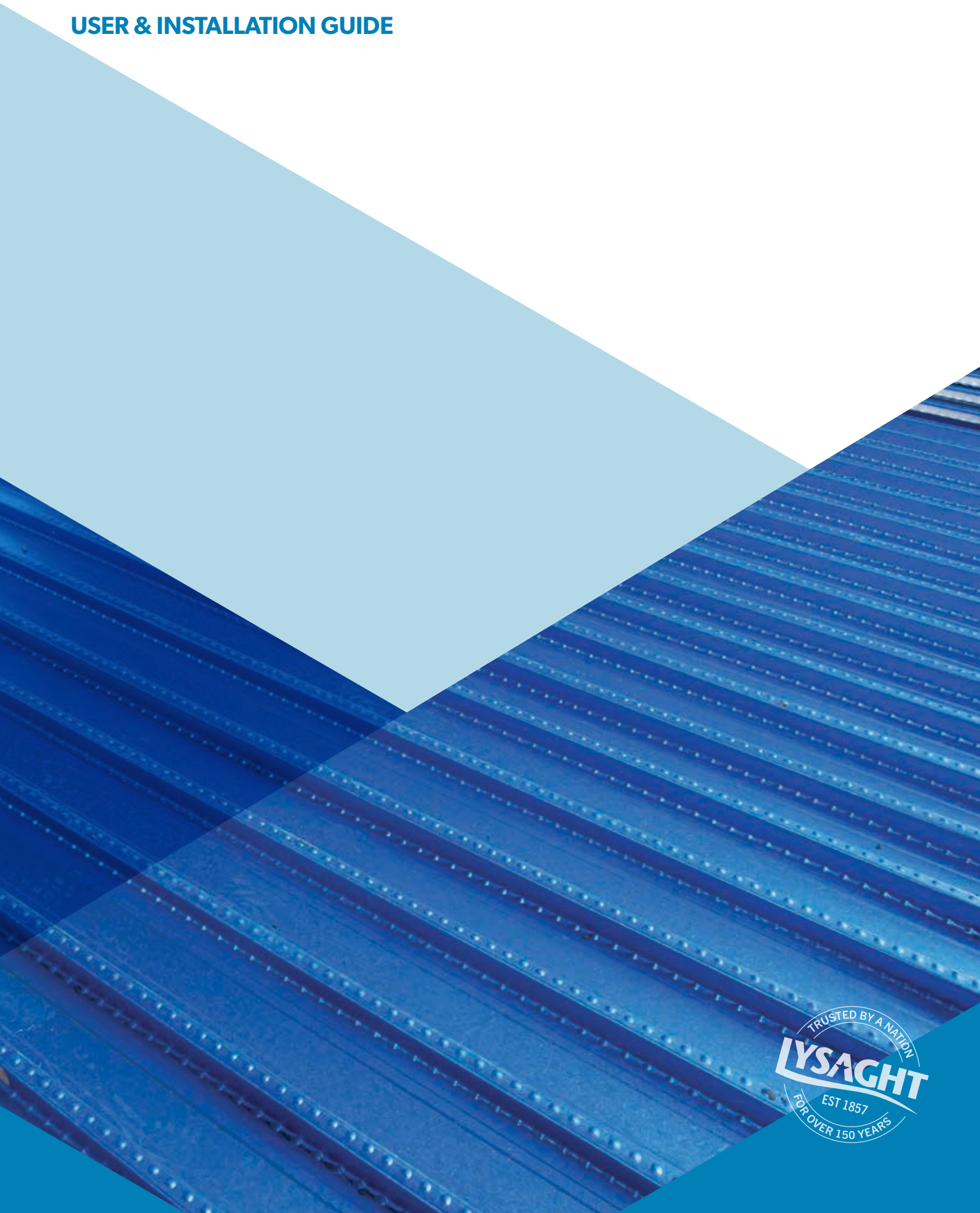


# BONDEK PLUS<sup>®</sup> 2P

USER & INSTALLATION GUIDE

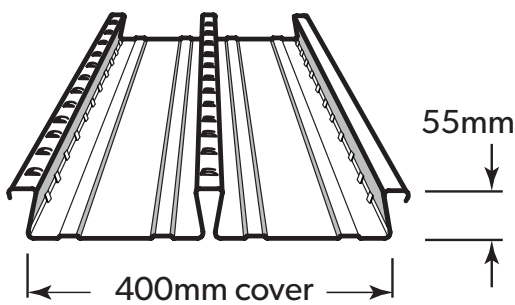
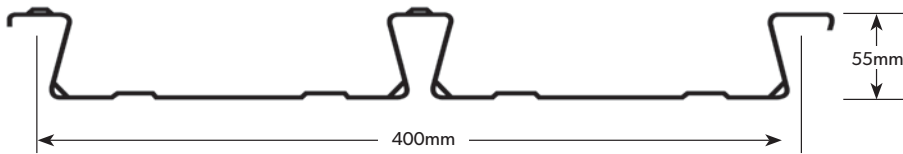
# LYSAGHT



# LYSAGHT BONDEK PLUS® 2P

BONDEK PLUS® 2P is a traditional flat pan or 're-entrant' profile that provides unmatched performance in suspended concrete slabs. BONDEK PLUS® 2P is used in both concrete and steel frame construction and utilises patented technology to achieve superior spanning capabilities, less deflection and greater composite strength than similar re-entrant profiles. BONDEK PLUS® 2P comes complete with a range of accessories allowing for easy suspension of ceilings and surfaces. The 400mm cover profile is lighter and easier to install on site.

## BONDEK PLUS® 2P PROFILE



### DESIGN ADVANTAGES

- Stronger composite strength - BONDEK PLUS® 2P is stronger than similar decks due to the patented corner embossments. The patented corner embossments develop a strong mechanical interlock with the concrete slab.
- Greater spanning capacities - BONDEK PLUS® 2P is stronger than similar decks in positive bending and end shear due to the dovetail ribs which resist lateral deflection by up to 10%.
- Supplied in BONDEK BLUE® featuring a blue anti-glare coating reducing reflected light by a minimum of 80%, which means greater comfort for installers and follow up trades on site.

