Station Components

Plura Innovations Full Station Product Range

PLURA
INNOVATIONS
POLYDECK

Station Components

Plura Innovations Complete Station Solution

Contents

The term 'possession' in this context refers to the process of closing an operational railway line and isolating it (if electrified) for the purpose of carrying out construction or maintenance work. A possession is therefore disruptive and reduces operational line time. The PlatformZERO™ requires zero possession time.

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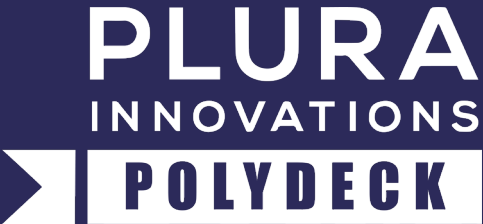
Committed to composites

At Plura we passionately believe in bringing the benefits of composite materials to the construction of infrastructure networks.

Aside from the well known benefits of long life and strength, there are many others that can often be tailored to specific applications such as non-conductivity, non-corroding or fire resistance.

The Plura team have many years experience in the design and manufacture of products, employing composite material technologies, and they bring this to bare in full in the new and innovative products they have launched to date, and the many that are in development.

Based on a 2 Acre site in Moreton, in the North West of England, Plura has invested strongly in Pultrusion and Compression moulding production and paired this with extensive composite cnc machining capabilities.

In addition, Plura have backed this up with very capable product development and testing facilities, all of which has lead to us being in the vanguard of UK composite material product producers, as composites become more the norm in the construction industry.

Composites, GRP, Fibreglass or FRP?

GRP or Glass Reinforced Polymers is a Composite material (consisting of two or more combined elements) that is also often referred to as Fibreglass. FRP or Fibre Reinforced Polymers is much the same thing; if the Fibres are made of Glass. In fact, with different resin types and carbon fibres as well as other types, FRP is considered a much wider term for the same thing.

RAIL SECTOR: Products for Station enhancement.

This brochure contains a brief outline of our products; for more detailed information, please refer to page 19 where further information sources can be found.

Pultrusion of Handrails & Compression moulding of manhole covers, both in Glass Fibre Reinforced Polyester Resin type composite materials.

Station Platforms

After 100s of years of consistant use, many of the UK's concrete train station platforms are now in need of replacement/refurbishment as they reach the end of their life. Traditionally concrete has been used, however this comes with downsides such as high costs and long track possession* times. However, with advances in technologies, PLURA have come up with the solution.

PLURAdeck is an all new, zero possession*, GRP station platform. Made from Glass Reinforced Plastic (GRP), compliant with Network Rail specifications, our all new station platform offers significant improvements over traditional solutions like concrete, with options for new build, refurbishment and platform extension projects,

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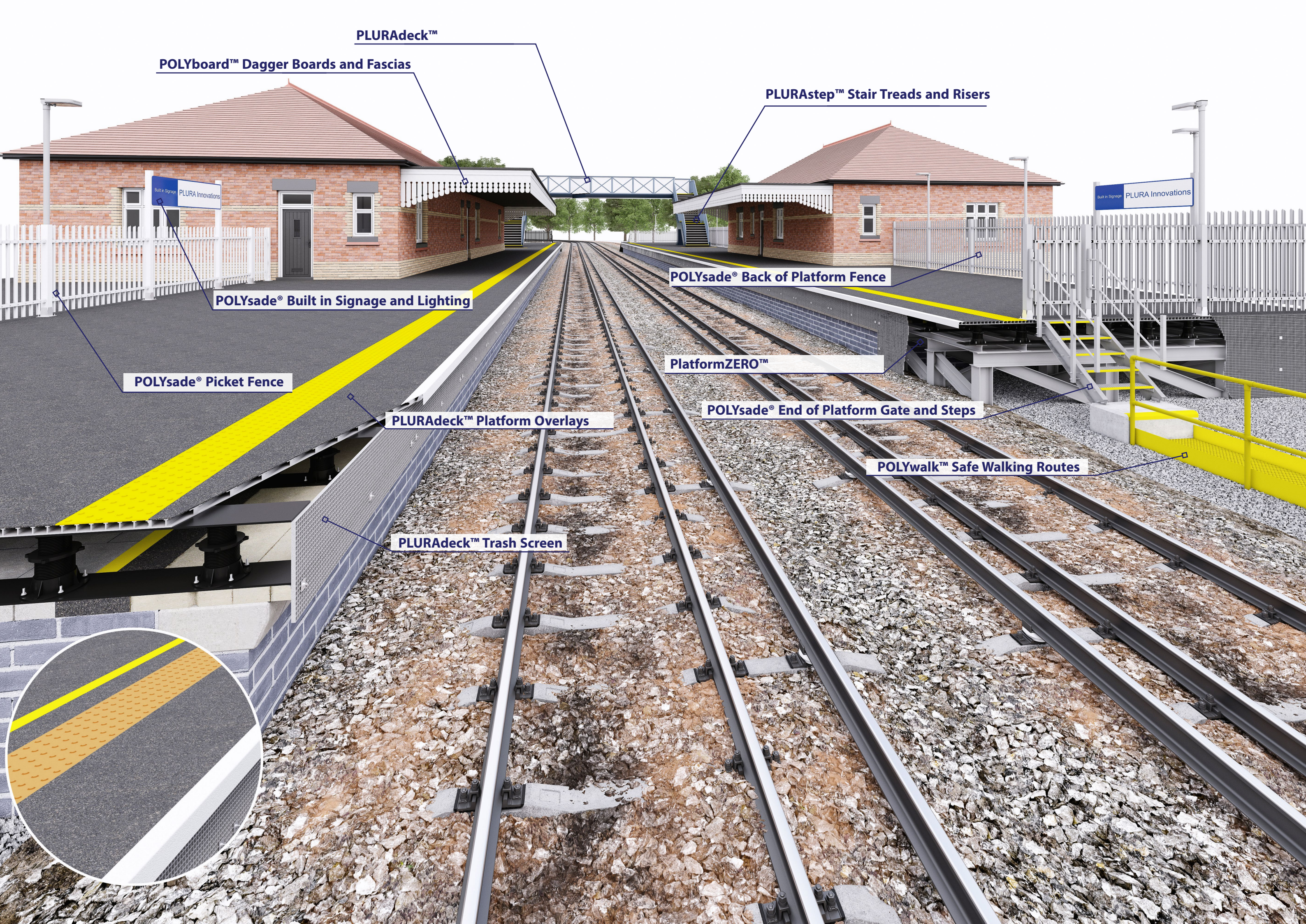
PLURAdeck™

