asset|FRP

asset INTERNATIONAL STRUCTURES

FRP Composite Rail Platforms

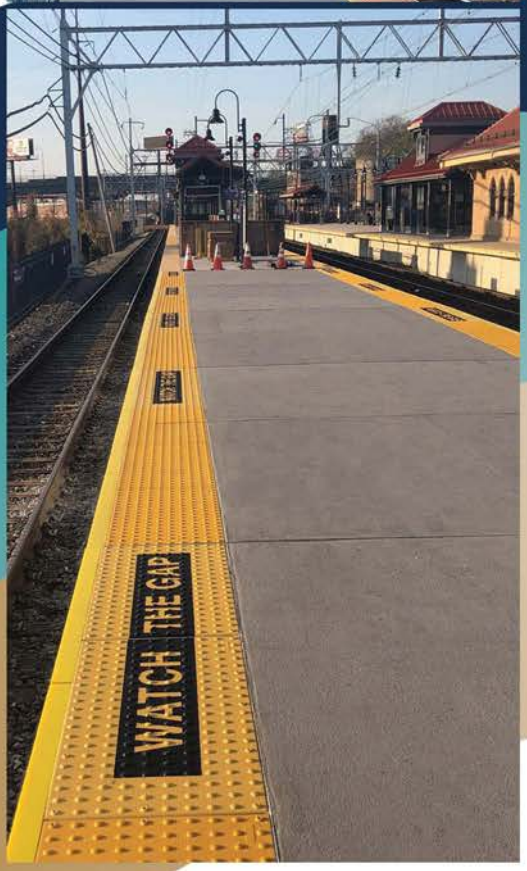
Helping to build a sustainable planet

Our products help infrastructure become more sustainable by providing

OFF-SITE MODULAR CONSTRUCTION

MINIMISING EMBODIED CARBON

MAXIMISING SAFETY



FRP Composite Rail Platforms

asset FRP is a world-renowned pultruder, providing FRP material, to a wide range of projects, with environmental considerations and budgetary constraints

asset FRP is an innovation leader in the design and manufacturing of Composite Products. We provide off-site modular construction delivering sustainable engineered solutions that are lightweight, corrosion-resistant, minimising embodied carbon, long-lasting using advanced manufacturing processes for today's infrastructure market.

asset International Structures offers a full design service, manufactures and supplies FRP composite rail platforms, footbridges, and bridge decks. We will work with you to provide bespoke designs that address all specific project requirements if you can imagine a product or project. Our engineers, technology will turn your concept into reality for projects of any size, shape, or scope.

BENEFITS OF FRP OVER TRADITIONAL MATERIALS	
STEEL	FRP is highly corrosion-resistant, whereas steel is susceptible to rust from chemicals & weather exposure. FRP is as strong as steel & weighs significantly less; for a great strength-to-weight ratio.
ALUMINIUM	Unlike aluminium, FRP has low thermal conductivity, meaning it serves as a great insulator. It's also corrosion-resistant, non-conductive, and won't deform under impact.
WOOD	Wood components are prone to warping, decay, and rot. FRP exhibits excellent resistance to corrosion, mildew, mold, and other conditions that timber cannot stand up against. FRP delivers extreme durability without the need for environmentally hazardous coatings.
CONCRETE	FRP panels are 80 % lighter than reinforced concrete. There is no spalling, cracking or damages from moisture, salt, or chemicals.

FRP is an ideal choice for a wide range of products due to its core components and performance; the material is:

LIGHTWEIGHT MATERIAL
Components are incredibly lightweight compared to other construction materials; this makes them safer, easier to work with, reduced transport costs, and require smaller cranes to install.

