



# **PERMASTRUCT<sup>®</sup>**

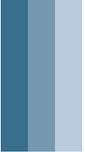
*Alternative, Clever*

**CAPABILITY STATEMENT**





# Composite solutions for *better*



# A material that *lasts*

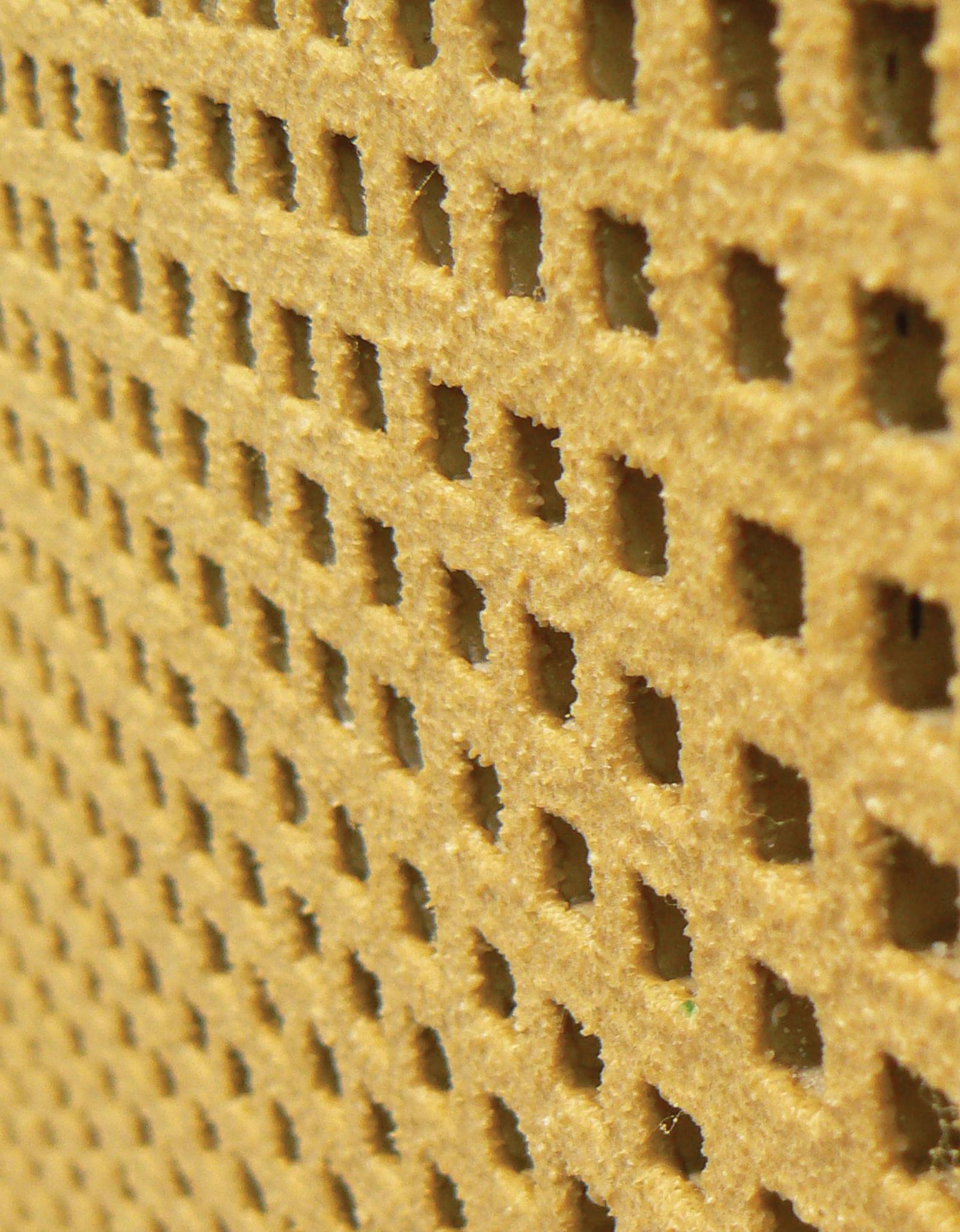
**For many project managers, procurement officers, and engineers, relying solely on traditional materials can be an uphill battle.**

When every dollar counts, balancing budget constraints with safety compliance can feel like a never-ending compromise. Steel and timber have served their purpose, but the constant need for maintenance and replacement eats into tight budgets and valuable time. In high-stakes environments, every day spent dealing with corroding steel or deteriorating timber adds pressure to an already demanding schedule.

