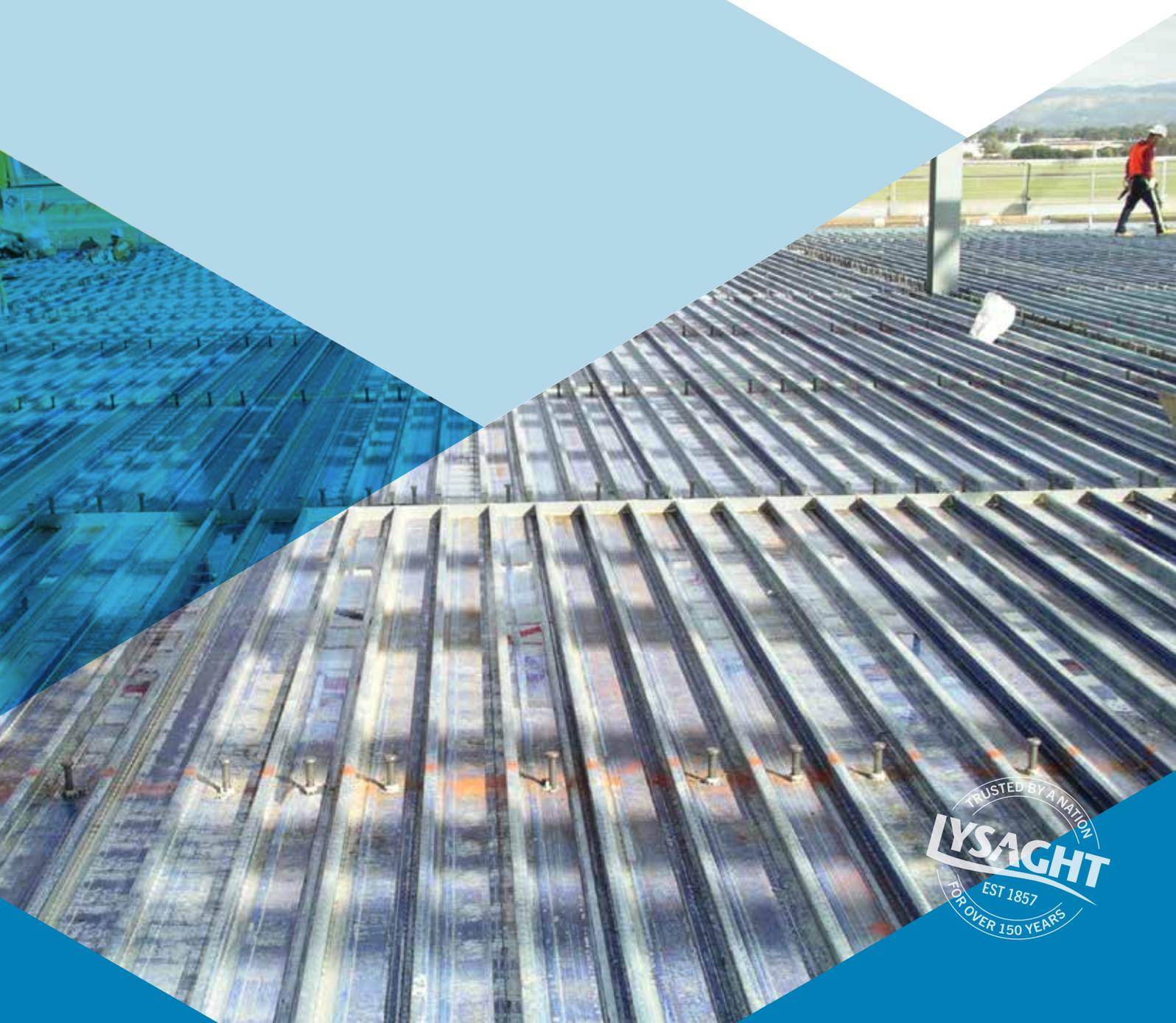


BONDEK PLUS™

USER & INSTALLATION GUIDE

LYSAGHT



LYSAGHT BONDEK PLUS™

LYSAGHT BONDEK PLUS™ is a traditional flat pan or 're-entrant' profile that provides unmatched performance in suspended concrete slabs. BONDEK PLUS™ 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™ comes complete with a range of accessories allowing for easy suspension of ceilings and surfaces.