POLYboard™ Dagger Boards and Fascias

PLURAstep™ Stair Treads and Risers

POLYsade® Built in Signage and Lighting

POLYsade® Back of Platform Fence

POLYsade® Picket Fence

PLURAdeck™ Platform Overlays

PlatformZERO™

POLYsade® End of Platform Gate and Steps

POLYwalk™ Safe Walking Routes

PLURAdeck™ Trash Screen

PLURA Innovations

Built in Signage

PLURAdeck 6mm & 12mm

Coper Panel

Overlay Panels are available in standard thicknesses of 6mm & 12mm to suit varying site conditions. Suitable for use on tarmac and paved rail platforms where the existing platform surface is in need of refurbishment. Manufactured in the UK, from a unique structural composite core which combines superior strength and rigidity with lightness of weight for ease of installation.

Panels drastically reduce refurbishment time as they have the front white nosing, tactile strip and yellow warning line already incorporated into the panel. With 1000s of square meters already installed over many years on UK and international rail networks, these GRIPfast™ surfaced panels have a great proven track record.

These panels are generally used in 5 different cases; Platform Overlays, Mountbridge, Platform Extensions, New Platform Builds and Platform Humps.
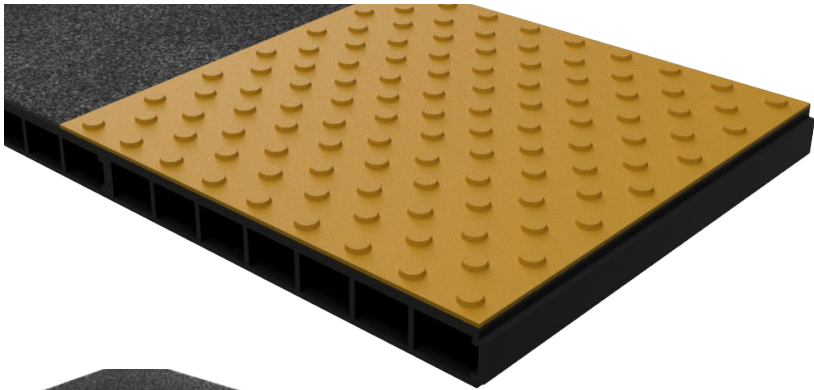
Tactile Panel A

Platform overlays aid in the resurfacing of existing platforms, a non structural solution to worn down concrete, rotting wood etc.

Plura offer a substructure, designed in situe with PLURAdeck, to allow the extension of existing platforms, as well as the construction of new platforms, all 100% GRP, with near zero track possession time.
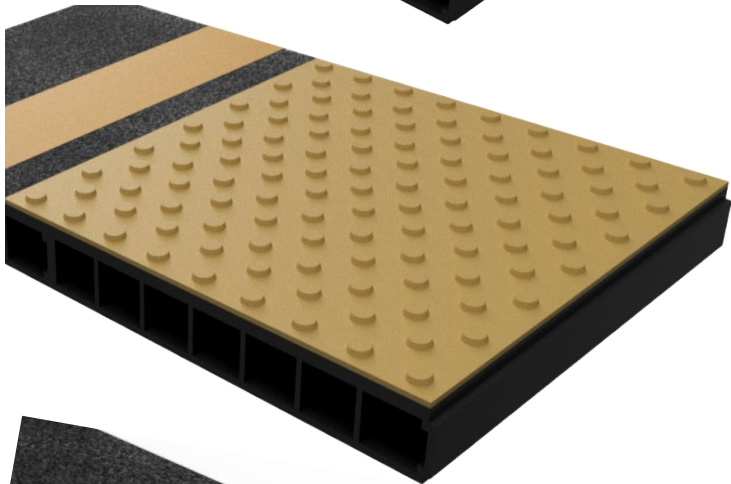
Tactile Panel B

For PTI adjustments PLURA offers 2 solutions. Where a more localised approach is required, the hump system is supplied with purpose designed and produced edging access ramps.
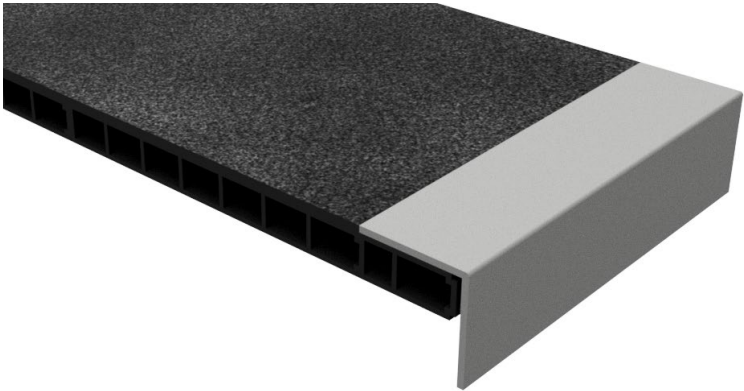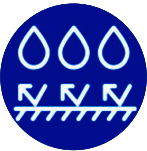
Intermediate Panel

| Diamond Hard Surface | Fire Resistant / Retardant | Made in the UK | Corrosion Resistant | High Strength | Quick Install Time | Lightweight | 70+ Year Life |

Platform Overlay

Suitable for use on tarmac and paved rail platforms where the existing platform surface is in need of refurbishment. Manufactured in the UK, from a unique structural composite core which combines superior strength and rigidity with lightness of weight for ease of installation.

Overlay Panels are available in standard thicknesses of 6mm, 9mm & 12mm to suit varying site conditions. Panels drastically reduce refurbishment time as they have the front white nosing, tactile strip and yellow warning line already incorporated into the panel. With 1000s of square meters already installed over many years on UK and international rail networks, these GRIPfast™ surfaced panels have a great proven track record.

