

Another Revolution In Steel Decking

Now there's yet another breakthrough from Richard Lees Steel Decking: one that will save you time and money. It's called Ribdeck E60 and it has all the classic abilities of traditional composite steel decking with this ground breaking difference - Ribdeck E60 uses less concrete than other decks.

Less Concrete. More Savings

For given slab depths, Ribdeck E60 requires lower volumes of structural concrete topping than other comparable decks from the UK and possibly elsewhere in the world. Its advanced design brings a new dimension to the efficient construction of shallow slabs, allowing optimum composite characteristics to be combined with minimum concrete volume.

And More Strength

Ribdeck E60 has other benefits too: **Extra strength and enhanced spanning characteristics:** Ribdeck E60 is manufactured from S350 grade galvanised high yield steel strip.

Slab Depth	Concrete Volumes m ³ per m ²			Concrete savings with Ribdeck E60	
	Typical Trapezoidal Profile	Typical Re-entrant Profile	Ribdeck E60 Profile	Typical Trapezoidal	Typical Re-entrant
120	0.095	0.111	0.084	13.1%	32.1%
150	0.125	0.141	0.114	9.6%	23.7%

More speed and efficiency on site:

The profile is a full metre in cover width, giving greater coverage of floor area per piece.

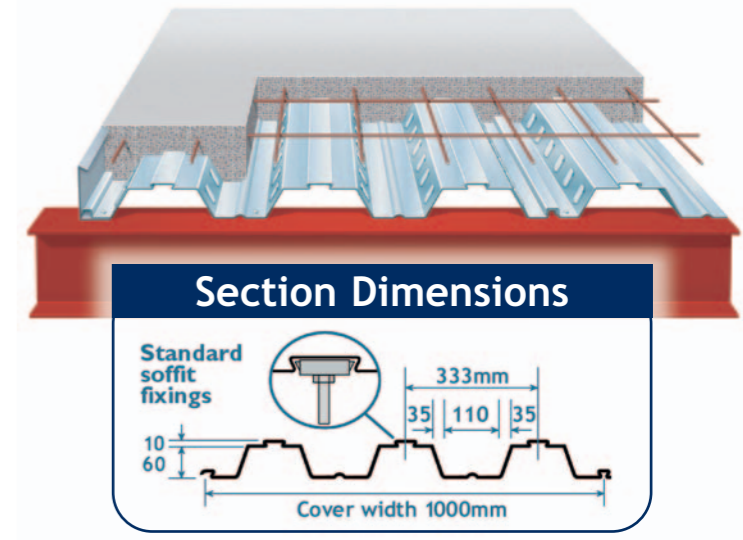
Full composite designs:

The Ribdeck E60 profile allows development of efficient, economical composite designs using shear connectors.

A simple suspension system:

Ribdeck E60 takes standard soffit suspension fittings used with other profiles - simple, well known, effective and widely used for many years.

Gauge mm	Self Weight		Area mm ²	Inertia cm ⁴	Y _{NA} mm
	kg/m ²	kN/m ²			
0.9	9.3	0.091	1,140	80.4	37.1
1.0	10.3	0.101	1,273	89.8	37.2
1.2	12.3	0.121	1,538	108.7	37.2



Ribdeck E60 Span/Load table - Normal weight concrete

Support Condition	Slab Depth (mm)	Concrete Volume (m ³ /m ²)	Maximum Permissible Spans (m)											
			0.9mm GAUGE IMPOSED LOAD (kN/m ²)				1.0mm GAUGE IMPOSED LOAD (kN/m ²)				1.2mm GAUGE IMPOSED LOAD (kN/m ²)			
			*	5.0	6.7	10.0	*	5.0	6.7	10.0	*	5.0	6.7	10.0
SINGLE	120	0.084	2.81	2.81	2.81	2.44	3.17	3.17	3.17	2.60	3.52	3.52	3.52	2.87
	130	0.094	2.74	2.74	2.74	2.59	3.10	3.10	3.10	2.76	3.44	3.44	3.44	3.06
	140	0.104	2.68	2.68	2.68	2.68	3.03	3.03	3.03	2.92	3.36	3.36	3.36	3.25
	150	0.114	2.62	2.62	2.62	2.62	2.96	2.96	2.96	2.96	3.29	3.29	3.29	3.29
	175	0.139	2.49	2.49	2.49	2.49	2.82	2.82	2.82	2.82	3.14	3.14	3.14	3.14
	200	0.164	2.39	2.39	2.39	2.39	2.71	2.71	2.71	2.71	3.01	3.01	3.01	3.01
MULTIPLE	120	0.084	3.40	3.40	3.03	2.44	3.77	3.77	3.26	2.60	4.07	4.07	3.67	2.87
	130	0.094	3.31	3.31	3.22	2.58	3.67	3.67	3.47	2.76	3.98	3.98	3.94	3.06
	140	0.104	3.22	3.22	3.22	2.72	3.58	3.58	3.58	2.92	3.90	3.90	3.90	3.25
	150	0.114	3.14	3.14	3.14	2.87	3.49	3.49	3.49	3.07	3.80	3.80	3.80	3.45
	175	0.139	2.96	2.96	2.96	2.96	3.30	3.30	3.30	3.30	3.61	3.61	3.61	3.61
	200	0.164	2.79	2.79	2.79	2.79	3.14	3.14	3.14	3.14	3.45	3.45	3.45	3.45
PROPPED	120	0.084	4.20	3.19	2.79	2.31	4.20	3.43	2.98	2.45	4.20	3.88	3.33	2.69
	130	0.094	4.55	3.35	2.93	2.43	4.55	3.62	3.15	2.58	4.55	4.11	3.53	2.85
	140	0.104	4.90	3.50	3.07	2.54	4.90	3.78	3.30	2.71	4.90	4.32	3.72	3.00
	150	0.114	5.25	3.64	3.20	2.66	5.25	3.95	3.45	2.84	5.25	4.53	3.90	3.16
	175	0.139	5.89	3.97	3.50	2.92	6.12	4.32	3.79	3.13	6.12	5.00	4.33	3.52
	200	0.164	5.60	4.25	3.77	3.16	6.41	4.65	4.09	3.40	6.50	5.41	4.71	3.84