Safety is always a priority, but when traditional materials struggle to meet compliance standards in harsh conditions, teams are forced to take on reactive maintenance, diverting resources from other critical tasks. The cycle of frequent repairs, unplanned downtime, and regulatory pressure doesn't just strain budgets.

**It risks project timelines and, ultimately, reputational trust.**







# The power of *partnership*

**PermaStruct® is one of Australia's leading suppliers of composite alternatives.**

For over 10 years, we've been working with project managers, engineers and operations managers to create composite solutions that meet their project needs. From our factory, we've created a clever alternative - fibre reinforced Polymer (FRP) products that are inherently corrosive-resistant, UV-resistant and built to withstand harsh environments.

Every project presents its own set of challenges and requirements. PermaStruct offers solutions designed to meet any application, whether it's extreme environmental conditions or unique structural requirements. PermaStruct materials are designed to last, offering a low-maintenance solution that eliminates the common issues associated with steel and timber, such as rust, corrosion, and rot. This durability reduces long-term upkeep costs and extends the lifespan of your installations, ensuring reliable and compliant project outcomes.

**As designers of innovative, high-strength, and low-weight composite products, our mission is to create best-in-class FRP solutions designed to meet each client's unique requirements.**

# The clever *material choice*

Fibre Reinforced Polymer (FRP), or "fibreglass," is a composite material made from a polymer resin matrix reinforced with glass fibres. The strength and durability of FRP come from the type, orientation, and placement of these fibres, all working together to boost the material's performance and structural integrity.

## Key Features of PermaStruct's FRP Composites:



### Great Strength

PermaStruct FRP composites are stronger than structural steel on a weight-for-weight basis. These materials are ideal for constructing walkways, platforms, and more that give you the same great strength as steel, but at a fraction of the density.



### Light Weight

PermaStruct FRP profiles are low in weight. This makes them easier to work with and means that great weight savings can be achieved. This results in reduced transportation costs, simpler installation, and less weight in structural designs.



### Corrosion Resistance

PermaStruct profiles are super durable - resistant to the effects of salt water and harsh weather. Our FRP profiles are engineered for extreme conditions and won't degrade over time. They're resistant to aggressive chemicals and liquids.



### Low Thermal and Conductivity

FRP composite is an exceptional insulator with low thermal and electrical conductivity, making it an ideal material for electrical applications.



### Built-in UV Protection

PermaStruct uses a unique resin formula with UV inhibitors to shield the polymer structure from harmful UV radiation, ensuring long-lasting durability. For added protection, PermaStruct's FRP profiles feature a synthetic surface veil that reflects and scatters UV rays, providing extra defence against sun exposure and environmental wear.



### Minimal maintenance

PermaStruct FRP composite's corrosion resistance minimises the need for routine repairs. As a result, products often have significantly lower life cycle costs compared to traditional materials such as steel and timber, even in demanding conditions.