### MATERIAL SPECIFICATIONS

LYSAGHT BONDEK PLUS® 2P profiled steel decking is rollformed from G550 (550 MPa Yield Stress) steel with a Base Metal Thickness (BMT) of 0.60mm, 0.75mm, and 1.00mm. The galvanised coating thickness is Z350 (350g/m<sup>2</sup>) in accordance with AS 1397:2001.

Thickness	Mass		Yield Strength	Coverage
	mm	kg/m <sup>2</sup>		
0.60	8.57	3.43	550	116.65
0.75	10.56	4.22	550	94.70
1.00	13.87	5.55	550	72.09

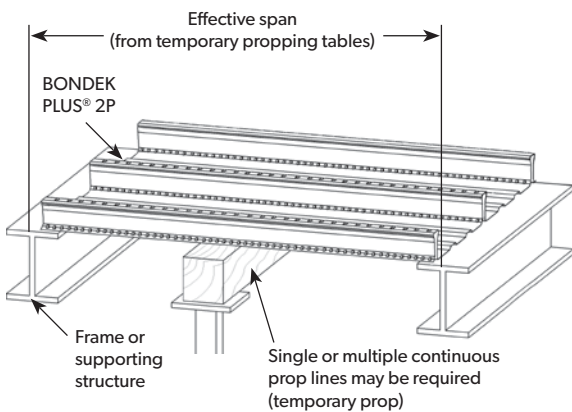
# INSTALLATION

## TEMPORARY PROPPING

If temporary propping is required (refer to the temporary propping tables), props should be placed at the correct centres prior to laying the BONDEK PLUS® 2P sheets. Generally, timber or steel bearers with a minimum dimension of 75mm x 75mm are used on vertical props. The props should be installed so as to prevent settlement during loading by wet concrete and other construction loads.

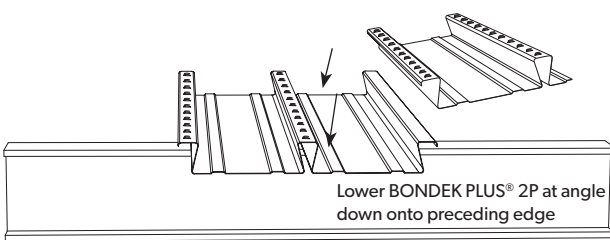
Wide ply strips, of 300mm wide, may be positioned above the header bearers to assist in dispersing the load and minimise any local deformation of the decking due to the headers.

Temporary props should only be removed after the slab has reached sufficient strength (at least 75% of the specified 28-day strength). The full design load may only be applied once the slab has achieved 28-day strength.

