



# PermaStruct® RapidDeck Design Guide



*confidence with every step*

PermaStruct®

## PermaStruct® RapidDeck is a low maintenance, modular FRP boardwalk and walkway system.

PermaStruct® RapidDeck consists of an anti-slip walking surface, supported by a durable, but lightweight composite subframe. It can be quickly installed even in the most difficult and remote sites using various footing systems.

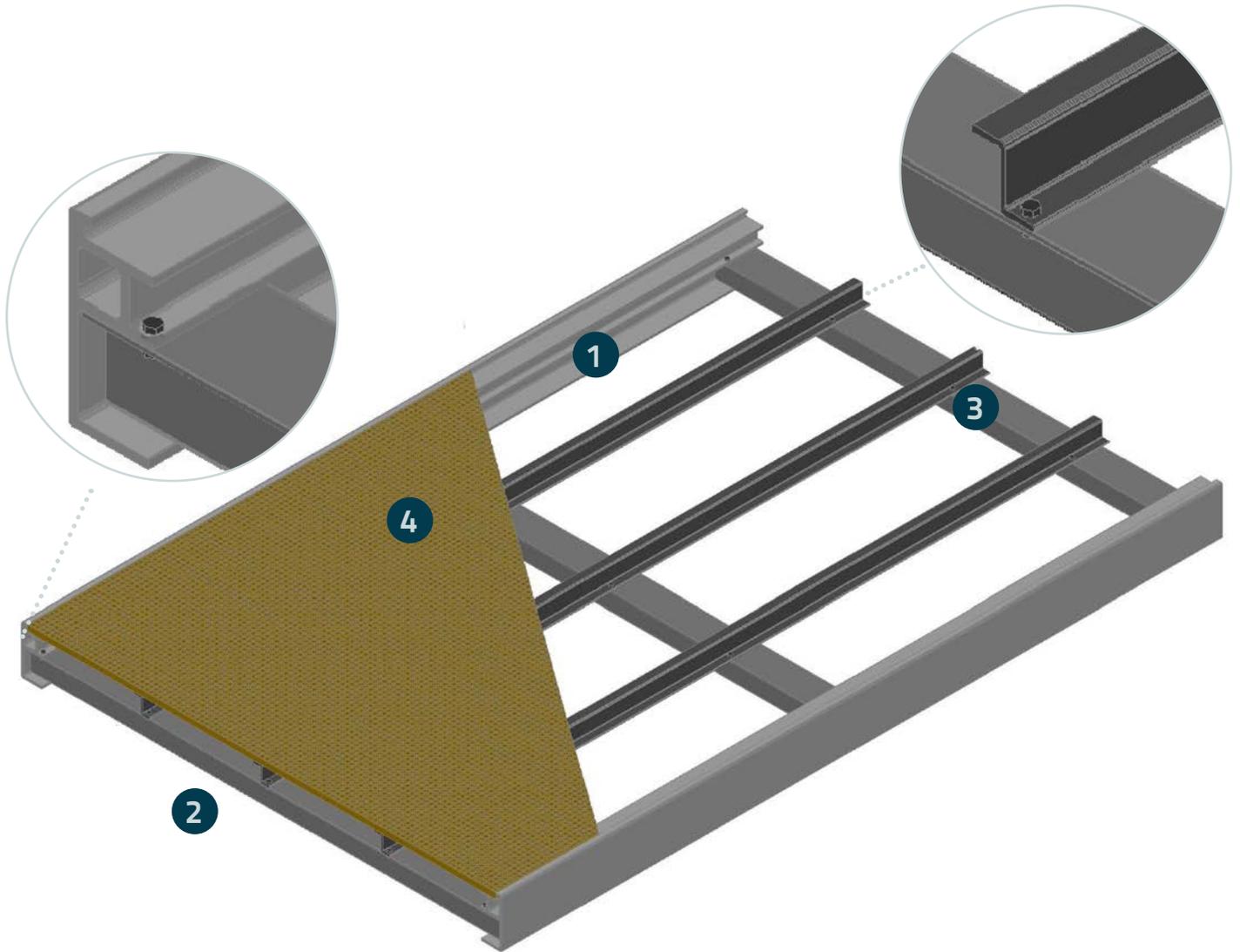
Available in a standard 3kPa pedestrian version or a more robust 5kPa version suitable for light vehicle. PermaStruct® Rapid Deck is ideal for remote and harsh locations where access and maintenance is an issue.

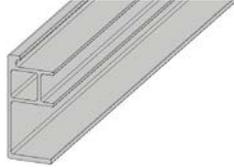
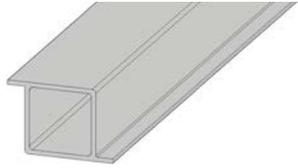
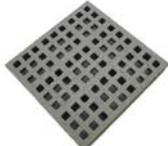
### Benefits

- ✓ 3kPa or 5kPa rated Boardwalk
- ✓ Modular format.
- ✓ A variety of anti-slip walking surfaces available, including PermaStruct® FRP Grating and PermaTimber® Composite Decking.
- ✓ At home in all environments, including wetlands, remote access areas and heritage sites.
- ✓ Certified to Australian Standards by independent authorities and is compliant with AS1657 (Fixed Platforms and Walkways).
- ✓ Can be specified with absolute confidence.
- ✓ Less expensive than traditional construction methods.
- ✓ Prefabrication is available for even greater project savings.