### Worry-free

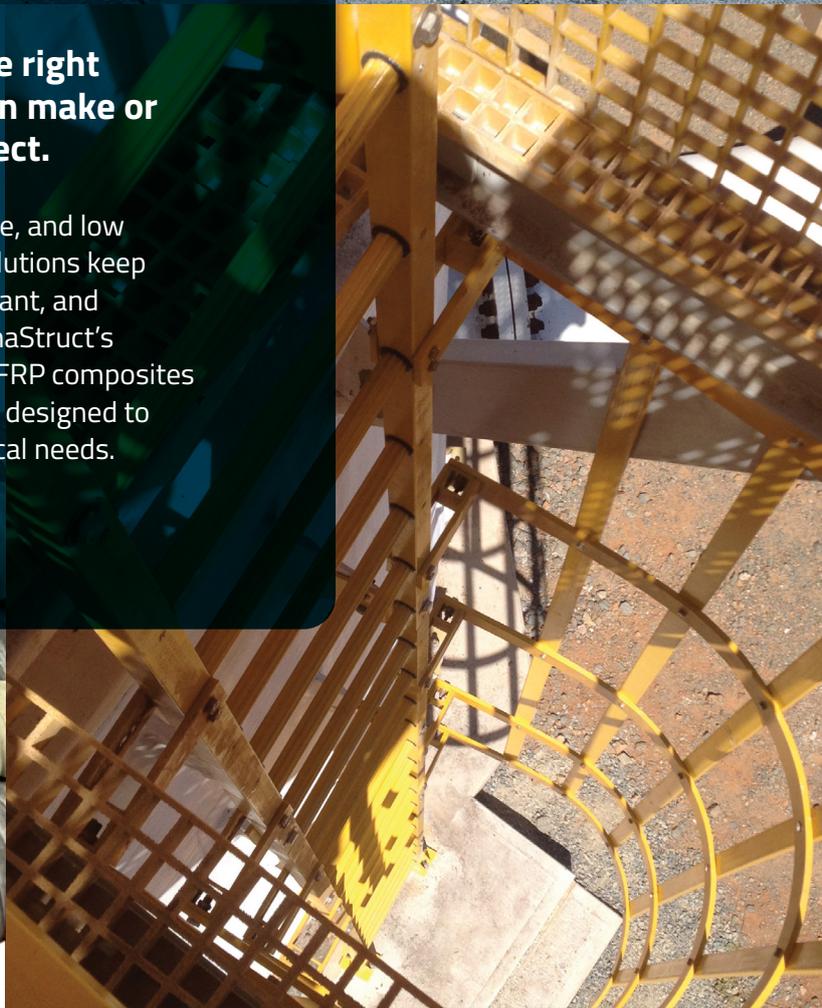
PermaStruct FRP composite products are regulation-spec and certified to comply with the relevant Australian Standards keeping you compliant and safe.



## Fit for *any* application

**Access to the right materials can make or break a project.**

Versatile, durable, and low maintenance solutions keep you safe, compliant, and on budget. PermaStruct's comprehensive FRP composites product range is designed to meet these critical needs.





### Grating

Durable and lightweight grating solutions are ideal for industrial applications, offering superior strength without the weight burden of traditional materials.



### Structural Profiles

High-strength profiles and adjustable pedestals are designed for robust construction frameworks, ensuring stability and longevity in even the most challenging environments.



### Boardwalk Solutions

Safe and aesthetically pleasing boardwalks for public and private spaces, combining functionality with visual appeal.



### Handrails

Corrosion-resistant handrails that ensure safety and compliance, maintaining their integrity and appearance in corrosive and high-traffic areas.



### Ladders & Cages

Reliable ladders and cages engineered for industrial environments provide secure access and improved safety.



### FRP Fasteners

Including FRP bolts, nuts, washers, and threaded rods, composite fasteners are ideal for non-corrosive, non-conductive applications and can replace traditional steel fasteners.



### Platforms & Staircases

Custom platforms and staircases tailored to specific site or project needs, providing versatility and design flexibility for unique spatial requirements.



### Trenches

Efficient trench solutions for utility installations, ensuring reliable performance and easy installation for underground utilities.



### Cable Ladder & Tray

Organised cable management systems that streamline electrical installations.



### Crossarms

FRP composite crossarms are designed for low and high-voltage systems, as well as distribution, transmission, and sub-transmission networks.



### FRP Rebars

Lightweight yet strong, FRP bars provide a durable, corrosion-resistant, and chemical-resistant alternative to steel bars in concrete. They are suitable for a wide range of structural applications and are designed to withstand harsh environments.



### Custom Fabrication

Bespoke fabrication services designed with client teams result in specialised FRP solutions.

