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## LYSAGHT® SMARTDEK®

### User's Guide for Construction and Installation of SMARTDEK®



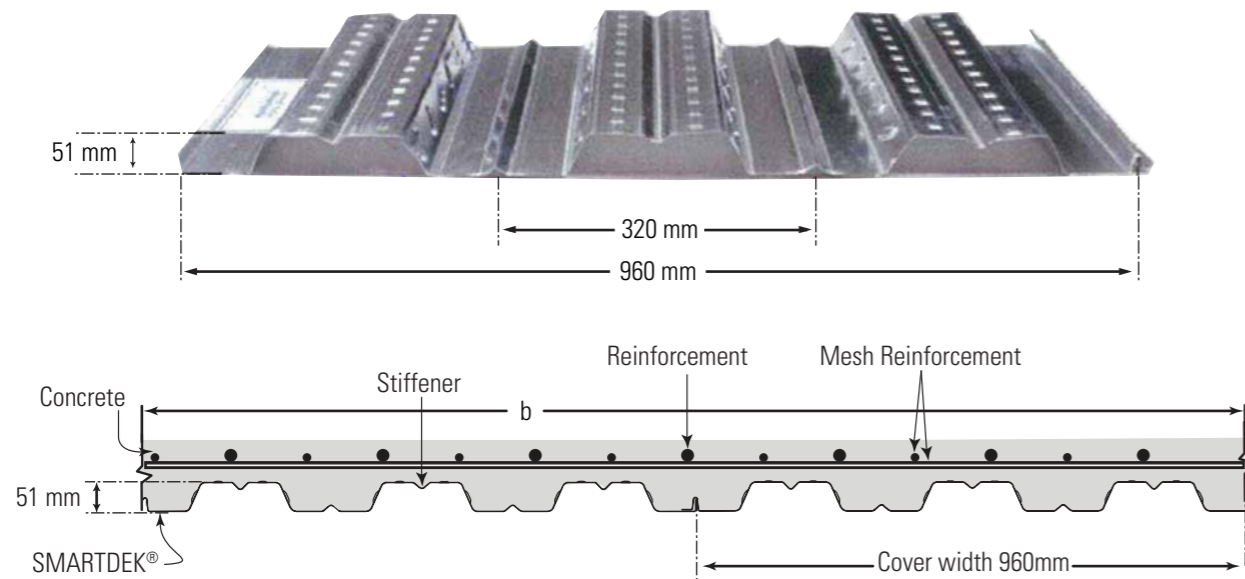
- 960mm Effective Width - Our widest steel deck
- Acts as permanent formwork with minimal propping and no stripping of formwork
- Works as composite slab with reduced self-weight due to concrete displacement

## INTRODUCING SMARTDEK®

LYSAGHT® SMARTDEK® Structural deck system is an innovative “W” profile steel decking made from high strength zinc-coated steel. It brings greater economy as it provides widest cover per weight of steel and reduces the amount of concrete volume as in a solid slab.

LYSAGHT® SMARTDEK® acts as a permanent formwork for a composite concrete slab, which in its assembled state can be used as a working platform as well as a formwork to support wet concrete, construction materials and trades. When the concrete hardens, it acts as the bottom tensile reinforcement provided composite slab design is taken into consideration.