LYSAGHT BONDEK PLUS™ PROFILE



DESIGN ADVANTAGES

- Stronger composite strength - BONDEK PLUS™ is stronger than similar decks due to the patented ReLok® corner embossments. ReLok® develops a strong mechanical interlock with the concrete slab.
- Greater spanning capacities - BONDEK PLUS™ 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 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/m²) in accordance with AS 1397:2001.

| Thickness mm | Mass | | Yield Strength | Coverage |
|-----------------|-------------------|------|-------------------|-------------------|
| | kg/m ² | kg/m | MPa | m ² /t |
| 0.60 | 8.38 | 5.03 | 550 | 119.3 |
| 0.75 | 10.32 | 6.19 | 550 | 96.9 |
| 1.00 | 13.56 | 8.14 | 550 | 73.7 |

LYSAGHT BONDEK PLUS™ SPAN TABLES

MAXIMUM SLAB SPANS (mm)

LYSAGHT BONDEK PLUS™ 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™ Number of props per span | | | 0.75 BMT BONDEK PLUS™ Number of props per span | | | 1.0 BMT BONDEK PLUS™ Number of props per span | | |
|-------------------|---|---------|---------|---|---------|---------|--|---------|---------|
| | 0 | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 2 |
| 100 | 2,000 | [4,800] | [7,000] | 2,250 | [5,950] | [8,250] | 2,450 | [6,500] | [9,000] |
| 110 | 2,000 | [4,800] | [7,000] | 2,200 | [5,750] | [8,000] | 2,400 | [6,300] | [8,750] |
| 120 | 1,950 | [4,800] | [7,000] | 2,150 | [5,600] | [7,800] | 2,350 | [6,150] | [8,550] |
| 130 | 1,900 | [4,800] | [6,900] | 2,100 | [5,500] | [7,600] | 2,250 | [6,000] | [8,300] |
| 140 | 1,850 | 4,550 | [6,650] | 2,050 | [5,350] | [7,400] | 2,200 | [5,850] | [8,150] |
| 150 | 1,800 | 4,300 | [6,400] | 1,950 | [5,250] | [7,200] | 2,200 | [5,750] | [7,950] |
| 160 | 1,750 | 4,100 | [6,200] | 1,900 | 5,100 | [6,950] | 2,150 | [5,650] | [7,800] |
| 170 | 1,700 | 3,900 | [6,000] | 1,850 | 5,000 | [6,750] | 2,100 | 5,500 | [7,650] |
| 180 | 1,650 | 3,700 | 5,800 | 1,850 | 4,850 | [6,550] | 2,050 | 5,400 | [7,550] |
| 190 | 1,600 | 3,550 | 5,600 | 1,800 | 4,750 | 6,350 | 2,000 | 5,350 | [7,400] |
| 200 | 1,600 | 3,400 | 5,300 | 1,750 | 4,600 | 6,200 | 2,000 | 5,250 | [7,200] |
| 210 | 1,550 | 3,300 | 5,150 | 1,700 | 4,500 | 6,050 | 1,950 | 5,150 | 7,000 |
| 220 | 1,550 | 2,900 | 4,950 | 1,700 | 4,400 | 5,900 | 1,900 | 5,100 | 6,850 |
| 230 | 1,500 | 2,850 | 4,450 | 1,650 | 4,300 | 5,750 | 1,850 | 5,000 | 6,700 |
| 240 | 1,450 | 2,750 | 4,300 | 1,600 | 4,200 | 5,600 | 1,850 | 4,950 | 6,550 |
| 250 | 1,450 | 2,700 | 4,200 | 1,600 | 4,150 | 5,500 | 1,800 | 4,850 | 6,400 |