# Drafting and Design *Services*

**PermaStruct provides a full suite of drafting and design services, guiding clients from initial concept to on-site support.**

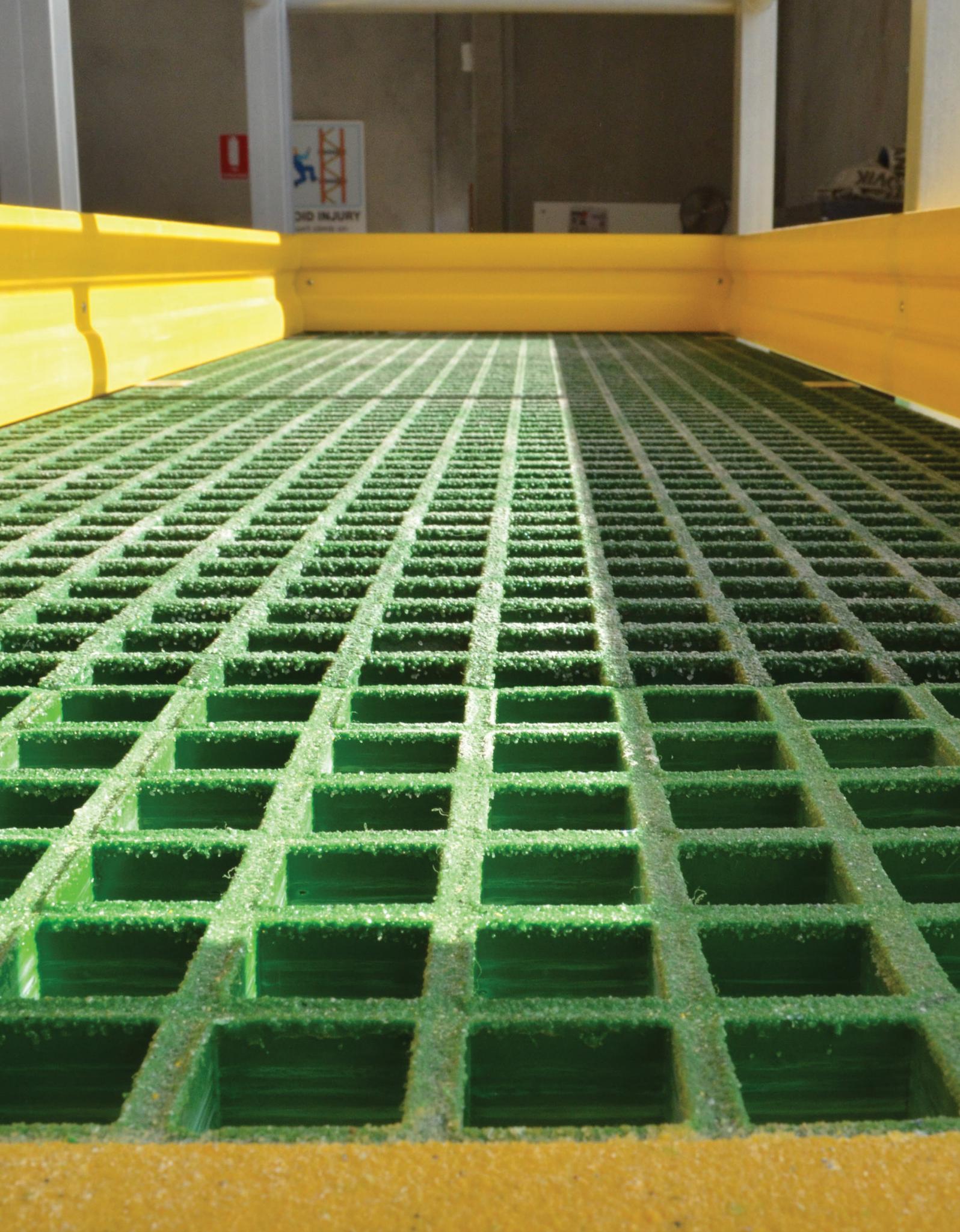
Our team produces a variety of detailed drawings, including Structural Engineering IFC and shop detailing, using advanced modelling techniques to ensure all designs are precise and thorough. We also offer engineering certificates, including structural sufficiency and compliance certifications, guaranteeing that each project meets high safety and quality standards for a 50-year design life.