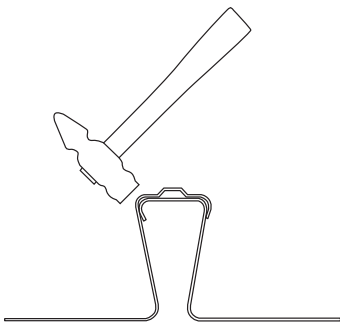


## LAYING BONDEK PLUS® 2P

1. Place the BONDEK PLUS® 2P sheet over the supports ensuring a minimum end bearing of 50mm. If supporting on a brick or masonry wall, provide a separating strip such as malthoid.



2. Tap the female rib with a hammer at a 45° angle to lock it into place.

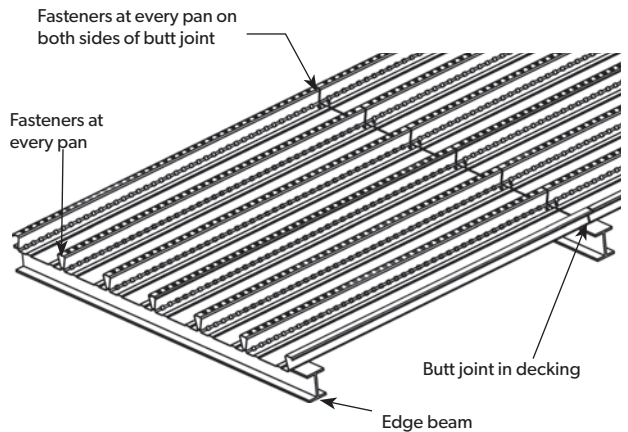


## FASTENERS AND LOCATIONS

The decking must be secured to the supporting structure in order to avoid movement and excessive deflection during the pouring of concrete.

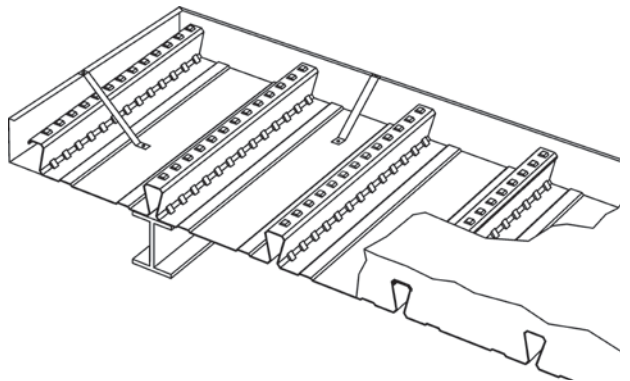
When fixing to a steel support structure, shot fired pins or self-drilling/tapping fasteners should be used. Provide one fastener in each pan at every support.

In the case of other support systems, such as brickwork, block work and concrete, the BONDEK PLUS® 2P sheets must be temporarily held in place against wind and other effects until the concrete is poured.



## EDGEFORM

Galvanised steel Edgeform can be used for the retention of wet concrete to the correct level at the decked floor perimeters. Edgeform is usually shot-fired to the steel support structure or to the BONDEK PLUS® 2P deck and the top of the Edgeform is connected back to the decking with restraint straps at approximately 600mm centres using either pop-rivets or self-drilling screws.



## REINFORCEMENT

Place all reinforcement in strict accordance with the structural engineer's drawings and specification.

## CONCRETE PLACEMENT

The specified grade of concrete and any chemical admixtures must be in strict accordance with AS 3600:2001 and the structural engineer's drawings and specification. The deck must be clear of any excess dirt, grease or debris as this inhibits bonding between the deck and concrete.

Ensure that concrete is applied evenly over the decking surface, as mounding of the wet concrete will cause excessive local loading.