* Denotes decking used as shuttering only.

Notes:

- Spans shown assume clear span +100mm to the centreline of supports.
- Designs are fully in accordance with BS 5950: Parts 4 & 6.

- The dead weight of the slab has been included in the development of the spans shown. However, consideration should be given to finishes, partitions, walls, etc. when reading from the table.
- Based upon concrete densities at wet stage: normal weight concrete 2400 kg/m³, lightweight concrete 1900 kg/m³.

Ribdeck E60 Span/Load table - Lightweight concrete

Support Condition	Slab Depth (mm)	Concrete Volume (m ³ /m ²)	Maximum Permissible Spans (m)											
			0.9mm GAUGE IMPOSED LOAD (kN/m ²)				1.0mm GAUGE IMPOSED LOAD (kN/m ²)				1.2mm GAUGE IMPOSED LOAD (kN/m ²)			
			*	5.0	6.7	10.0	*	5.0	6.7	10.0	*	5.0	6.7	10.0
SINGLE	120	0.084	2.98	2.98	2.98	2.44	3.00	3.00	3.00	2.60	3.00	3.00	3.00	2.87
	130	0.094	2.91	2.91	2.91	2.59	3.25	3.25	3.25	2.76	3.25	3.25	3.25	3.06
	140	0.104	2.84	2.84	2.84	2.72	3.21	3.21	3.21	2.92	3.50	3.50	3.50	3.25
	150	0.114	2.78	2.78	2.78	2.78	3.15	3.15	3.15	3.07	3.50	3.50	3.50	3.45
	175	0.139	2.66	2.66	2.66	2.66	3.01	3.01	3.01	3.01	3.34	3.34	3.34	3.34
	200	0.164	2.55	2.55	2.55	2.55	2.89	2.89	2.89	2.89	3.21	3.21	3.21	3.21
MULTIPLE	120	0.084	3.60	3.56	3.03	2.44	3.60	3.60	3.26	2.60	3.60	3.60	3.60	2.87
	130	0.094	3.52	3.52	3.22	2.58	3.90	3.90	3.47	2.76	3.90	3.90	3.90	3.06
	140	0.104	3.44	3.44	3.40	2.72	3.82	3.82	3.68	2.92	4.12	4.12	4.12	3.25
	150	0.114	3.36	3.36	3.36	2.87	3.73	3.73	3.73	3.07	4.05	4.05	4.05	3.45
	175	0.139	3.19	3.19	3.19	3.19	3.55	3.55	3.55	3.45	3.88	3.88	3.88	3.88
	200	0.164	3.04	3.04	3.04	3.04	3.39	3.39	3.39	3.39	3.70	3.70	3.70	3.70
PROPPED	120	0.084	3.60	3.26	2.84	2.33	3.60	3.52	3.04	2.48	3.60	3.60	3.40	2.73
	130	0.094	3.90	3.43	2.99	2.46	3.90	3.71	3.21	2.62	3.90	3.90	3.61	2.89
	140	0.104	4.20	3.60	3.13	2.58	4.20	3.90	3.37	2.75	4.20	4.20	3.81	3.06
	150	0.114	4.50	3.75	3.28	2.70	4.50	4.08	3.54	2.89	4.50	4.50	4.01	3.22
	175	0.139	5.25	4.11	3.60	2.98	5.25	4.49	3.91	3.20	5.25	5.21	4.47	3.60
	200	0.164	6.00	4.42	3.89	3.23	6.00	4.85	4.24	3.48	6.00	5.68	4.89	3.95

- Concrete volumes: Figures shown in the tables are nominal values based on constant slab thickness. As with all steel decks, when ordering concrete an allowance should be made for the deflected form of the soffit and for this we suggest, as guidance, -36 mm allowance for voids + span/250 for ponding.
- A span to depth ratio limit of 35:1 for normal weight concrete and 30:1 for light weight concrete is generally used. Where isolated single spans occur, these ratios are reduced to 30:1 and 25:1 respectively.
- Maximum deflections are limited to span/130 after taking account of ponding.