# PermaStruct® RapidDeck Components



#	Component	Profile
1	PermaStruct® RapidDeck Sub-Frame Profile #301 Channel	
2	PermaStruct® RapidDeck Sub-Frame Profile #302 Bearer	
3	PermaStruct® RapidDeck Sub-Frame Profile #303 Joist	
4	PermaStruct® Mini Mesh, PermaStruct® Micro Mesh or PermaTimber® 146 Decking	  

# PermaStruct® RapidDeck Specifications

## Material Properties

PermaStruct® FRP RapidDeck Profiles are made with properties applying along the profile and are manufactured in accordance with Perma Composites® quality system based on the requirements of ISO 9001.

Characteristic	Value
Resin	ISO or Vinyl Ester
Flexural Strength, Fy (Lengthwise / Crosswise)	302 Mpa / 76 Mpa
Young's Modulus, E	18600 MPa
Shear Strength, G	24.5 MPa

## Structural Arrangement

Load	Sub-Frame Profile #302 Bearer Spacing
3 kPa	800mm
5 kPa	550mm

## Decking Surfaces

Product Name	Panel Dimensions	Weight Per Panel	Slip Rating AS/NZS 4586:2013
PermaStruct® Micro Mesh	3687 x 1247 x 21mm	70.3	P4 / P5*
PermaStruct® Mini Mesh	3687 x 1247 x 21mm	69	P4 / P5*
PermaTimber® 146 Heavy Grain Decking	146 x 22 x 5400mm	22	P4

PermaStruct® Rapid Deck Sub-Frame Profile #303 will be spaced every 455 mm centre to centre.

PermaTimber® 146 Heavy Grain Decking and PemaStruct® Mini and Micro Mesh are able to withstand 5Kpa or lower at the specified Sub-Frame Profile #303 spacing for a one-way span.

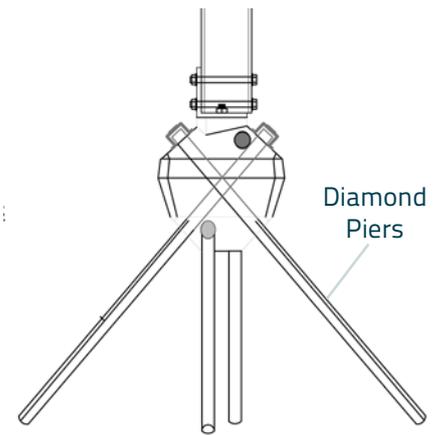
\*Different grit types available to meet the required slip-rating.

# PermaStruct® RapidDeck Footing Options

## Diamond Piers

Diamond Piers are a concrete, pre-engineered and low footprint foundation system and are the recommended footing option for PermaStruct® RapidDeck. The revolutionary design uses piles that go deep into the ground providing great support through the concrete pier.

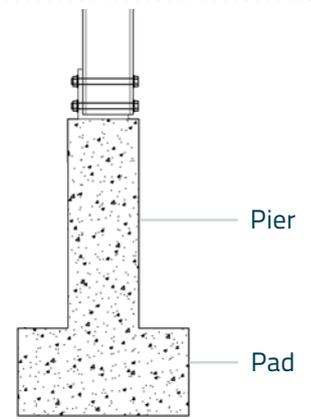
As little to no excavation is required, there is no need to use heavy machinery, which reduces noise on-site and environmental damage during installation. Ideal for sites with difficult access, Diamond Piers can be hand carried in and fixed allowing a structure to be easily removed or relocated if necessary.



## Piers Foundation

A Pier foundation consists of a collection of large diameter cylindrical columns to support the superstructure and transfer large super imposed loads below.

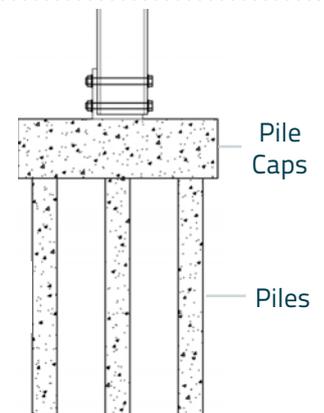
This method is easy and requires less amount of materials and labour than traditional methods. This makes it an efficient and effective foundation for PermaStruct® Rapid Deck as it causes less disruption to the soil environment. This method also allows engineers to easily modify existing designs.



## Pile Cap Foundation

A pile foundation is mainly used for extreme cases, where the load needs to be transferred to deeper soil/rock with higher bearing capacity due to the surface soil having a low bearing capacity.

Pile foundations are suitable for sites where the loading is significant, and the shallow soil is not as supportive. Pile Cap Foundations are normally only used for bigger projects.





## The Composite Experts

Innovation



Design



Engineering



Experts

Mining, Construction,  
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**PermaStruct®**  
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