# SPAN TABLES

## Maximum slab spans, mm

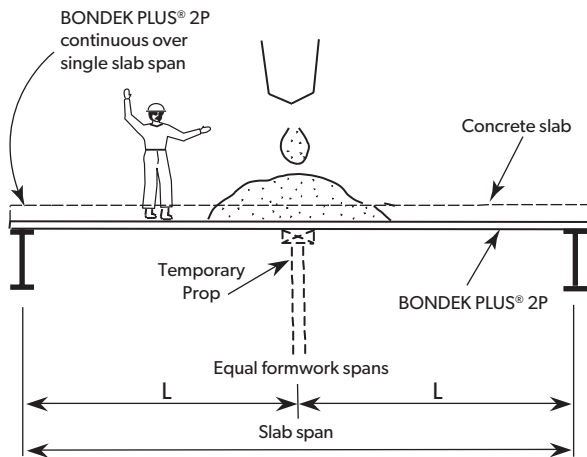
### BONDEK PLUS® 2P sheets continuous over single slab span (Figure 1)

#### Formwork deflections limits L/240 (Visual appearance important)

Slab depth D (mm)	0.60 BMT BONDEK PLUS® 2P			0.75 BMT BONDEK PLUS® 2P			1.0 BMT BONDEK PLUS® 2P		
	No of props per span			No of props per span			No of props per span		
	0	1	2	0	1	2	0	1	2
100	2000	[4800]	[7000]	2250	[5950]	[8250]	2450	[6500]	[9000]
110	2000	[4800]	[7000]	2200	[5750]	[8000]	2400	[6300]	[8750]
120	1950	[4800]	[7000]	2150	[5600]	[7800]	2350	[6150]	[8550]
130	1900	[4800]	[6900]	2100	[5500]	[7600]	2250	[6000]	[8300]
140	1850	4550	[6650]	2050	[5350]	[7400]	2200	[5850]	[8150]
150	1800	4300	[6400]	1950	[5250]	[7200]	2200	[5750]	[7950]
160	1750	4100	[6200]	1900	5100	[6950]	2150	[5650]	[7800]
170	1700	3900	[6000]	1850	5000	[6750]	2100	5500	[7650]
180	1650	3700	5800	1850	4850	[6550]	2050	5400	[7550]
190	1600	3550	5600	1800	4750	6350	2000	5350	[7400]
200	1600	3400	5300	1750	4600	6200	2000	5250	[7200]
210	1550	3300	5150	1700	4500	6050	1950	5150	7000
220	1550	2900	4950	1700	4400	5900	1900	5100	6850
230	1500	2850	4450	1650	4300	5750	1850	5000	6700
240	1450	2750	4300	1600	4200	5600	1850	4950	6550
250	1450	2700	4200	1600	4150	5500	1800	4850	6400

**Figure 1**

BONDEK PLUS® 2P sheets continuous over single slab span.



Notes:

- The tables above denote maximum allowable centreline to centreline span in millimetres between permanent supports after temporary propping is removed.
- The practical limit for span to slab depth ratio is considered to be 35 for single span slabs, or 40 for continuous slabs. Values above these limits have been listed in brackets "[ ]". The use of the results in brackets must be confirmed with the structural engineer or a Lysaght representative as the long term serviceability and composite performance of the resulting concrete slab may not be suitable for the project application.
- Allowance has been made for ponding of wet concrete due to decking deflection, density 2400kg/m<sup>3</sup>.
- Loading is considered in accordance with AS 1170.0:2002, AS 2327.1:2003, AS 3610:1995 with a Stage III construction live load allowance of 1.0 kPa in accordance with AS 2327.1:2003 Appendix F.
- The requirements for Stage II & IV material staking loads in accordance with AS 2327.1:2003 Appendix F are assumed to be zero.
- It is recommended that an experienced structural engineer design the composite slab to ensure sufficient capacity to meet strength and long term deflection requirements.
- The temporary propping tables have been prepared for a span/240 deflection criteria. A span/240 deflection is generally considered aesthetically satisfactory for exposed soffits.
- These tables are based upon effective section properties of the sheeting calculated in accordance to AS 4600:2005.
- Care must be exercised when placing concrete to avoid mounding.
- Wide ply strips, of 300mm wide, shall be provided to prevent any concentrated loads being applied to the sheeting, particularly for exposed soffits, to avoid direct point loading of the sheet overlap ribs and unsupported edges of the sheeting.
- When using the table for two or more spans the adjacent spans should not differ in length by more than 5%.
- A maximum sheet length of 12m has been considered.
- A minimum bearing width of the permanent support has been considered to be 50mm.
- Lysaght recommend a gauge of 1.00mm BMT for exposed soffits in propped applications to avoid creasing of steel decking. Please contact your local Lysaght representative for further information.