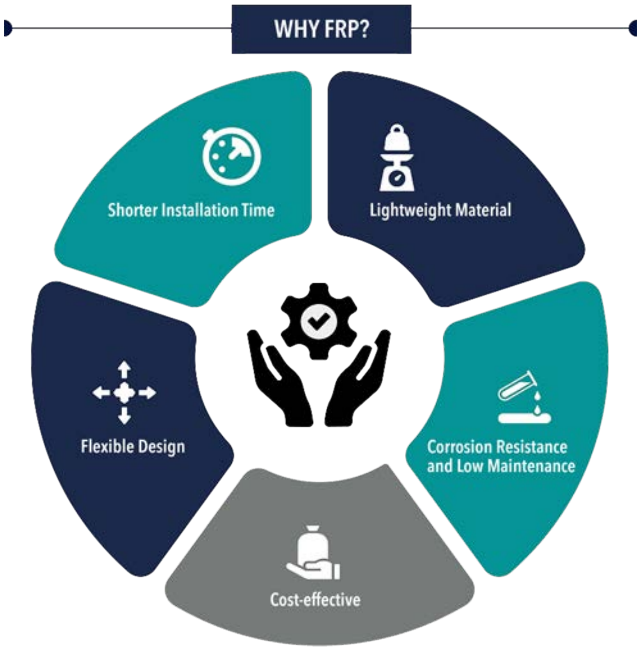
CORROSION RESISTANCE & LOW MAINTENANCE
Highly durable, making it suitable for heavy-duty usage in a wide range of environments. Its corrosion resistance makes FRP capable of withstanding salt, water, chemicals, and other harsh weather conditions without deterioration; this means it can last for up 100 years with very little need for maintenance or rebuilds.

LIFE CYCLE COST SAVINGS
Built from our high-quality components to offer long-term cost savings (LCA), low operating costs, minimal maintenance, and service disruption.

FLEXIBLE DESIGN
Engineered to meet the exact application requirements where factors such as size, shape, colour, and functional features can be customised to ensure smooth and easy installation.

FASTER INSTALLATION TIME
Prefabricated, allowing crews to install each part much faster; this makes FRP ideal for construction projects in public areas with tight timelines and limited construction hours.

LOW CARBON FOOTPRINT
Less energy in the manufacturing process.



FRP Composite Rail Platforms

asset FRP composite rail platforms provide the rail industry with a robust corrosion-resistant structure. The platform's high specification is designed to perform under all weather conditions and, in addition, will not deteriorate during chemical de-icing and high levels of foot traffic at stations.

For ease of installation, the panels are lightweight, reducing construction time during train schedules and decreasing the inconvenience to commuters.

The system's available design options are the moulded slab system at 4.5m long or the double tee at 10.4m long. Typical widths 3.3m can go wider in multiple panels.

FEATURES OF THE asset FRP PLATFORMS

- High-quality FRP materials.
- Non-slip surface and tactile paving.
- Design flexibility with a range of panel sizes.
- Lightweight structure for easy installation.

BENEFITS OF THE asset FRP RAIL PLATFORMS

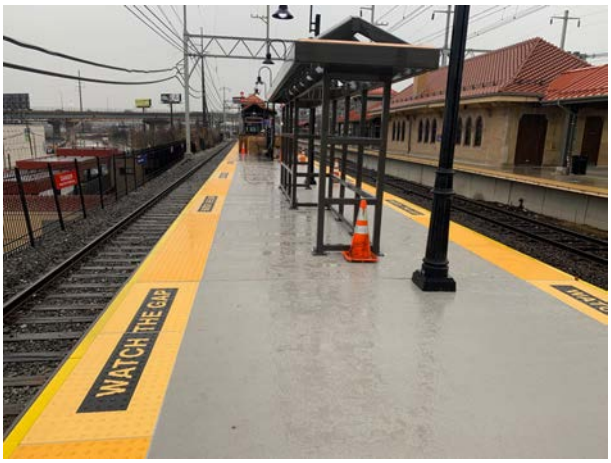
- Highly corrosion resistant.
- Minimal maintenance lower life cycle costs analysis.
- Speed of installation reducing construction time.
- Can be installed where foundations are either concrete or piled systems.
- Fewer components reducing health and safety risks on site.

