

the **original:**

Holorib

Some technical benefits of Holorib:

- Best concrete compression block for flexural resistance
- Deep concrete section/high steel content for best vertical/longitudinal shear resistance
- Shape of troughs allows a greater number of shear studs and optimum shear stud performance
- Only decking type not requiring fire stops over support beams for fire resistance periods up to 2 hours
- Strongest load carrying performance
- Shallowest slabs for providing 2 hours fire resistance
- Embossments in tops of ribs ensure the most effective shear bond characteristics
- Allows construction of most dense slabs for best sound insulation
- Greatest flexibility for low cost, stronger service/ceiling suspension
- High composite inertia minimises service deflections

More advantages with steel decking:

- Permanent shuttering
- Can be used with lightweight or dense concrete
- Up to four hours fire resistance with exposed soffit can be designed
- Composite construction reduces steelwork frame weight
- Lower dead load reduces frame and foundation loading
- Stiffens supporting frame if steelwork used
- Cover for following trades
- Provides a safe working platform
- Easily cut and fitted to awkward shapes
- Minimal site storage requirements
- Separate panels can be manhandled into restricted access situations
- Provides the Tensile reinforcement
- Needs no (or minimal) propping
- Shear studs can be site welded 'through-deck' for composite construction
- Speeds construction programme – essential in fast-tracking
- Ceilings and services can be easily suspended using standard fixings

First Choice For Design, Supply and Installation

The UK's leading decking company, Richard Lees Steel Decking gives you all the technical support you need and backs it up with the most experienced installation service, including through deck welding of shear studs, fitting of steel permanent edge formwork and the installation of safety netting where appropriate.

www.rlsd.com



Detailing of Holorib decking is incorporated in 3D+ parametric structural modelling software - an integrated analysis and drafting package operating within the standard AutoCAD environment.

Supplied by CSC (UK) Ltd.
Tel: +44 (0) 113 239 3000
www.cscworld.com

Holorib is fully implemented in the RAM Structural System software. Engineers can quickly compare alternative designs using Richard Lees Steel Decking profiles whilst producing calculations, steel tonnages and construction drawings for structural frames.

Supplied by RAM International
Tel: +44 (0) 141 353 5168.
www.ramint.co.uk



The only analysis tool that can predict the damped floor response achievable with Resotec. Providing automatic stud and section design, Compos is the premiere tool for composite analysis and design.