Tactile available in Standard Buff or Yellow
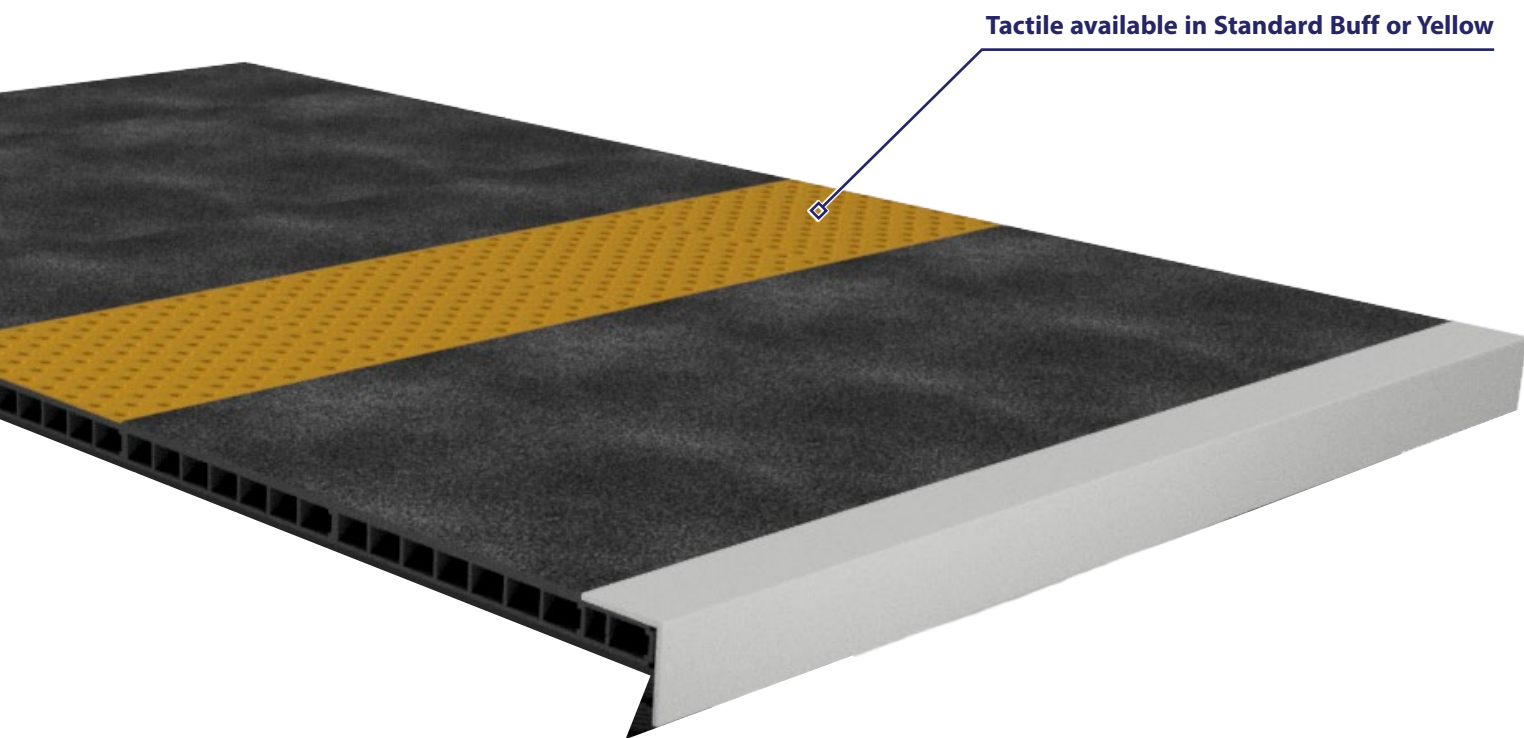
Mountbridge

Mountbridge™ is a future proof platform upgrade system.

It's an adjustable, extended lifecycle platform upgrade system that solves three major challenges facing the rail industry:

Rectifies Platform Train Interface (PTI) stepping distance issues.
Restores degrading platform surfaces to meet current safety standards.
Reduces installation and ongoing maintenance costs.

Mountbridge™ overlays the existing platform and is adjusted for height and oversail to bring the PTI stepping distance to standard. This reduces dwell times and minimises passenger related issues.

In most cases, Mountbridge™ overlays the existing platform structure and can be laid to curves. This eliminates the time, cost, mess and disruption associated with excavation and removal of existing structures. It may also minimise the installation procedure, is performed without inconveniencing passengers and without the planning and disruption of full track possessions often involving line blocks only.