# Research and *Development*

**At PermaStruct, research and development are central to our mission of driving innovation in FRP materials and applications.**

As leaders in the field, we collaborate with top universities on pioneering studies and are recognised in global engineering journals. Notably, our contributions are featured in the Journal of Engineering Structures, Volume 315, 2024, in an article titled, "Innovative Bridge Deck Solutions: Examining the Impact Response and Capacity of UHPC with FRP Stay-in-Place Formworks." Through these partnerships, we advance the FRP sector with sustainable solutions that set new standards in durability, efficiency, and structural integrity.



An aerial photograph of a harbor. A long, light-colored pier extends from the top left towards the center. In the foreground, two yellow floating docks with black pilings are visible. The water is a clear, vibrant blue. In the background, a city skyline and a large ship are visible on the horizon. The sky is bright with some light clouds.

# A *clever* partner

**In an industry where safety comes first, your business needs reliability.**

PermaStruct FRP solutions are built to Australian standards, creating best-in-class composite products to solve a site-specific problem.

**Perma Composites** is uniquely positioned to supply a comprehensive range of premium products, with **PermaStruct** specialising in FRP solutions and **PermaTimber** offering a variety of high-quality Wood Plastic Composites (WPC) products, all under the trusted Perma Composites brand.

## FRP solutions for mining: tackling corrosion, safety, and load challenges

**Industry and mining operations frequently grapple with material corrosion, workplace safety hazards, and the need for grating solutions that support long-span loads.**

To address these demands, PermaStruct developed a comprehensive FRP solution tailored to withstand harsh conditions, offer corrosion resistance, and maintain structural integrity. Our FRP Heavy Duty Pultruded Grating spans up to 1.2 metres with a load of 5kPa while maintaining a slim 38mm thickness - meeting rigorous requirements and reducing maintenance needs even in challenging environments.

For one of Australia's leading mining operations, PermaStruct's FRP grating replaced corroded steel grating that required frequent upkeep and posed

significant safety risks. Designed to span existing bearers without additional supports, our custom solution enabled crushed rock to pass through freely and ensured roll safety for size 6 work boots, directly addressing the site's operational requirements. Installed seamlessly onto existing infrastructure, the PermaStruct HD3860 series provided the strength and durability to support heavy loads while also offering slip-resistant safety features.

By shifting from reactive repairs to a proactive, long-term solution, this mining operation has reinforced its commitment to safety and efficiency. PermaStruct's FRP grating continues to play an essential role in improving operational safety and minimising maintenance across multiple sites, highlighting our dedication to delivering reliable, tailored composite solutions that support the demanding needs of industry and mining.



## Fire-resistant FRP solution for high-risk environments

**In industrial, mining, and commercial settings, floor linings and coverings must withstand fire hazards while maintaining safe evacuation paths.**



Traditional materials often fall short, risking safety and non-compliance. PermaStruct's advanced fire-retardant FRP grating addresses these challenges, fully meeting ABC 2022 standards with high fire-resistant properties.

Our FRP grating achieves a Critical Heat Flux of over 4.5 kW/m<sup>2</sup> and a Smoke Development Rate of less than 100%-min, reducing smoke levels for safer evacuation. Rated Class A for fire safety (ASTM E84), our grating features an Ignitability Index below 10, a Spread of Flame Index under 5, and a Smoke Development Index below 8, ensuring minimal ignition risk, limited flame spread, and low smoke emission. PermaStruct's FRP grating provides a reliable solution for environments requiring strict fire hazard compliance, delivering enhanced safety and peace of mind.

## FRP solution for **stay-in-place formwork** **Rebars** for concrete slabs

Concrete slab construction often encounters issues with durability, cost, and labour efficiency, especially when using traditional formwork systems that are heavy and labour-intensive. PermaStruct's FRP stay-in-place (SIP) formwork tackles these challenges head-on, offering a lightweight yet robust solution that is both corrosion-resistant and durable.