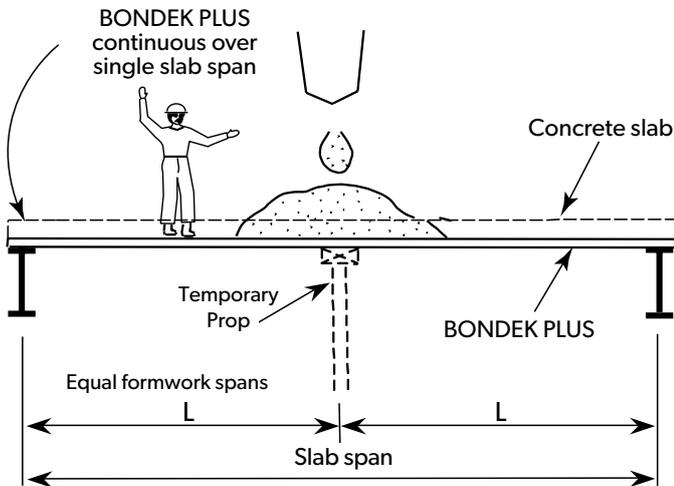


FIGURE 1

LYSAGHT BONDEK PLUS™ 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/m³.
- 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 1.0kPa 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.
- 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 300 mm 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 1.00 mm 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)

LYSAGHT BONDEK PLUS™ 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™ Number of props per span | | | 0.75 BMT BONDEK PLUS™ Number of props per span | | | 1.0 BMT BONDEK PLUS™ Number of props per span | | |
|-------------------|---|---------|---------|---|---------|---------|--|---------|---------|
| | 0 | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 2 |
| 100 | 2,350 | [4,650] | [7,000] | 2,700 | [5,550] | [8,150] | 2,950 | [6,050] | [8,900] |
| 110 | 2,350 | [4,650] | [7,000] | 2,650 | [5,400] | [7,950] | 2,900 | [5,900] | [8,700] |
| 120 | 2,350 | 4,650 | [7,000] | 2,550 | [5,250] | [7,750] | 2,800 | [5,750] | [8,450] |
| 130 | 2,250 | 4,650 | [6,800] | 2,500 | 5,150 | [7,550] | 2,750 | [5,600] | [8,250] |
| 140 | 2,200 | 4,500 | [6,550] | 2,450 | 5,000 | [7,350] | 2,700 | 5,500 | [8,100] |
| 150 | 2,100 | 4,350 | [6,350] | 2,350 | 4,900 | [7,100] | 2,600 | 5,400 | [7,900] |
| 160 | 2,050 | 4,200 | 6,100 | 2,300 | 4,750 | [6,900] | 2,550 | 5,300 | [7,750] |
| 170 | 2,000 | 4,000 | 6,050 | 2,200 | 4,600 | 6,650 | 2,500 | 5,200 | [7,600] |
| 180 | 1,900 | 3,850 | 5,750 | 2,150 | 4,450 | 6,450 | 2,500 | 5,100 | [7,500] |
| 190 | 1,800 | 3,650 | 5,500 | 2,100 | 4,350 | 6,300 | 2,450 | 5,000 | 7,300 |
| 200 | 1,750 | 3,500 | 5,300 | 2,050 | 4,200 | 6,150 | 2,350 | 4,900 | 7,100 |
| 210 | 1,650 | 3,400 | 5,100 | 2,000 | 4,100 | 5,950 | 2,300 | 4,800 | 6,950 |
| 220 | 1,500 | 3,250 | 4,900 | 1,950 | 4,000 | 5,950 | 2,250 | 4,650 | 6,800 |
| 230 | 1,450 | 2,900 | 4,400 | 1,900 | 3,900 | 5,900 | 2,200 | 4,550 | 6,600 |
| 240 | 1,400 | 2,850 | 4,250 | 1,850 | 3,850 | 5,750 | 2,150 | 4,450 | 6,500 |
| 250 | 1,350 | 2,750 | 4,150 | 1,800 | 3,750 | 5,650 | 2,100 | 4,350 | 6,350 |

