3.30	2.98	3.70	3.70	3.42	3.10	4.12	4.10	3.63	3.28
		200	HE 1.0/50	2.99	2.99	2.99	2.99	3.20	3.20	3.20	3.20	3.78	3.78	3.78	3.78
	1.5	140	HE 1.0/50	3.21	2.90	2.54	2.12	3.29	2.98	2.61	2.18	3.47	3.14	2.75	2.48
		150	HE 1.0/50	3.37	3.06	2.69	2.26	3.46	3.15	2.77	2.50	3.63	3.30	2.90	2.62
		200	HE 1.0/50	2.99	2.99	2.99	2.92	3.20	3.20	3.20	3.20	3.78	3.78	3.63	3.32
	2.0	150	HE 1.0/50	3.21	2.91	2.56	2.14	3.31	3.01	2.64	2.20	3.46	3.14	2.76	2.32
		175	HE 1.0/50	3.17	3.17	2.64	2.40	3.45	3.28	2.71	2.46	3.72	3.42	2.83	2.57
		200	HE 1.0/50	2.99	2.99	2.99	2.79	3.20	3.20	3.20	2.85	3.78	3.78	3.48	2.95

# TR60<sup>+</sup>™ Fire tables (BS5950)

## TAB-Deck™ Fibres - Lightweight Concrete

Total Unfactored Applied Load (kN/m<sup>2</sup>) Maximum Permissible Span (m)

Span Condition	Fire Rating (hours)	Slab Depth (mm)	Steel Fibre	0.9mm Gauge				1.0mm Gauge				1.2mm Gauge			
				3.5	5.0	7.5	10.0	3.5	5.0	7.5	10.0	3.5	5.0	7.5	10.0
Double	1.0	120	HE 1.0/50	3.81	3.39	2.93	2.61	3.95	3.52	3.03	2.71	4.21	3.76	3.24	2.89
		150	HE 1.0/50	3.64	3.64	3.39	3.05	3.98	3.98	3.52	3.16	4.43	4.32	3.78	3.40
		200	HE 1.0/50	3.25	3.25	3.25	3.25	3.56	3.56	3.56	3.56	4.12	4.12	4.12	4.07
	1.5	130	HE 1.0/50	3.25	2.90	2.51	2.24	3.34	2.98	2.58	2.31	3.54	3.16	2.74	2.45
		150	HE 1.0/50	3.64	3.31	2.88	2.59	3.76	3.39	2.95	2.65	3.92	3.53	3.08	2.76
		200	HE 1.0/50	3.25	3.25	3.25	3.25	3.56	3.56	3.56	3.36	4.12	4.12	3.84	3.49
	2.0	140	HE 1.0/50	3.34	2.99	2.59	2.15	3.42	3.07	2.66	2.20	3.58	3.21	2.78	2.49
		175	HE 1.0/50	3.43	3.43	3.07	2.57	3.75	3.56	3.13	2.62	4.08	3.71	3.26	2.73
		200	HE 1.0/50	3.25	3.25	3.25	3.21	3.56	3.56	3.56	3.26	4.12	4.12	3.71	3.36

For further guidance on the design of TAB-Deck™ fibre reinforced slabs, download the TAB-Deck™ design manual at [www.smdltd.co.uk](http://www.smdltd.co.uk)

# TR60<sup>+</sup>™ Fire Insulation Thickness

## Minimum Insulation Thickness (x) of Concrete (mm)



Concrete Weight	1 hr	1.5 hr	2 hr	3 hr	4 hr
NWC	70	80	90	115	130
LWC	60	70	80	100	115

The image and table above details the minimum insulation thickness required to suit fire design criteria – in accordance with BS5950 Part 8.



[www.smdstockyards.co.uk](http://www.smdstockyards.co.uk)

**Brentwood** London  
 Tel: +44 (0) 1277 812490  
 Email: [alan@smdstockyards.co.uk](mailto:alan@smdstockyards.co.uk)  
 Unit 27, Childerditch Industrial Park,  
 Little Warley, Essex CM13 3HD  
 Fax: +44 (0) 1277 812491

**Ashbourne** Midlands  
 Tel: +44 (0) 1335 300999  
 Email: [jade@smdstockyards.co.uk](mailto:jade@smdstockyards.co.uk)  
 Moor Farm Road West, The Airfield,  
 Ashbourne, Derbyshire DE6 1HD  
 Fax: +44 (0) 1335 300888

**Leeds** Northern  
 Tel: +44 (0) 1202 714990  
 Email: [kevin@smdstockyards.co.uk](mailto:kevin@smdstockyards.co.uk)  
 Calderbank, River Street, Brighouse,  
 West Yorkshire HD6 1LU  
 Fax: +44 (0) 1202 714980

**Coatbridge** Scotland  
 Tel: +44 (0) 1698 622202  
 Email: [kevin@smdstockyards.co.uk](mailto:kevin@smdstockyards.co.uk)  
 12 Palacecraig Street, Coatbridge,  
 North Lanarkshire ML5 4RY  
 Fax: +44 (0) 1202 714980