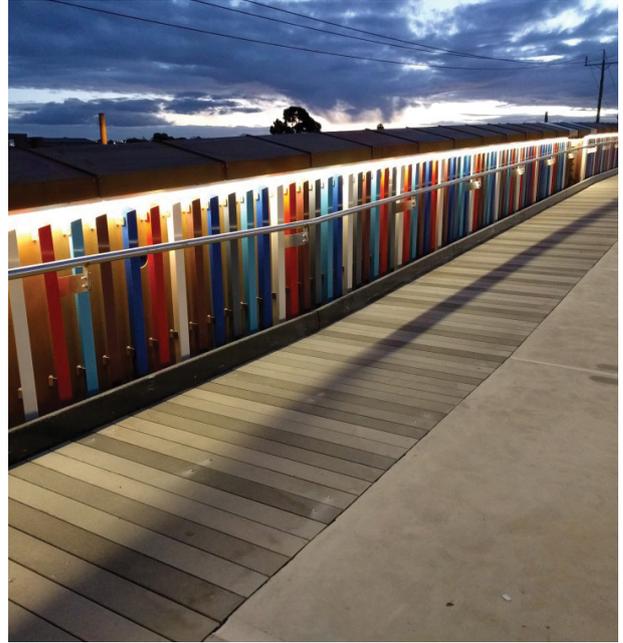
Designed to streamline the construction process, our FRP SIP formwork reduces installation time and labour costs, while enhancing the structural integrity of the slabs. With PermaStruct's FRP solutions, projects benefit from improved efficiency, lower costs, and long-lasting slab performance.

## CASE STUDY

# Elevating **bridge infrastructure**

PermaStruct played a key role in the completion of the West Gate Distributor Bridge in Melbourne, providing over 190 metres of Composite Decking and 380 metres of FRP Trenches. Designed for quick installation, the Composite Decking was custom-made to size, featuring unique multi-coloured planks that added a distinctive visual appeal to the bridge while meeting the structural demands of the site.

The custom design streamlined the installation process, reducing the need for on-site modifications and minimising disruption to commuter traffic. By choosing durable FRP materials, the bridge's resilience against harsh conditions has increased, reducing the need for long-term maintenance.

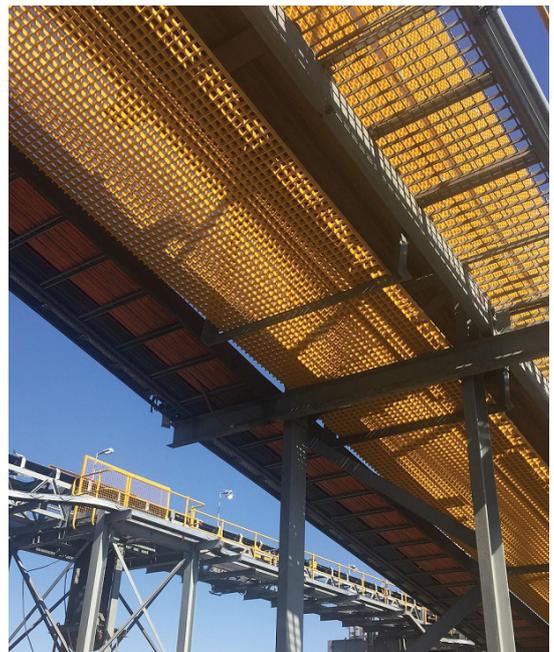


# Upgrading **conveyor safety** in Queensland

**PermaStruct was engaged to supply FRP conveyor guarding for a major commercial project in Queensland, Australia.**

The project required a durable and safe alternative to traditional materials, and our FRP Conveyor Guarding fit the bill perfectly. Non-conductive, non-corrosive, lightweight, and highly durable, the FRP guarding provided a superior solution for the harsh conditions on-site.

By opting for PermaStruct's FRP guarding, the project team reduced maintenance requirements, extended the lifespan of their conveyor systems, and ensured compliance with stringent safety standards—all while creating a safer and more productive work environment.