Before

After

MOUNTBRIDGE®
PLATFORM SYSTEM
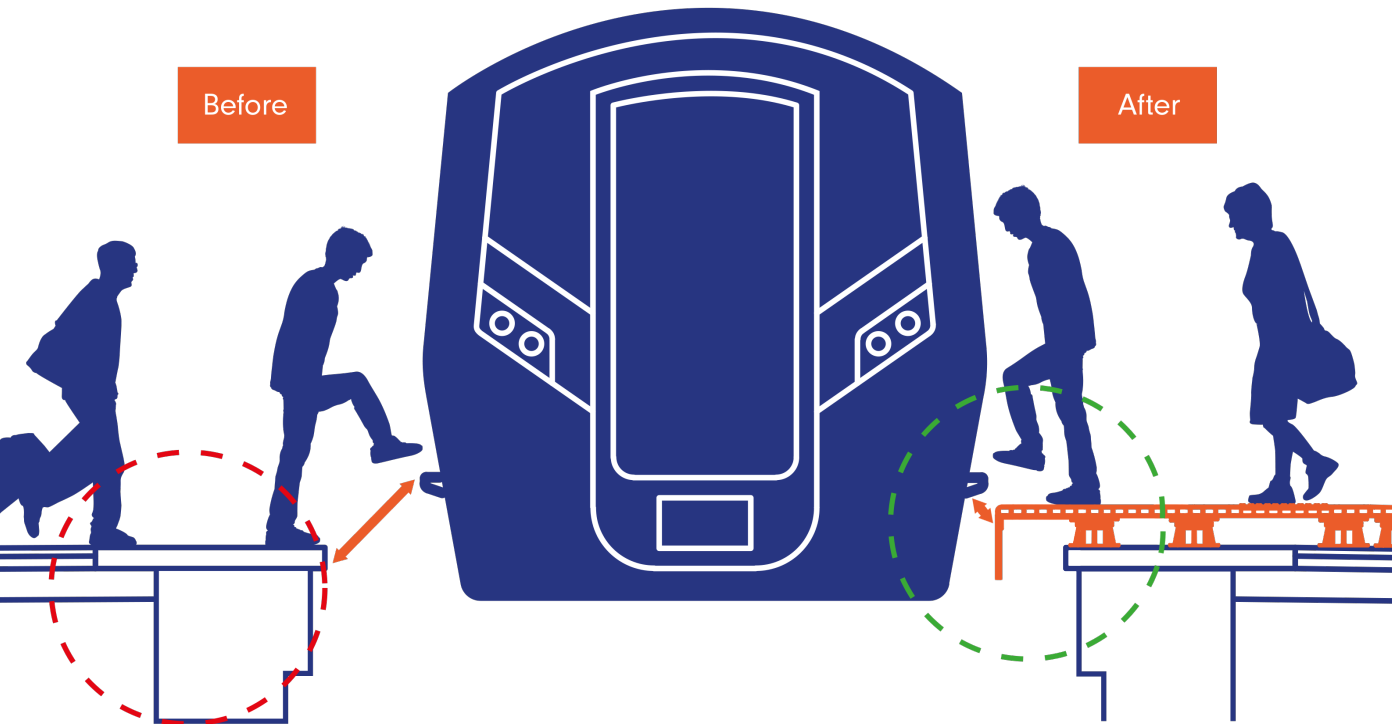
Platform Humps

Where a more localised PTI approach is required, the hump system is supplied with purpose designed and produced edging access ramps.

Created using adjustable pedastals and 6mm PLURAdeck for the full height section of the hump, with an angled access ramp, the platform humps can be used to add extra height to any existing platform where needed. These can be designed to fit your needs of width and height.


Access Ramps

Full Height Section

PLURAdeck™ Mountbridge

PLURAdeck™ Platform Humps
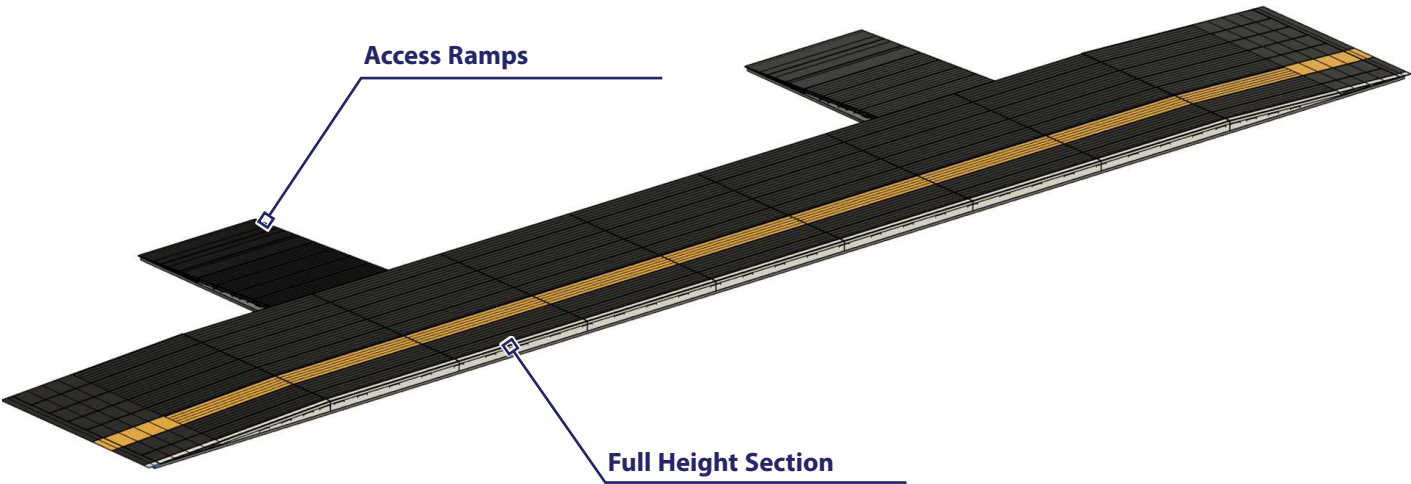
*PlatformZERO™ Platform Extension

Designed alongside our PLURAdeck™ Panels, PlatformZero™ is a full platform substructure built from the ground up. Combined with PLURAdeck™, this product allows us to create a seamless platform extension onto any existing station platform.

PlatformZERO™ is designed with the rail industry in mind, with minimal track possession time required, allowing for quick installation and minimal disruptions. With GRIPfast technology, our platforms have a lifespan of over 70 years.

Combining PlatformZERO™ with other PLURA products such as POLYsade® fencing, we can provide a complete 100% GRP platform extension.