## SMARTDEK® PROFILE & DIMENSIONS



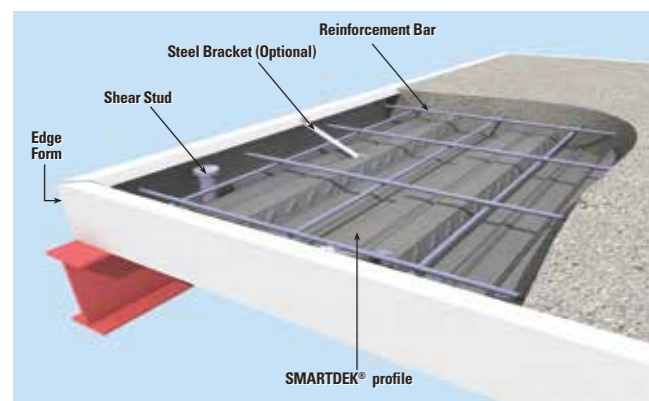
### Material Section Properties

SMARTDEK™ Thickness (BMT) (mm)	Self Weight (kg/m <sup>2</sup> )	Full Cross-Sectional Area (mm <sup>2</sup> /m)	Zinc Coating (g/m <sup>2</sup> )*	Steel Grade (MPa)**	Inertia Moment I <sub>x</sub> <sup>3</sup> (mm <sup>4</sup> /m)	Section Modulus Z <sub>x</sub> <sup>1</sup> (mm <sup>3</sup> /m)
0.75	7.84	953.0	275	550	438645.00	16217.18
1.00	10.34	1269.7	275	550	526562.50	19479.17
1.20	12.33	1523.9	275	550	701979.17	25958.33

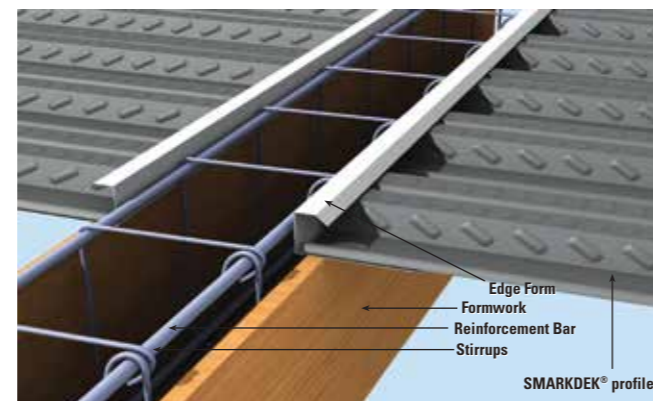
NOTE:

\* Nominal coating thickness    \*\* Minimum yield strength of steel    \*\*\* The steel conforms to AS1397 and BS EN 10147

## TYPICAL CONNECTION DETAILS



Typical steel frame connection details



Typical concrete connection details

## SMARTDEK® Features & Benefits

Feature	Benefit	
	Technical	Commercial
G550	Increase free span	Less support
	Stiffer profile no indentation after support removed	Saving cost for formwork
3mm Embossment	Better composite action	Optimize reinforcement design
	Able to receive high intensity of loading without additional bottom reinforcement	Optimize overall design
	Enhance design for fire capacity	
960mm Effective Width	Fit with most column grid, no waste	Saving cost for material waste Less on site cutting needed, improve safety
MEGAFLOOR™ Software	Becomes ultimate tool to design decking as formwork, composite and fire.	Fast in designing composite slab. Less resource for planning the usage of Smartdek®

### SMARTDEK® Span Table (Formwork Stage)

Span Type	Single			Continuous End			Continuous Interior			
	BMT	0.7	1.0	1.2	0.7	1.0	1.2	0.7	1.0	1.2
Slab Thickness (mm)	100	2380	2740	2800	2640	3410	3200	2640	3280	3200
	110	2310	2650	2780	2550	3320	3110	2550	3170	3110
	120	2230	2570	2700	2470	3230	3020	2470	3070	3020
	130	2170	2500	2620	2400	3150	2930	2400	2990	2930
	140	2110	2430	2560	2330	3080	2850	2330	2900	2850
	150	2060	2370	2500	2270	3000	2770	2270	2800	2770
	160	2010	2330	2440	2210	2930	2700	2210	2710	2700
	170	1960	2260	2390	2160	2850	2640	2140	2630	2640
180	1920	2230	2340	2110	2790	2580	2080	2550	2580	
200	1840	2150	2180	2030	2670	2470	1870	2300	2470	

\* Allowable span based on No Prop condition.

\* Deflection based on L/130, wet concrete density of 24kN/m<sup>3</sup>

\* Maximum construction imposed load is 1.5kPa

### Formwork Design – Design for Strength

The SMARTDEK® formwork shall be designed in accordance to BS 5950: Part 4: 1994 and BS 5950: Part 6: 1995 and Technical Note 116: Design of profile sheeting as permanent formwork.

SMARTDEK® bending capacities have been confirmed by tests conducted as Lysaght Technology Laboratory at Chester Hill, Sydney, Australia.