Supplied by Oasys Ltd
Tel: +44 (0) 191 238 7559
www.oasys-software.com



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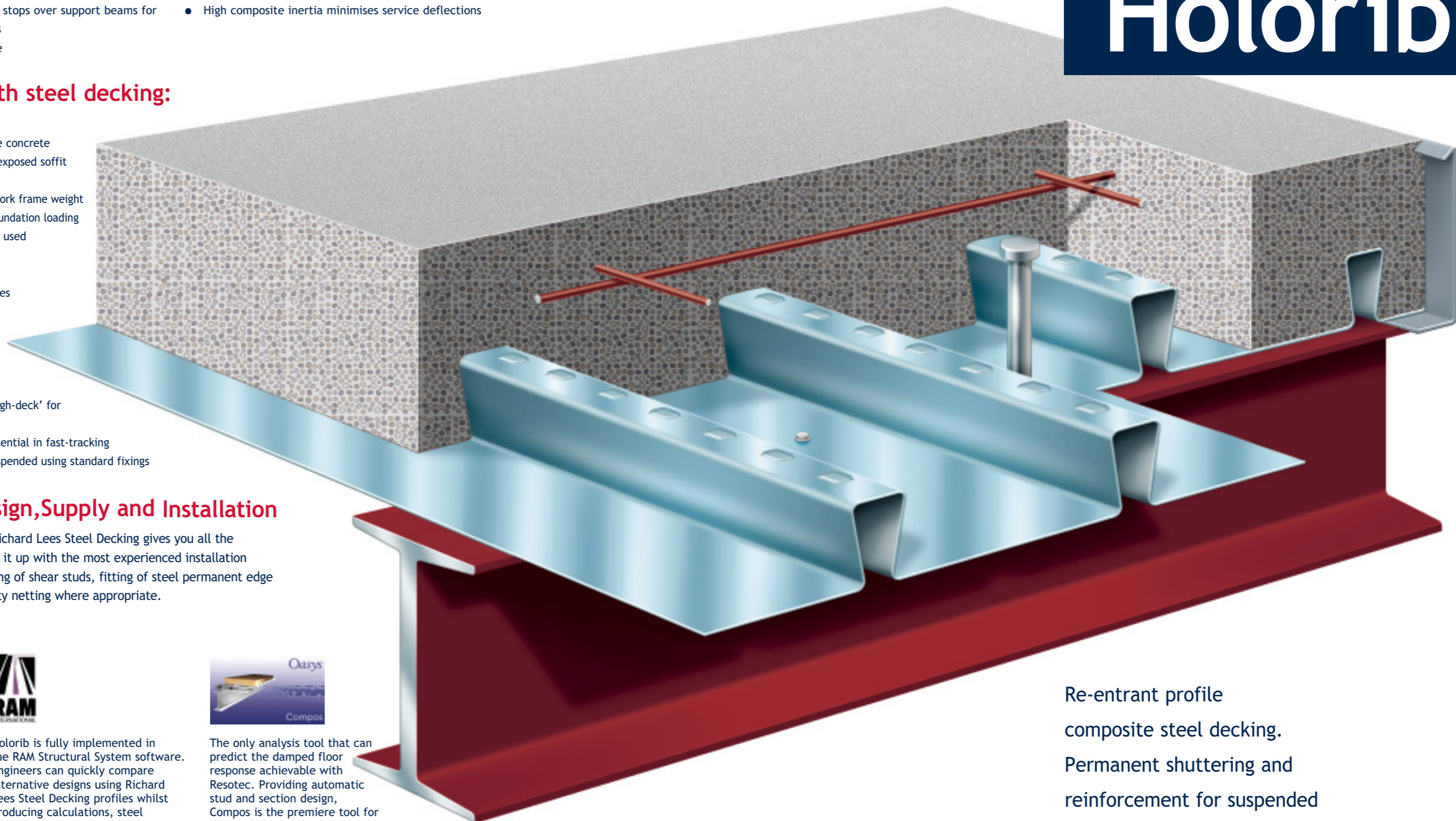
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Re-entrant profile composite steel decking. Permanent shuttering and reinforcement for suspended structural concrete slabs.

Holorib decking is used as permanent shuttering and tensile reinforcement for suspended in situ concrete slabs in new and refurbished buildings. It is supplied in S350 structural grade galvanised steel.

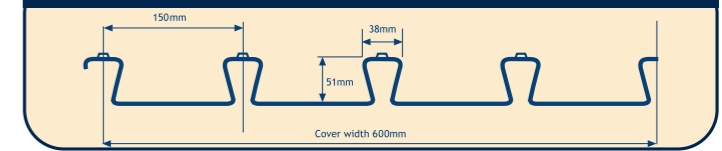
Holorib is the UK's most widely specified floor decking profile and can be supplied almost anywhere in the world. High rise office buildings, large shopping developments, factories, sports stadia, flats, have all benefited from the speed, simplicity and economic advantages of the profile. So too, have countless other types of project ranging in size from many thousands of square metres down to a few panels from our UK ex-stock service.

Holorib has been supplied by Richard Lees Steel Decking since 1972 when it was added to the range of innovative structural products developed by the business which originated in 1947. Holorib has since become a traditional and classic construction product and its' benefits are as useful and important today as they have ever been. Like all the Richard Lees Steel Decking profiles, it is supported by the best and most experienced safety, technical, installation, and organisational service in the business.