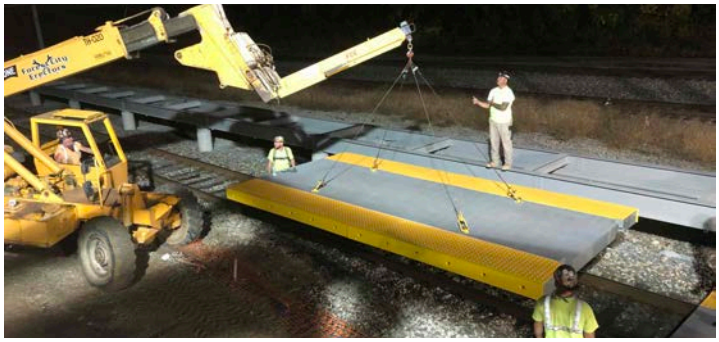
ADDITIONAL PLATFORM OPTIONS

- Attachment points for the back fence, benches, lamp posts end of platform fencing and underside utilities/services.
- Speed lines.
- Rainwater gutter.

LIGHTWEIGHT FRP (RESIN VACUUM MOULDED) PLATFORM PANEL

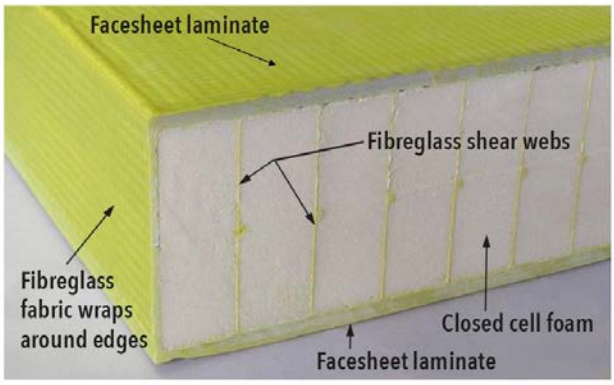
Supplied in large sections to minimise a train service blockade and allow rapid installation. Decks supplied with all non-slip surface and tactile factory fitted so no wet work required. Back fence, waiting shelters and benches can be attached to the platform deck along with services to the underside.