## Reducing maintenance in a **public park**

**The timber viewing platform at Woolgar Park had become a safety hazard, with significant deterioration rendering it both unsightly and unusable.**

PermaStruct suggested a different approach, replacing the old structure with a modern upgrade that features FRP substrate, FRP handrails, and WPC decking. This innovative combination ensures the platform is built to last, offering superior durability and safety for all visitors. With corrosion-resistant materials and a design that minimises ongoing maintenance, the new platform not only addresses the issues of the past but also elevates the park's appeal.



## A lasting **restoration**

**Barkers Bridge in Guildford, WA, had needed a complete overhaul, with its 150m footpath and guardrails deteriorating significantly.**

Perma Struct partnered with Adventuring Civil Engineers to restore the bridge using a range of PermaStruct and PermaTimber products. The project called for a solution that could not only withstand the elements but also enhance the aesthetic appeal of the community landmark.

By combining the strength of PermaStruct with the natural look of PermaTimber, the newly reconstructed bridge meets modern safety standards while offering a long-lasting, low-maintenance alternative to traditional materials. The upgraded pathway and guardrails ensure a safe and visually appealing crossing, allowing the community to enjoy the revitalised space for years to come.



## CASE STUDY

# Resilient, low-maintenance flooring for Elizabeth Quay Towers

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**For Perth's Elizabeth Quay Towers A & B, PermaStruct provided a robust, low-maintenance flooring system spanning 4000 square metres, designed to withstand high-traffic commercial use.**

Our solution combined PermaStruct FRP joists, adjustable PermaJack PVC pedestals, and PermaTimber 225 decking, delivering a strong foundation with a high-quality, visually appealing finish.

PermaStruct's FRP joists are corrosion-resistant, moisture-resistant, and built for long-term durability, providing excellent load-bearing capacity while remaining lightweight for easy installation. PermaStruct Adjustable pedestals enabled precise levelling across the entire floor, creating a stable base that can withstand both heavy loads and harsh conditions. To complete the system, PermaTimber 225 decking with a mini-gap clip system provided a natural woodlike appearance that requires minimal upkeep and resists fading, splitting, and insect damage - offering a sustainable, long-lasting choice for commercial environments.



**Our commitment to quality and safety** is underpinned by industry-leading certifications and a track record of compliance with stringent standards.

Perma Composites Operations are carried out under our Quality Management System, certified to ISO9001.2015/ANZSIC CODE 3739, and our OHS Management System, certified to ISO 45001.2018/ANZSIC CODE 3739.

**We're proud to partner with a diverse range of clients** across various sectors, delivering solutions that meet and exceed expectations.



# Partnering with *PermaStruct*



Our experienced leadership team is committed to delivering **clever, alternative solutions** for all projects.

**Alistair MacKinlay**  
*Managing Director*

**Ashley Chaplyn**  
*Chief Operating Officer*

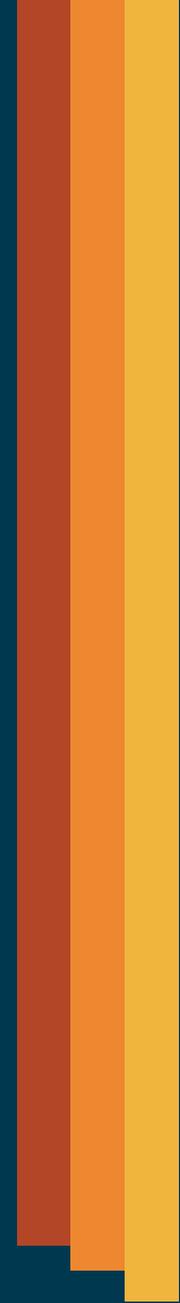
**Emad Pournasiri Basti**  
*Chief Engineer*

**Tom Phelan**  
*Business Development  
Manager - East Coast*

**Corey Hull**  
*Business Development  
Manager - West Coast*



With headquarters in Perth and support offices in Queensland and Victoria, PermaStruct **offers national support for our clients and their operations.**



See the full PermaStruct® range at  
**[permacomposites.com](https://permacomposites.com)**

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