Holorib Section Properties (per metre width)

Gauge mm	Self Weight		Area mm ²	Inertia cm ⁴	Y _{NA} mm
	kg/m ²	kN/m ²			
0.9	12.8	0.126	1,597	64.4	16.7
1.0	14.3	0.140	1,780	72.0	16.7
1.2	17.1	0.168	2,145	87.2	16.8

Section Dimensions



Holorib 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	100	0.092	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	SINGLE
	120	0.112	2.88	2.88	2.88	2.88	3.09	3.09	3.09	3.09	3.27	3.27	3.27	3.27	
	130	0.122	2.80	2.80	2.80	2.80	3.01	3.01	3.01	3.01	3.20	3.20	3.20	3.20	
	150	0.142	2.67	2.67	2.67	2.67	2.89	2.89	2.89	2.89	3.07	3.07	3.07	3.07	
	175	0.167	2.52	2.52	2.52	2.52	2.75	2.75	2.75	2.75	2.93	2.93	2.93	2.93	
	200	0.192	2.40	2.40	2.40	2.40	2.61	2.61	2.61	2.61	2.81	2.81	2.81	2.81	
MULTIPLE	100	0.092	3.36	3.36	3.36	3.24	3.50	3.50	3.50	3.36	3.50	3.50	3.50	3.44	MULTIPLE
	120	0.112	3.19	3.19	3.19	3.19	3.35	3.35	3.35	3.35	3.66	3.66	3.66	3.66	
	130	0.122	3.11	3.11	3.11	3.11	3.28	3.28	3.28	3.28	3.58	3.58	3.58	3.58	
	150	0.142	2.99	2.99	2.99	2.99	3.14	3.14	3.14	3.14	3.44	3.44	3.44	3.44	
	175	0.167	2.85	2.85	2.85	2.85	3.00	3.00	3.00	3.00	3.29	3.29	3.29	3.29	
	200	0.192	2.74	2.74	2.74	2.74	2.89	2.89	2.89	2.89	3.16	3.16	3.16	3.16	
PROPPED	100	0.092	3.50	3.50	3.39	2.85	3.50	3.50	3.50	3.18	3.50	3.50	3.50	3.44	PROPPED
	120	0.112	4.20	4.15	3.69	3.12	4.20	4.20	4.13	3.48	4.20	4.20	4.20	4.03	
	130	0.122	4.55	4.30	3.84	3.25	4.55	4.55	4.29	3.63	4.55	4.55	4.55	4.33	
	150	0.142	5.25	4.58	4.10	3.48	5.25	5.11	4.58	3.89	5.25	5.25	5.25	4.71	
	175	0.167	5.65	4.87	4.39	3.75	5.96	5.43	4.90	4.19	6.13	6.13	5.90	5.06	
	200	0.192	5.43	5.12	4.64	3.98	5.72	5.70	5.17	4.45	6.27	6.27	6.27	5.37	

* 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.
- Concrete volumes: Figures shown in the tables are nominal values based on constant slab thickness. As with all steel decks, an allowance should be made for the deflected form of the soffit when ordering concrete and, as guidance, we suggest that the estimated volume of concrete equates to: Overall slab depth - 8mm for voids + span/250.

Holorib Span/Load table - Light 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	100	0.092	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	SINGLE
	120	0.112	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	
	130	0.122	3.03	3.03	3.03	3.03	3.24	3.24	3.24	3.24	3.25	3.25	3.25	3.25	
	150	0.142	2.90	2.90	2.90	2.90	3.10	3.10	3.10	3.10	3.29	3.29	3.29	3.29	
	175	0.167	2.75	2.75	2.75	2.75	2.97	2.97	2.97	2.97	3.15	3.15	3.15	3.15	
	200	0.192	2.62	2.62	2.62	2.62	2.85	2.85	2.85	2.85	3.02	3.02	3.02	3.02	
MULTIPLE	100	0.092	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	MULTIPLE
	120	0.112	3.42	3.42	3.42	3.34	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	
	130	0.122	3.34	3.34	3.34	3.34	3.52	3.52	3.52	3.52	3.84	3.84	3.84	3.84	
	150	0.142	3.21	3.21	3.21	3.21	3.38	3.38	3.38	3.38	3.69	3.69	3.69	3.69	
	175	0.167	3.07	3.07	3.07	3.07	3.23	3.23	3.23	3.23	3.53	3.53	3.53	3.53	
	200	0.192	2.95	2.95	2.95	2.95	3.10	3.10	3.10	3.10	3.40	3.40	3.40	3.40	
PROPPED	100	0.092	3.00	3.00	3.00	2.88	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	PROPPED
	120	0.112	3.60	3.60	3.60	3.16	3.60	3.60	3.60	3.54	3.60	3.60	3.60	3.60	
	130	0.122	3.90	3.90	3.90	3.30	3.90	3.90	3.90	3.69	3.90	3.90	3.90	3.90	
	150	0.142	4.50	4.50	4.21	3.55	4.50	4.50	4.50	3.97	4.50	4.50	4.50	4.50	
	175	0.167	5.25	5.06	4.52	3.83	5.25	5.25	5.05	4.28	5.25	5.25	5.25	5.17	
	200	0.192	5.84	5.34	4.79	4.08	6.00	5.95	5.35	4.56	6.00	6.00	6.00	5.51	