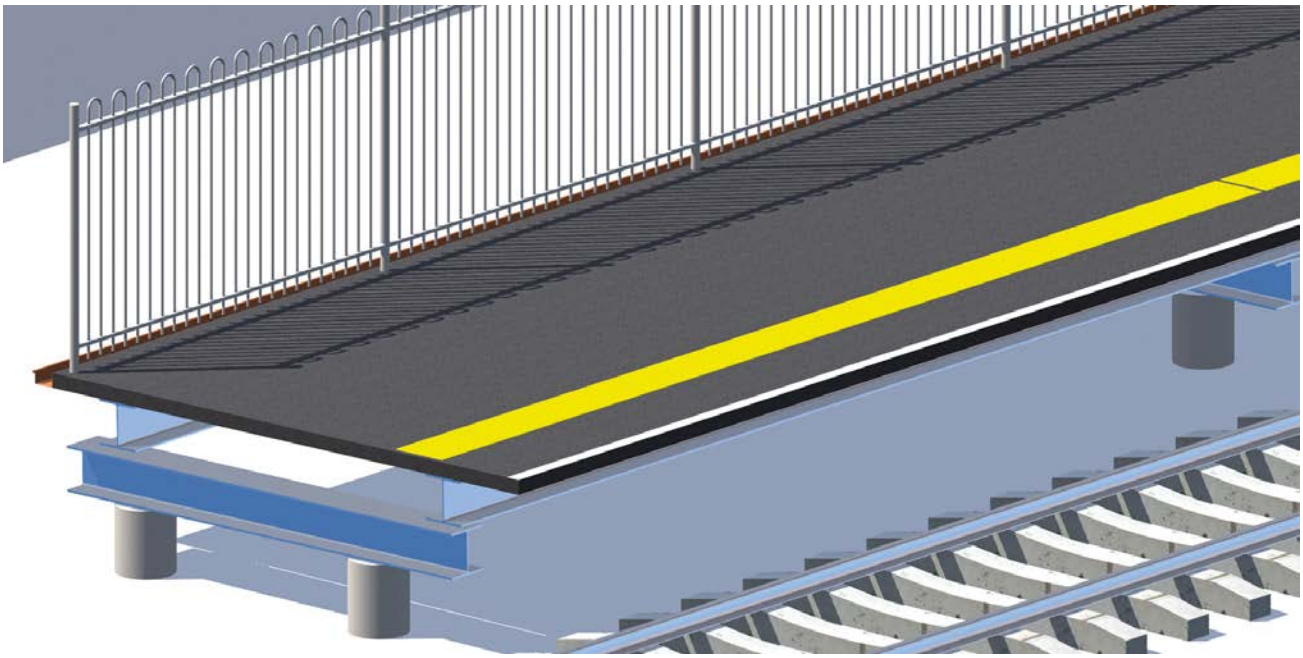
FRP CONSTRUCTION

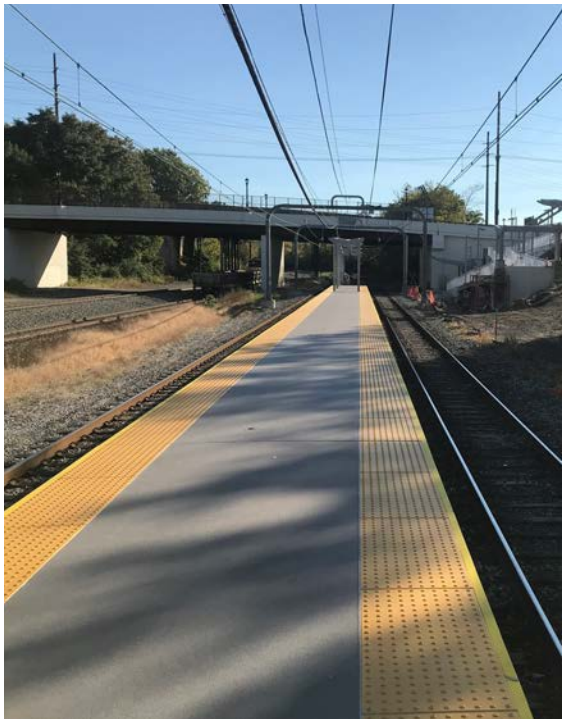
The FRP deck panel is a sandwich construction with many internal shear webs moulded with the top and bottom face sheets. This construction allows the panel depth and the laminate/web thicknesses to be designed for any support configuration. The foam is non-structural and formed during the manufacturing process; this eliminates cavities so that water cannot collect.



DESIGN CONCEPT RAIL PLATFORM & MODULAR SUB STRUCTURE DESIGNED BY ASSET INTERNATIONAL STRUCTURES

- Two platforms typically 125m x 3.3m (other widths can be supplied) with a total area of 825m2 (see below rendered examples).
- Deck panels 3.3m x 2m supplied 4 panels per 8m bay.
- Non-slip grit surface quartz aggregate in a methyl methacrylate polymer.
- Tactile paving 400m wide. Excludes high speed safety line.
- Modular steel support frame with 8m beam weight of 768kg avoiding the need for heavy plant.
- FRP deck 100mm thick units weighing 231kg per panel (35kg/m2).