## Maximum slab spans, mm

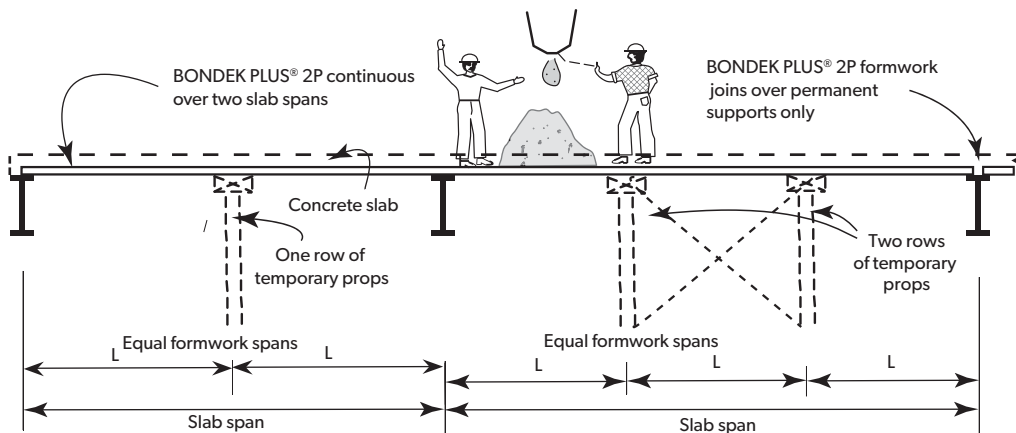
### BONDEK PLUS® 2P sheets continuous over two (2) or more slab spans (Figure 2)

#### Formwork deflections limits L/240 (Visual appearance important)

Slab depth D (mm)	0.60 BMT BONDEK PLUS® 2P			0.75 BMT BONDEK PLUS® 2P			1.0 BMT BONDEK PLUS® 2P		
	No of props per span			No of props per span			No of props per span		
	0	1	2	0	1	2	0	1	2
100	2350	[4650]	[7000]	2700	[5550]	[8150]	2950	[6050]	[8900]
110	2350	[4650]	[7000]	2650	[5400]	[7950]	2900	[5900]	[8700]
120	2350	4650	[7000]	2550	[5250]	[7750]	2800	[5750]	[8450]
130	2250	4650	[6800]	2500	5150	[7550]	2750	[5600]	[8250]
140	2200	4500	[6550]	2450	5000	[7350]	2700	5500	[8100]
150	2100	4350	[6350]	2350	4900	[7100]	2600	5400	[7900]
160	2050	4200	6100	2300	4750	[6900]	2550	5300	[7750]
170	2000	4000	6050	2200	4600	6650	2500	5200	[7600]
180	1900	3850	5750	2150	4450	6450	2500	5100	[7500]
190	1800	3650	5500	2100	4350	6300	2450	5000	7300
200	1750	3500	5300	2050	4200	6150	2350	4900	7100
210	1650	3400	5100	2000	4100	5950	2300	4800	6950
220	1500	3250	4900	1950	4000	5950	2250	4650	6800
230	1450	2900	4400	1900	3900	5900	2200	4550	6600
240	1400	2850	4250	1850	3850	5750	2150	4450	6500
250	1350	2750	4150	1800	3750	5650	2100	4350	6350

**Figure 2**

BONDEK PLUS® 2P sheets continuous over two (2) or more slab span.



Notes:

- The tables above denote maximum allowable centreline to centreline span in millimetres between permanent supports after temporary propping is removed.
- The practical limit for span to slab depth ratio is considered to be 35 for single span slabs, or 40 for continuous slabs. Values above these limits have been listed in brackets "[ ]". The use of the results in brackets must be confirmed with the structural engineer or a Lysaght representative as the long term serviceability and composite performance of the resulting concrete slab may not be suitable for the project application.
- Allowance has been made for ponding of wet concrete due to decking deflection, density 2400kg/m<sup>3</sup>.
- Loading is considered in accordance with AS 1170.0:2002, AS 2327.1:2003, AS 3610:1995 with a Stage III construction live load allowance of 1.0 kPa in accordance with AS 2327.1:2003 Appendix F.
- The requirements for Stage II & IV material stacking loads in accordance with AS 2327.1:2003 Appendix F are assumed to be zero.
- It is recommended that an experienced structural engineer design the composite slab to ensure sufficient capacity to meet strength and long term deflection requirements.
- The temporary propping tables have been prepared for a span/240 deflection criteria. A span/240 deflection is generally considered aesthetically satisfactory for exposed soffits.
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