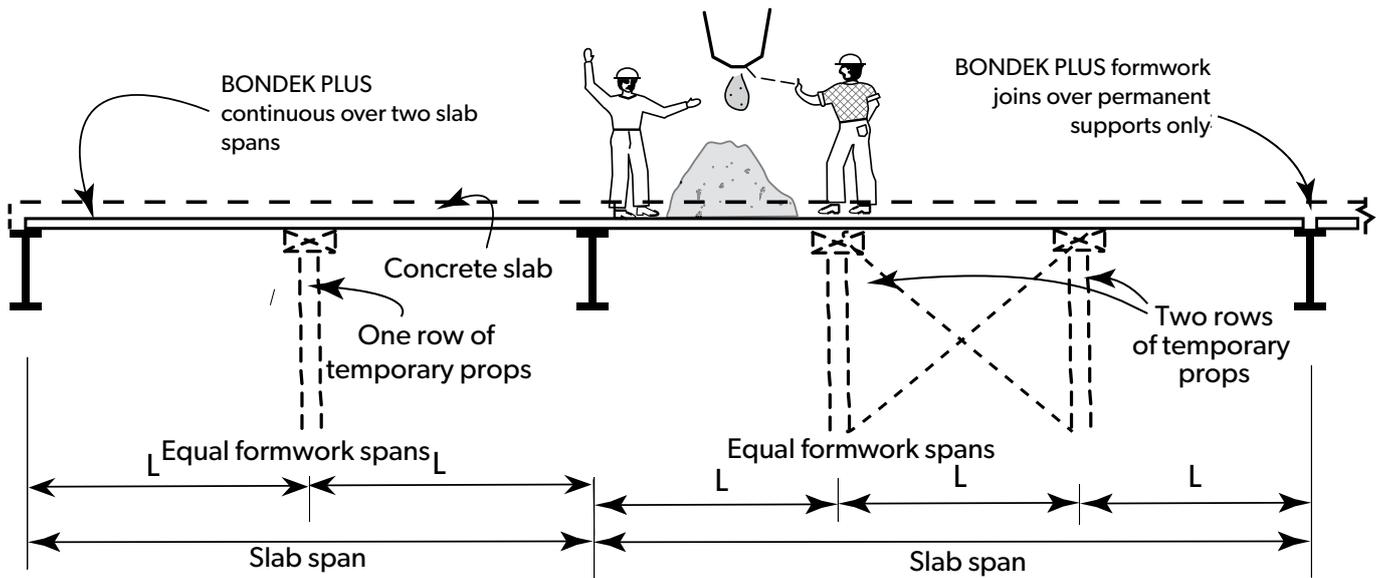


FIGURE 2

LYSAGHT BONDEK PLUS™ 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/m³.
- 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 1.0kPa 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.
- 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 300 mm 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 1.00 mm BMT for exposed soffits in propped applications to avoid creasing of steel decking. Please contact your local Lysaght representative for further information.

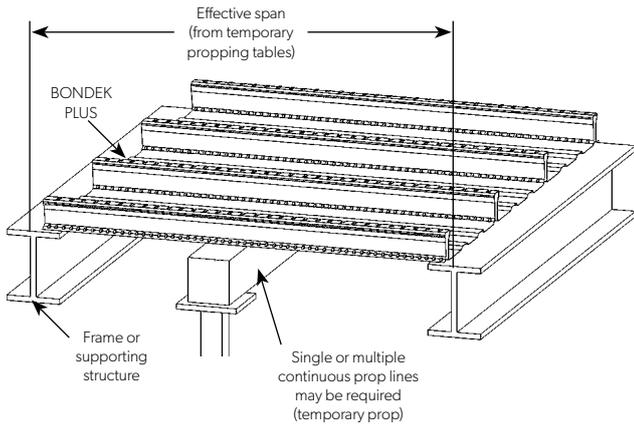
INSTALLING LYSAGHT BONDEK PLUS™

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™ 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.