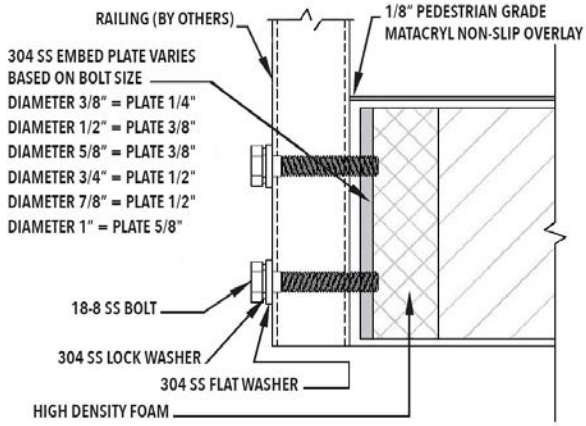




CONNECTIONS

- Each vertical face of the concrete T`s will have an embedded channel to allow connections of the decks to the concrete supports allowing horizontal adjustment.
- Each 4.41m bay would have 6 stainless steel connection brackets.
- Each bracket would have four slotted holes to allow for vertical and horizontal adjustment for gauging from the track.
- Each bracket would then require two bolts to be fitted to the internal connection embedded into the FRP decks.

RAILING ATTACHED ON BACK EDGE, OPTIONS IN STEEL OR FRP



TACTILE

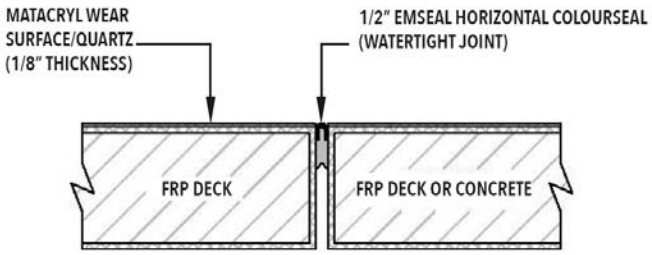
Tactile warning tiles are shop applied to the panels using adhesive to suit rail authority's standard.

NON-SLIP OVERLAY

For safety, a non-slip wear surface overlay is applied in the shop to the top surface of rail platform decks. The material is a polymer aggregate that is similar to that used on vehicle bridge decks. The rail deck version uses a quartz aggregate in a methyl methacrylate polymer. The quartz aggregate comes in a variety of colours and is unaffected by UV radiation and does not fade. This commercial system from RPM Belgium has been used in Europe for almost 20 years and has been used in North America for the past five years.

PANEL-TO-PANEL JOINTS

These joints are sealed to prevent water getting into the substructure. A compressed foam and silicone strip is bonded to the panel edge. This product is used in parking garages and is long lasting.



OPTIONAL EXTRAS

DRAINAGE TRENCH

Drainage trench is moulded into the panel surface near the back edge of the panel. Grating covers the trench. The rainwater down pipes will be spaced at agreed centres and fixed to the underside of slab.

UTILITY SUPPORTS

Hangars on the bottom of the deck carry utilities and conduit.

TRASH SCREENS

FRP 25mm moulded grating with 32x32mm apertures on both sides of the platform. Below the FRP deck.

INSTALLATION SEQUENCE

1. Preparation of the ground for placement of the precast concrete modular structure. (Approximately 50KN/m2 bearing pressure).
2. Position the precast support foundations and onto the prepared sub grade ensure they are correctly set out relative to the track. The top of the unit will be cast with a 1 in 80 cross fall away from the track.
3. Once the supports are in place the front standard coping unit 4.41m x 1.094m can be placed on the front edge parallel to the track and commence gauging using the adjustability within the connection brackets. Once gauged all bolts to tightened to specified torque.
4. After fitting the front coper panels these can then create green zone for safe installation of the back panels 4.41m x 2.206m and use the same method for connecting and levelling of the deck.

The complete modular rail platform system is a lightweight-reducing onsite activities, ground preparation, and additional foundation work. The applied live loads and self-weight of the deck would only create a ground bearing pressure load of 33KN/m2 excluding the concrete support. Including the concrete would increase this to around 50KN/m2.

For further information please contact

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