- 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 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.
- S350 decking is manufactured from material meeting the 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	100	3.50	3.29	2.84	3.50	3.50	3.03	3.50	3.50	3.22
	120	3.92	3.56	3.09	4.19	3.81	3.30	4.20	4.06	3.52
	130	4.04	3.68	3.20	4.32	3.94	3.42	4.55	4.20	3.65
	150	4.20	3.84	3.35	4.48	4.10	3.58	4.79	4.38	3.82
	175	--	--	--	4.64	4.27	3.75	4.95	4.55	4.00
	200	--	--	--	4.78	4.41	3.90	5.09	4.70	4.15
1.5	110	3.33	3.02	2.61	3.60	3.27	2.82	3.85	3.51	3.03
	120	3.45	3.14	2.72	3.74	3.40	2.94	4.02	3.66	3.17
	130	3.56	3.25	2.82	3.85	3.51	3.05	4.16	3.79	3.29
	150	3.72	3.41	2.98	4.04	3.70	3.23	4.36	3.99	3.48
	175	--	--	--	4.17	3.84	3.37	4.50	4.14	3.63
	200	--	--	--	3.96	3.66	3.23	4.28	3.96	3.50
2.0	125	2.99	2.73	2.37	3.31	3.01	2.62	3.62	3.30	2.86
	130	3.04	2.78	2.42	3.36	3.07	2.67	3.69	3.36	2.92
	150	3.20	2.93	2.57	3.55	3.25	2.84	3.89	3.56	3.11
	175	--	--	--	3.65	3.36	2.96	4.01	3.69	3.24
	200	--	--	--	3.74	3.46	3.06	4.11	3.80	3.36

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.

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	100	3.00	3.00	2.91	3.00	3.00	3.00	3.00	3.00	3.00
	120	3.60	3.60	3.18	3.60	3.60	3.40	3.60	3.60	3.60
	130	3.90	3.81	3.29	3.90	3.90	3.52	3.90	3.90	3.76
	150	4.38	3.98	3.45	4.50	4.26	3.69	4.50	4.50	3.94
	175	--	--	--	4.88	4.45	3.87	5.21	4.75	4.13
	200	--	--	--	5.04	4.62	4.04	5.37	4.92	4.30
1.5	105	3.15	3.09	2.65	3.15	3.15	2.87	3.15	3.15	3.09
	120	3.60	3.29	2.83	3.60	3.58	3.07	3.60	3.60	3.32
	130	3.77	3.41	2.94	3.90	3.71	3.20	3.90	3.90	3.45
	150	3.91	3.55	3.08	4.25	3.86	3.34	4.50	4.18	3.61
	175	--	--	--	4.41	4.02	3.50	4.76	4.35	3.78
	200	--	--	--	4.54	4.16	3.64	4.90	4.49	3.93
2.0	115	3.11	2.81	2.42	3.45	3.12	2.68	3.45	3.42	2.94
	120	3.17	2.86	2.47	3.52	3.18	2.74	3.60	3.50	3.01
	130	3.28	2.97	2.57	3.65	3.30	2.85	3.90	3.64	3.13
	150	3.42	3.11	2.69	3.80	3.45	2.99	4.19	3.80	3.29
	175	--	--	--	3.92	3.58	3.12	4.31	3.94	3.43
	200	--	--	--	4.02	3.68	3.22	4.42	4.05	3.55

- indicates that the area of mesh is less than the minimum for crack control recommended in BS5950: Part 4
- For conditions outside the scope of the simplified tables, including all isolated spans, consult SCI publication 56 (2nd edition) or RLSD's Deckspan software.
- Mesh should satisfy the minimum elongation requirement given in BS4449: 1988.