POLYsade® Security Fence

Existing Station Platform

Pluradeck™ Panels

PlatformZERO™

End of Platform Stairs and Gate
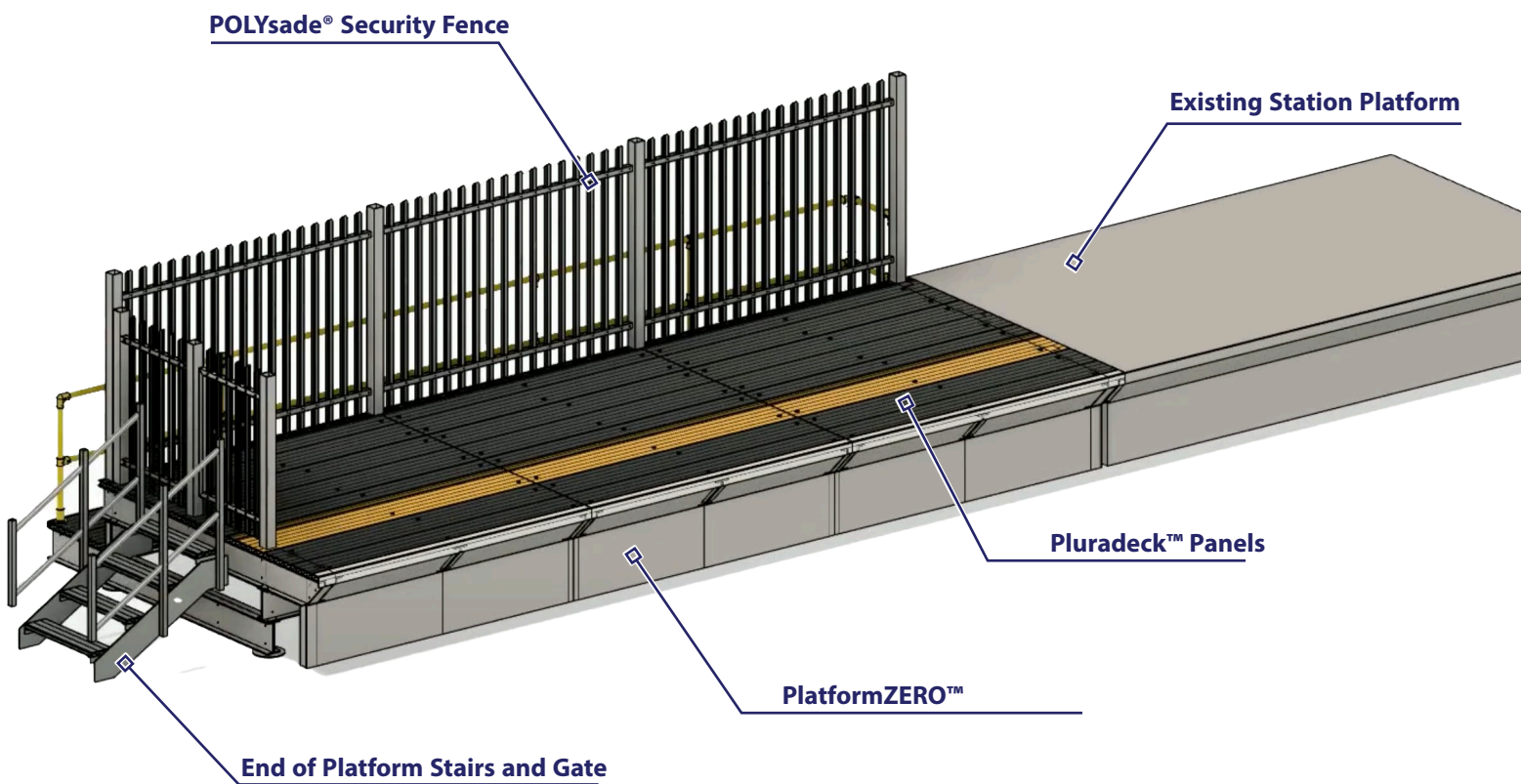
*PlatformZERO™ Standalone Platform

PLURA ZERO™, as well as an extension, is designed to work as a new, standalone platform.

