

PTDECK PT330 BMT1.0 TECHNICAL DATA SHEET

Introduction

PTDeck PT330 BMT1.0 with 30mm profile is used to support reinforced concrete slabs of various thicknesses during the formwork condition only. It has been analysed and tested to comply with AS3610-1995 Formwork for Concrete for the non-composite construction condition only.

Product Profile

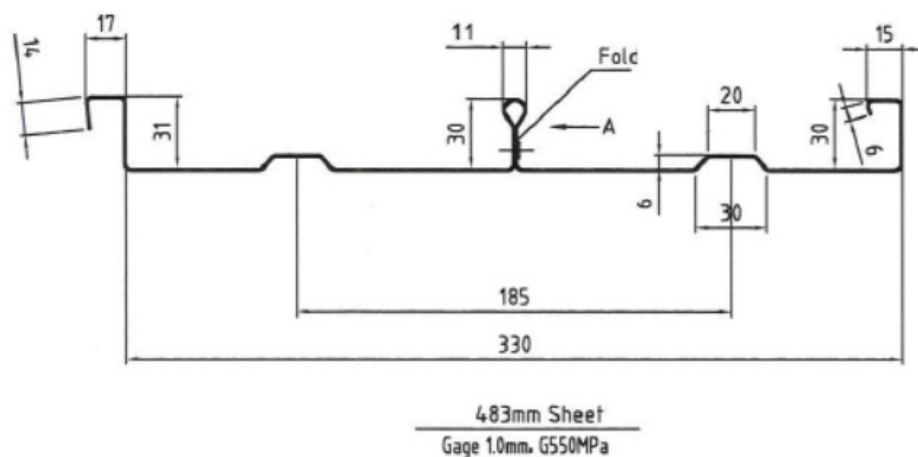


Figure 1: Typical cross-section of PTDeck PT330 BMT1.0 profiled steel sheeting

Product Material

PTDeck PT330 BMT1.0 with 30mm profile is based on the material being Grade G550 steel compliant to Australian Standards.

Product Section Properties

Gross section properties	
Gross area, A_g =	456 mm ²
Gross stiffness along x-direction, I_{xx} =	45,259 mm ⁴
Gross stiffness along y-direction, I_{yy} =	5,124,256 mm ⁴
Neutral axis, bar x =	165 mm
Neutral axis, bar y =	6.3 mm
Bending Capacity (Upper flange in tension)	
Estimated section capacities, ϕM_{u-} =	0.81 kNm
Bending Capacity (Upper flange in compression)	
Estimated section capacities, ϕM_{u+} =	0.86 kNm

Propping Chart

The maximum spans for PTDeck PT330 BMT1.0 are:

Minimum 3 continuous spans	
Slab Thickness (mm)	Recommended Span Length (mm)
150	1700
160	1650
170	1650
180	1600
190	1600
200	1500
210	1500
220	1450
230	1450
240	1400
250	1400
260	1400
270	1350
280	1350
290	1350
300	1300
310	1300
320	1300

Note:

1. A concrete density of 2450kg/m³ with allowance for steel reinforcement.
2. The metal deck formwork sheets extend over 3 spans minimum.
3. All spans are equal or within 10% of the average span and do not exceed the recommended span length as per table above i.e. from centreline of support to centreline of support.
4. The metal deck tray has a base metal thickness of 1mm (excluding galvanising).
5. The maximum internal radius of the profile is 3mm.
6. A maximum deflection limit of span/150.
7. Formwork trays have at least 50mm of bearing at each support.
8. Wind uplift / downward force and fire performance not considered in design.

Design Loadings

PTDeck PT330 BMT1.0 is designed to comply with AS3610-1995 for the non-composite construction condition only. Design loads are considered as per the following,

Stage 1: Prior to concrete being poured

- Stacking live load on the deck of 4kPa

Stage 2: During concrete pour

- Self-weight of concrete and reinforcement
- Live Load of
 - General 1kPa live load or
 - Concentrated load of 3kPa over a 1.6m by 1.6m area
(Note that these live loads are not combined)

In both stages, the metal deck trays are assumed to have adequately fixed to supporting structure to resist lateral loads.

Product Testing

The profile is proven to comply with the relevant Australian Standards for formwork design by prototype testing. These tests were carried out by Formdeck Systems under the supervision of Ishtar Net Works. Upon completion of the testing Ishtar Networks issued its report and is dated 02 March 2013.

The test results were reviewed in terms of strength and deflection and results were found to be consistent with engineering design calculations. Prototype testing has shown that the profile is able to carry the required prototype test loads.

Composite Slab Action

The composite capacity of the formed slab utilising the metal deck sheet is to be determined.

Concrete Curing & Prop Removal

PTDeck PT330 BMT1.0 requires the same degree of curing as a reinforced concrete slab. Refer to guidelines within AS3610. Temporary propping must not be removed until the slab has cured sufficiently. Prop removal procedure should be in accordance with AS3610.