

Rio Tinto Dampier Salt Jetty, Lake Macleod Facility

PSX[®] 700 Protects and enhances the fiber reinforced plastic (FRP) jetty panels for extended service life



The Customer

Songa Shipmanagement Ltd., Glasgow

The Location

Cape Cuvier, Western Australia, Australia

The Challenge

DSL operates a 40-year-old, 600-meter load-out wharf at Lake Macleod operations. DSL required an extension to the wharf's 25-year life span

The Solution

The PSX 700 patented engineered polysiloxane topcoat and SIGMASHIELD™ 1090 high-build, friction grip epoxy for anti-slip areas

The Benefits

The PSX 700 topcoat offers cutting-edge UV ray stability and easy-to-clean benefits; the SIGMASHIELD 1090 epoxy coating provides the friction grip required for durable, anti-slip surfaces

The Result

The system restored and enhanced the wharf to protect it for an additional 25 years against exposure to large amounts of UV, salt and other corrosive factors

The Customer

DSL has three salt operations located at Dampier, Port Hedland and Lake MacLeod. DSL collects seawater, concentrating the salt through evaporation to harvest, then washes and transports the salt to port.

The concentration of seawater to salt is done through evaporation without producing any carbon dioxide (CO₂). DSL has a long term commitment to sustainable development that not only includes environmental stewardship but also social wellbeing and economic prosperity.

As a member of the Rio Tinto Group, DSL has strong governance systems supporting sustainable development programs.

The Challenge

DSL has a 600-meter load out wharf for their salt facility at Lake Macleod. The main issues on this project were that the jetty structure was over 40 years old and made of a steel structure with wooden decking.

DSL was seeking a solution that would extend the jetty's 25-year life span. The wooden decking needed to be replaced, as it was no longer a viable option. After a comprehensive evaluation, fiber reinforced plastic (FRP) panels were chosen, which were lighter in weight, with superior strength to wood, and would meet the required 25-year lifespan.

In addition, the FRP panels needed to be coated with a coating system that offered anticorrosive and anti-slip properties.



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The Solution

After consultation with several coating manufacturers, DSL chose the PSX 700 system from PPG Protective & Marine Coatings (PPG) for the 2,400 m² jetty decking area, which comprised these two coatings:

- PSX 700 engineered polysiloxane topcoat
- SIGMASHIELD 1090 ultra-high-build, flint-reinforced epoxy compound

As the painting contract for the FRP panels was awarded to Argos FRP, PPG conducted full product application training in the Argos FRP factory in Selangor, Malaysia to ensure the most effective application.

Regarding the application process, surface preparation for the FRP panels involved thorough power tool and water washing, followed by application of the PSX 700 system by roller. The panels were then transported to Cape Cuvier, North Western Australia for installation over the next 12 months.

The Benefits

The DSL project required an extremely durable and proven system to comply with its particular demands.

PPG's patented PSX 700 engineered polysiloxane is a high-gloss topcoat that provides improved color and gloss retention compared to the best urethane on the market. The system aids maintenance as its high surface tension limits the accumulation of dirt making it easy to clean. In addition, its combination with epoxy gives the coating the unique property that makes it more resistant to chemicals, weather and abrasion.

The SIGMASHIELD 1090 solvent-free, sprayable epoxy cladding provides a seamless water impermeable layer with excellent anticorrosive properties. It is most suitable for decking areas that are exposed to heavy impact and abrasion, and provides the friction grip required for durable, anti-slip surfaces.

The Results

The Dampier Salt – Lake Macleod jetty has now been restored and equipped with durable and lightweight FRP decking panels.

PPG's PSX 700/SIGMASHIELD 1090 system will provide extended color and gloss retention, superior chemical and abrasion resistance along with excellent easy-to-clean, anti-slip properties. The system will provide the most resilient protection for the jetty and will also extend its service life to meet Dampier Salt's expectation.



Image: Completed panels waiting for installation at Cape Cuvier



Image: SIGMASHIELD™ 1090 being sprayed



Image: PSX® 700 Safety Yellow drive line

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