POLYsade® Security Fence

Pluradeck™ Panels

PlatformZERO™

End of Platform Stairs and Gate

PlatformZERO™
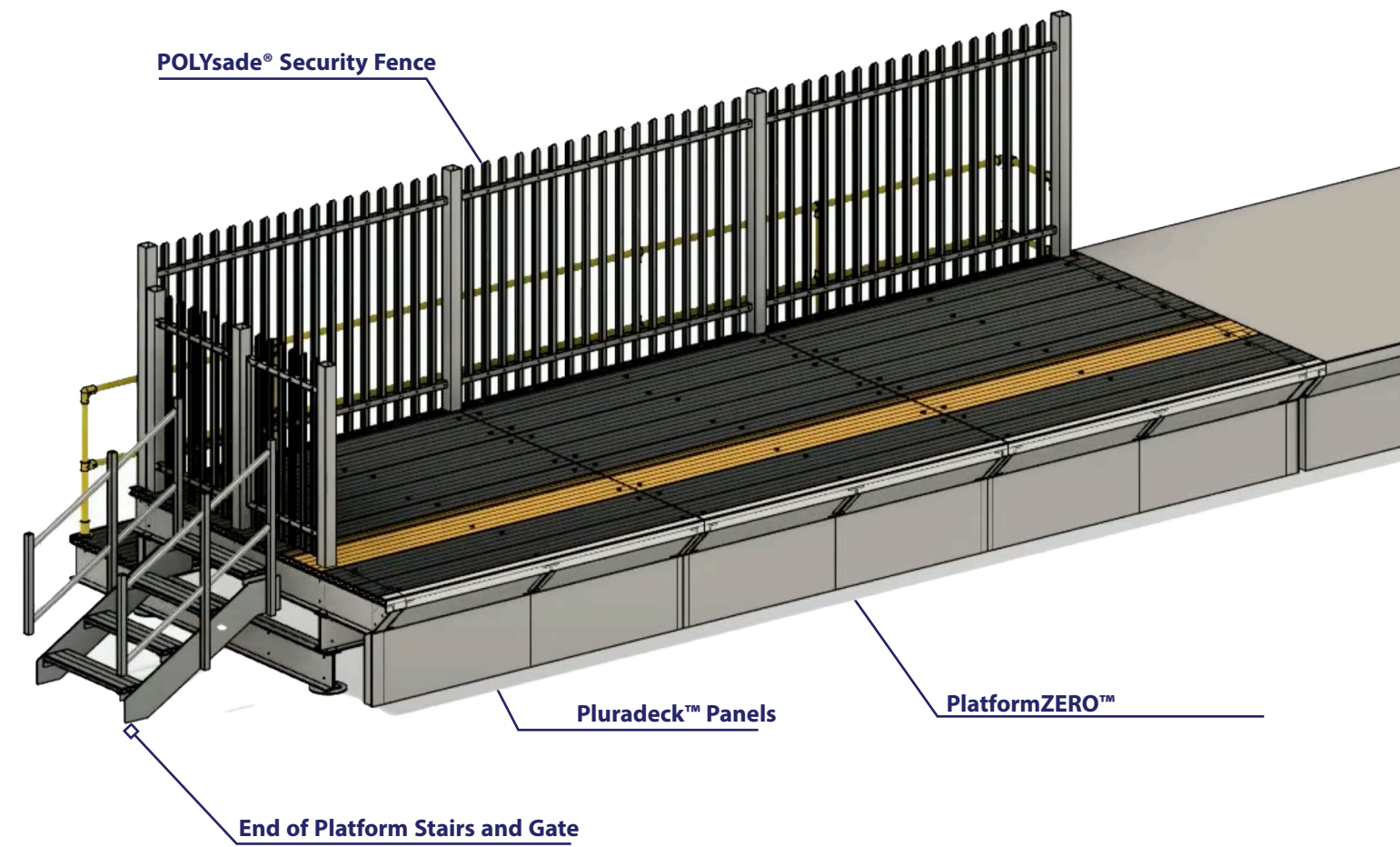
PLURAstep™ & PLURAdeck70™

PLURAstep™ & PLURAdeck70™ Structural, DDA compliant Antislip Stair Treads, Landings and Bridge Decks are load-bearing for design loads of 5kN/m² & 7.5kN/m² (depending upon application), with less than a 1/200 deflection.

This class leading stair tread & decking also has the same near diamond hard finish as per the PLURAdeck™ and will significantly outlast 'painted on finishes' as the aggregate is incapsulated in the moulded surface.
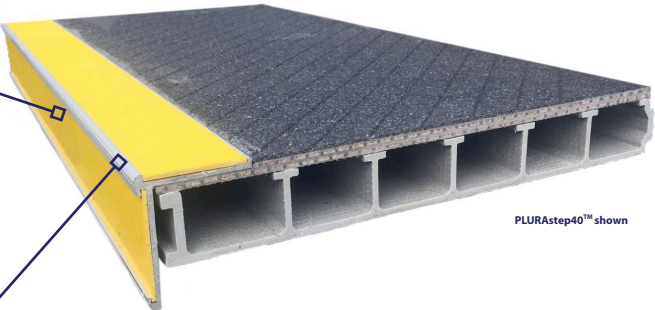
Smooth front face prevents scuff damage to the publics shoes and feet

PLURAstep40™ shown

Aluminium nose adds extra durability on the vunerable edge against luggage, footfall, and other knocks

PLURAdeck75™ shown

359mm Wide

244mm Wide

PLURAdeck70™ is produced in 4 widths of 'planks' from 244mm wide up to 575mm wide and in any length required to suit the span.

Each 'plank' is tongue and grooved by 15mm to slot to it's neighbour and produce a stong & solid connection.

High strength Exceedes BS 4592-0:2006+A1:2012 7.5kN/m2 UDL

Traditional 'Diamond' Pattern wicks away water to provide excellent grip even in the wet

Tested by Warrington Fire

FURTHER INFORMATION

For more infomation on our Stair treads and Bridge decks please see Page 21.

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PLURAdeck™ Performance notes

PLURAdeck™ complies fully with Network Rail Standards and requirements for station platforms, including:

RIS-7700-INS Rail Industry Standard for Station Infrastructure Issue Three: June 2018
RIS-7016-INS Rail Industry Standard for Interface between Station Platforms, Track, Trains and Buffer Stops: June 2018
GI/RT7016 Railway Group Standard for Interface between Station Platforms, Track and Trains
NR-L3-CIV-030 Platform Components & Pre-fabricated Construction Systems
NR-L3-CIV-162 Platform Extentions
GM/RT2173 Requirements for the Size of Vehicles and Position of Equipment *(Gauging)*
GI/RT7073 Requirements for the Position of Infrastructure and for defining and Maintaining Clearances *(Gauging)*

FIRE

PLURAdeck™ exceeds Network Rail requirements for Fire Resistance, including:

BS 476-6:1989+A1:2009 Fire tests on building materials and structures. Method of test for fire propagation for products to Class O
BS 476-7:1997 Fire tests on building materials and structures. Method of test to determine the classification of the surface spread of flame of products to Class 1.

BS 476-20:1987 Fire tests on building materials and structures. Method for determination of the fire resistance of elements of construction (general principles).
BS 476-21: Fire tests on building materials and structures. Methods for determination of the fire resistance of loadbearing elements of construction.

With 5kN/m^2 for PLURAdeck40™ and 7.5kN/m^2 for PLURAdeck75™
Exceeds Network Rail 20 minutes minimum requirement.

ANTI SLIP & SURFACE WEAR

PLURAdeck™ gritted surface exceeds Network Rail requirements for Slip Resistance with a PTV value of 76 in the Dry and 74 in the Wet.
The unique industry leading near diamond hard gritted finish exceeds the product design life of 60 years and has been extensively wear tested.

UV

PLURAdeck™ exceeds UV 8000 hour cycle testing

LOADING

PLURAdeck™ meets Network Rail loading requirements, including:

BS EN 1991-1-1:2002 Eurocode 1. Actions on structures. General actions. Densities, self-weight, imposed loads for buildings *(Loading)*
BS 4592-0:2006+A1:2012 Flooring, stair treads and handrails for industrial use - Part 0: Common design requirements and recommendations for installation *(Loading)*
to loading values of 5kN/m^2 for PLURAdeck40™ and 7.5Kn/m^2 for PLURAdeck75™

SUBSTRUCTURE

PLURAdeck™ substructures have been designed to comply with all Loading and Fire requirements and are available in either a 6 metre spanning steel truss or lightweight 5.6 metre or 2.8 metre spanning FRP truss system in addition to the patented Mountbridge™ PTI levelling system outlined on Page 13.
Each truss system is available with ground piles that significantly reduce groundworks requirements and platform construction times.

INTEGRATIONS

PLURAdeck™ is available with a cable management system for simple construction of cable routes through the platform without the need for excavation.

PLURAdeck™ has an integrated drainage channel for removal of surface water.

Please refer to our PLURAdeck™ Performance Specification ODVTST001 V.1 Oct19 for full details on all of the above

POLYsade®

POLYsade® has been developed to offer an exceptionally long life, good looks and safety from electrical touch potential; all in a minimum of a Class 1A security fence.