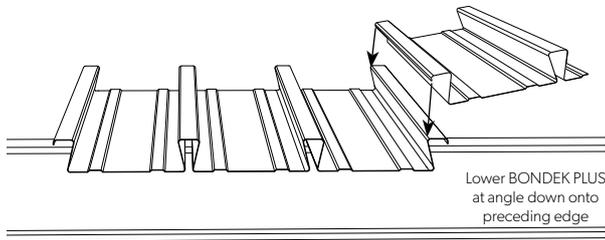
Wide ply strips, of 300 mm wide, may be positioned above the header bearers to assist in dispersing the load and minimise any local deformation of the decking due to the headers.

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.

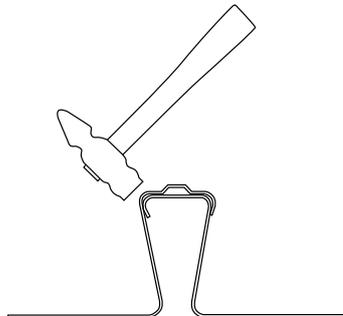


LAYING BONDEK PLUS™

1. Place the BONDEK PLUS™ 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.



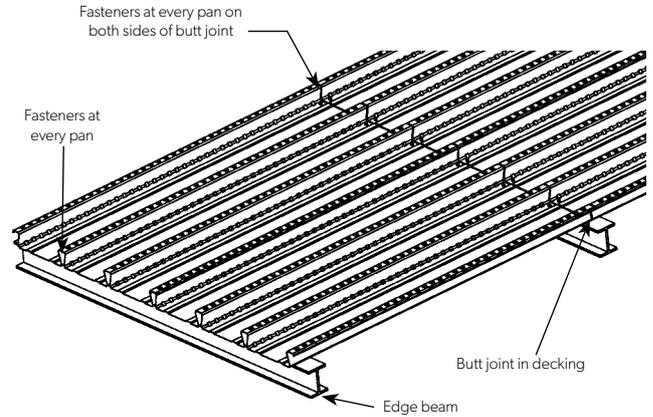
1. Tap the female rib with a hammer at a 45° angle to lock it into place.



FASTENERS AND LOCATIONS

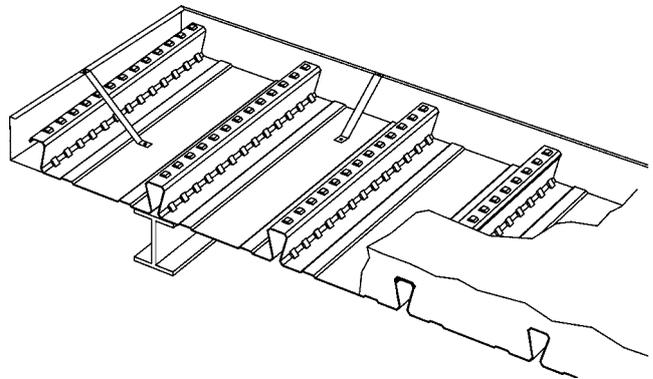
The decking must be secured to the supporting structure in order to avoid movement and excessive deflection during the pouring of concrete. When fixing to a steel support structure, shot fired pins or self-drilling/tapping fasteners should be used. Provide one fastener in each pan at every support.

In the case of other support systems, such as brickwork, block work and concrete, the BONDEK PLUS™ 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™ 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.

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