- Construction stage design includes an allowance of 1.5kN/m² (2kN/m² for simply supported spans) for construction loading.
- Composite slabs are designed as simply supported irrespective of the deck support configuration. A minimum crack control and distribution mesh is required over the supports in accordance with clauses 6.7, 6.8 and 6.9 of BS5950: Part 4.
- Decking is manufactured from material meeting the following specification: BS EN 10147-S350GD-Z275-N-A-C, i.e. yield strength = 350 N/mm².

Mesh sizes for Simplified Fire Designs - Normal weight concrete

Fire Rating (Hrs)	Slab Depth (mm)	Span (m) for given Imposed Load (kN/m ²)								
		A142			A193			A252		
		5.0	6.7	10.0	5.0	6.7	10.0	5.0	6.7	10.0
1.0	130	3.62	3.28	2.83	3.93	3.56	3.07	4.24	3.84	3.31
	140	3.79	3.44	2.98	4.12	3.73	3.23	4.45	4.04	3.49
	150	3.87	3.52	3.05	4.20	3.82	3.32	4.55	4.14	3.59
	175	--	--	--	4.34	3.97	3.47	4.70	4.30	3.75
	200	--	--	--	4.46	4.10	3.61	4.82	4.43	3.89
1.5	140	3.32	3.02	2.61	3.65	3.31	2.87	3.98	3.61	3.12
	150	3.46	3.15	2.74	3.82	3.47	3.01	4.17	3.79	3.29
	175	--	--	--	3.96	3.62	3.17	4.33	3.96	3.46
2.0	150	3.08	2.81	2.44	3.44	3.13	2.72	3.80	3.46	3.00
	175	--	--	--	3.64	3.33	2.91	4.03	3.68	3.22
	200	--	--	--	3.72	3.42	3.01	4.11	3.79	3.33

Notes:

- Tables are applicable for any construction where the mesh may act in tension over a supporting beam or wall (negative bending). This includes end bay conditions i.e. the concrete slab is continuous over more than one span.
- Loads shown are unfactored working loads and should include all imposed live and dead loads, excluding only the self-weight of the slab.
- An ultimate load factor of 1.0 is assumed throughout.
- indicates that the area of mesh is less than the minimum for crack control recommended in BS5950: Part 4

Mesh sizes for Simplified Fire Designs - Lightweight concrete

Fire Rating (Hrs)	Slab Depth (mm)	Span (m) for given Imposed Load (kN/m ²)								
		A142			A193			A252		
		5.0	6.7	10.0	5.0	6.7	10.0	5.0	6.7	10.0
1.0	120	3.60	3.24	2.76	3.60	3.51	3.00	3.60	3.60	3.23
	130	3.81	3.43	2.93	3.90	3.73	3.19	3.90	3.90	3.45
	140	3.96	3.57	3.06	4.20	3.89	3.34	4.20	4.20	3.62
	150	4.03	3.64	3.13	4.39	3.96	3.41	4.50	4.30	3.69
	175	--	--	--	4.56	4.14	3.58	4.93	4.48	3.87
1.5	140	3.42	3.08	2.64	3.77	3.39	2.90	3.90	3.71	3.17
	150	3.60	3.25	2.79	3.98	3.59	3.08	4.20	3.93	3.37
	175	--	--	--	4.05	3.66	3.15	4.44	4.01	3.45
	200	--	--	--	4.18	3.80	3.29	4.59	4.17	3.60
	200	--	--	--	4.30	3.92	3.42	4.71	4.30	3.74
2.0	140	3.26	2.95	2.53	3.65	3.29	2.83	4.04	3.65	3.13
	150	3.37	3.05	2.63	3.79	3.43	2.95	4.21	3.80	3.27
	175	--	--	--	3.90	3.54	3.07	4.32	3.93	3.40
	200	--	--	--	3.99	3.64	3.17	4.42	4.04	3.51

- Mesh should satisfy the minimum elongation requirement given in BS4449: 1988.

- For conditions outside the scope of the simplified tables, including all isolated spans, consult SCI publication 56 (2nd edition) or RLS's Deckspan software.