As it's equally at home providing protection to assets, a long life replacement to short lived traditional fencing or in areas where a source of electricity is present, there's no surprise that it is widely adopted for use in rail and power networks.

Employing Patented design, POLYsade® delivers a level of security far superior to any other GRP fence and even higher than many steel palisade type fences.
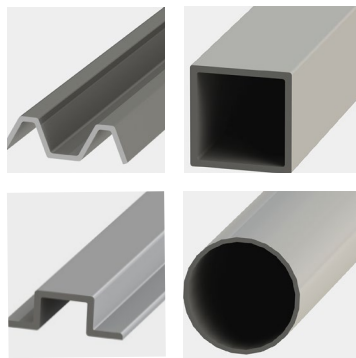
Wide Colour Range

Various Pale Tops

Large Size Range of widths

ALL

Large Size Range of heights
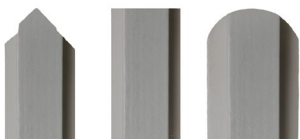
Lightweight Panels & Components

Pale Styles

High Strength Box Section Rails

QUICKfoot™ Surface Mounted

Passengers must not pass this point
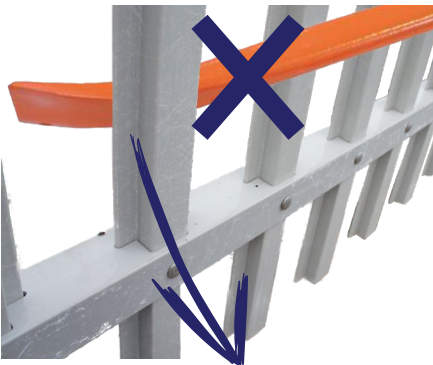
BOXposts™ Buried

Patented Pass Through Pales - Cannot be levered from rail

High Impact & Lateral loading Resistance

POLYsade® Explained

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POLYsade® Back of Platform Fence

As platforms can be classed as 'Places for Assembly' where the area may be susceptible to overcrowding, POLYsade® is designed to comply with BS6180:2011 & BS4592-0:2006+A1:2012 loadings up to 3.0kN/m. Coupled with non-conductivity, POLYsade® provides rail operators with the confidence that public safety goes hand in hand with years of zero maintenance.

Raised platforms pose installers the challenge of how to tie fencing into the structure and still comply with loading requirements.
PLURA have developed a number of solutions to this, depending upon whether the structure is a concrete pier, or trestle in either GRP, concrete, wood or steel.
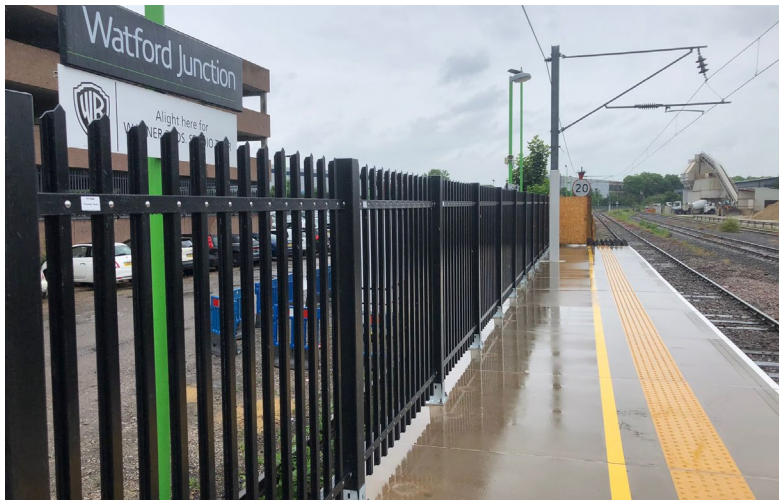
Where concrete surfaces can be directly fitted to; the QUICKfoot™ provides the perfect solution, whilst remaining compliant with loading requirements.

POLYsade® Picket Fence

Traditionally white painted wood has been used at many stations & particularly around level crossings throughout the UK. Keeping with traditional looks but removing the maintenance legacy costs; POLYsade® offers the ideal opportunity to install and forget; drastically reducing the annual costs associated with maintaining these fences.

Wooden Picket (Before) → POLYsade® (After)

POLYsade® End of Platform Fence

Usually adjoining anti-trespass matting, these gates and matching fence are made to measure for the platforms they are fitted to.

The QUICKfoot™ for posts means they can be fitted directly to the platform hard standing surface.

POLYsade® End of Platform Access

Constructed entirely from inhouse produced GRP profiles and gratings; our steps perfectly colour match to the POLYsade® fencing and gates.

POLYsade® Built in Lighting

Platform lighting can be incorporated into the fencing system with the use of LEDs. This is a lower energy usage option than traditional alternatives.

For other lighting options, please contact us and we can discuss possible options.

POLYsade® Built in Signage

BOXposts™ provide a very strong and ideal solution for platform signage. Reducing platform 'clutter' and leaving more of the platform free for passenger capacity.

FURTHER INFORMATION

For more infomation on our POLYsade® Fencing system please see Page 22.

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POLYguard™ & POLYwalk™

POLYguard™ Keyclamp style GRP handrailing and POLYwalk™ GRP grating together provide the means to create **SAFE WALKING ROUTES** around or close to stations.

Compliant with BS 4592-0:2006+A1:2012 General Duty requirements.

All profiles are produced by PLURA, utilising our Pultrusion process, including specialist Kick Plates that provide extra protection from live rails.

Warm to touch and Fire rated to BS 476 Part 7 Class 2, the system is lightweight and fast and simple to install.
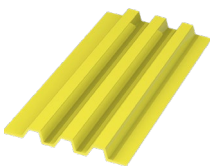

Threeway
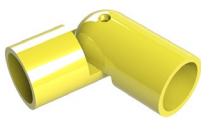
90 Degree Elbow

Angled Threeway

Angled Elbow

Side mount base

Adjustable Elbow   Fourway   Fourway Corner   Adjustable Vertical   Base foot   Kickplate Standard

POLYboard™

POLYboard™ is a high quality hot pressed GRP sheet that can be moulded from 5mm up to 40mm thick.

The raw material is through coloured white and easily CNC machined.

As such, it is ideal as a long life replacement for traditional **DAGGERBOARDS.**

The SMC GRP raw material conforms with Fire ratings BS 476 Part 7 Class 1 and so is suitable for being fixed to the building structure.
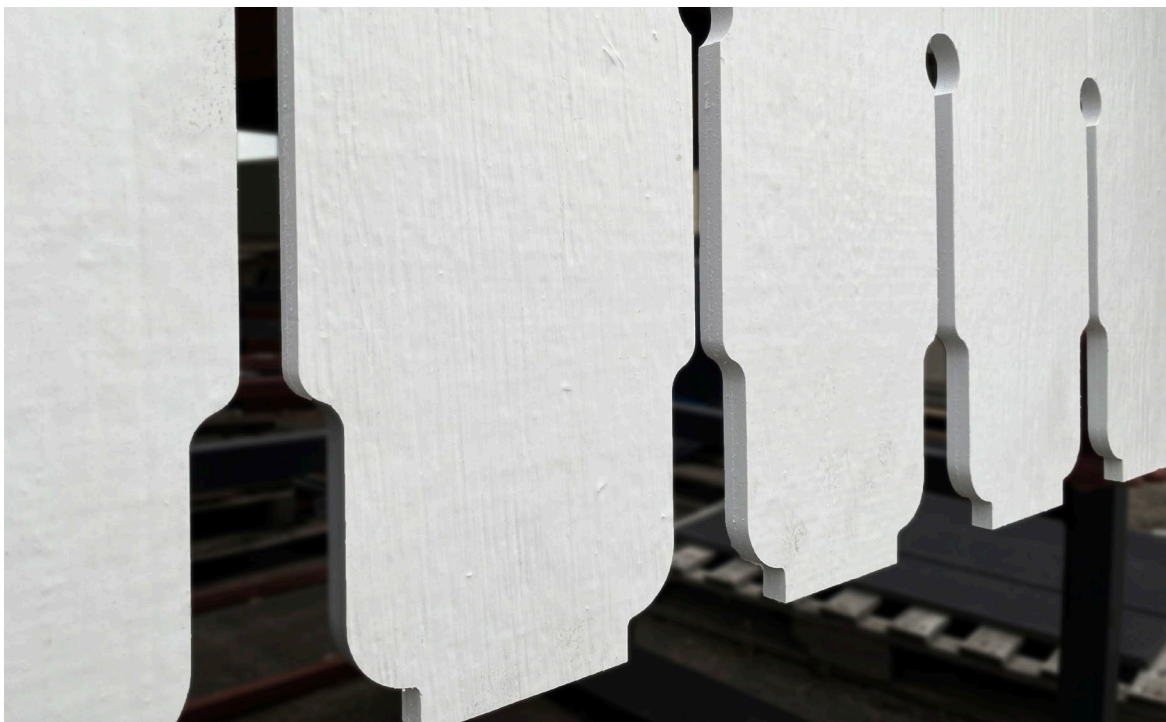
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PLURA have an extensive range of further information on the products detailed in this brochure:

Please request further information from sales@plurainnovations.com or visit our website:

https://www.plurainnovations.com/products/rail where we have a drop down for all Station Products

OUR FULL RANGE OF INFORMATION

POLYsade® Fencing, Gates, Signage Posts, Lighting & End of Platform Access
FPDAT001 Data Sheet
FPSPC001 Performance Specification
FPINS001 Product Installation
FPCAS001 Case Studies
FPLIT001 Product Brochure

PLURAdeck™ Platform Decking system
OXDAT001 Data Sheet
OXSPC001 Performance Specification
OXINS001 Product Installation
OXLIT001 Product Brochure

PLURAstep™ Stair treads
OSDAT001 Data Sheet
OSINS001 Product Installation
OSLIT001 Product Brochure

POLYguard™ Keyclamp style handrails
PHDAT001 Data Sheet
PHINS001 Product Installation
PHLIT001 Product Brochure

POLYwalk™ FRP Gratings and supports
PGDAT001 Data Sheet
PGLIT001 Product Brochure

POLYboard™ FRP Daggerboards
PSDAT001 Data Sheet

REDUCE YOUR CARBON FOOTPRINT
One big difference between buying from UK manufacturers and choosing products that are made overseas is the carbon (and monetry) cost in shipping.

Shipping goods into this country from overseas (especially the Far East) creates lots of carbon emissions. To bring the products that we've ordered from other countries to our doors involves the use of ships that burn fossil fuels. However, choosing products that have been manufactured in this country means a much smaller amount of fossil fuels are used in transporting the goods we've bought.

IT'S COMMERCIALLY VIABLE
The thought that "it's cheaper from China" isn't nesessarily the case. With a Lean and Automated production capability here in the UK; we are more than able to compete with imported products. For products made from polymers and composites; the raw material cost accounts for 60% of the product cost and the purchase price of these is similar whether they are from China, India, Europe, The USA or the UK. Add to this; the fluctuation in currency and the cost of shipping and our finished products are commercially competitive.

BOOST THE ECONOMY
According to The Manufacturer; British manufacturing contributes £6.7 Trillion to the global economy. Making things here in the UK helps to make our economy more secure, as it means that we're contributing to the global economy with our exports, while also relying less on imports.

If we can create what we need here in the UK, then we don't have to rely so heavily on importing from other countries and our economy will be more sustainable and better able to grow.

BE ASSURED OF THE QUALITY
Whilst we're not saying imported goods are of poor quality; far from it! We're saying that you can more easily check the quality process if your supply chain is based entirely here in the UK. Reduce your risk. Come and visit our production site and see for yourself.

HELP CREATE JOBS IN THE UK
Manufacturing is a fantastic way for young people to start out in the workplace with an apprenticeship. They can earn as they learn and develop skills which will allow them to work their way up the ladder, or even set up a business of their own one day, and we should know, half of the Directors of Plura started on the Youth Training Scheme (YTS) back in the 1980's! From those humble beginings we've gone on to employ hundreds of people here in the UK.

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https://www.plurainnovations.com/products/pluradeck

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