

Rail

Rail Depots and Trackside Solutions

d²



Dura Composites' GRP solutions at Ealing Common Depot

Discover Dura Composites d² range, our next generation composites which deliver the greatest level of performance improvement for rail applications such as ballast retention, trackside walkways, trench covers, driver hop ups, access structures and safety handrailing.

Unlocking the Power of Composites™
»» for the Rail Industry

dura™
composites

Contents

Internal Depot Solutions	3-8
Cable Trough Covers	6
Driver Hop Ups	7
External Trackside Solutions	9-20
Trackside Walkways	11-12
Overline Pedestrian Bridges	13-15
Fencing & Gates	16
Elevated Platforms	17-18
Embankment Staircases	19
Bespoke Fabrications	20
d ² Dura Grating	21-22
Dura Slab	23-24
Dura Safety Handrailing	25-26
Dura Ballast Retention	27-30
Dura Profile	31-32
Working With Dura	33-38

About Us

Discover the d² product range from Dura Composites - the next generation of performance-improving composites. Available exclusively from Dura Composites, d² products feature unique designs, new material technology or manufacturing methods AND deliver class-leading performance.

We help companies of all sizes unlock the power of composites, and our client base includes businesses in the Rail, Industrial, Leisure, Marine, Construction, Transport and Landscaping sectors.

In 2017 and in 2020, Dura Composites was awarded the Queen's Award

for Enterprise in recognition of our achievements at the forefront of composite material technology. Dura Composites' products are also available through a well-established global distribution network. Your local distributor can be found on our website.



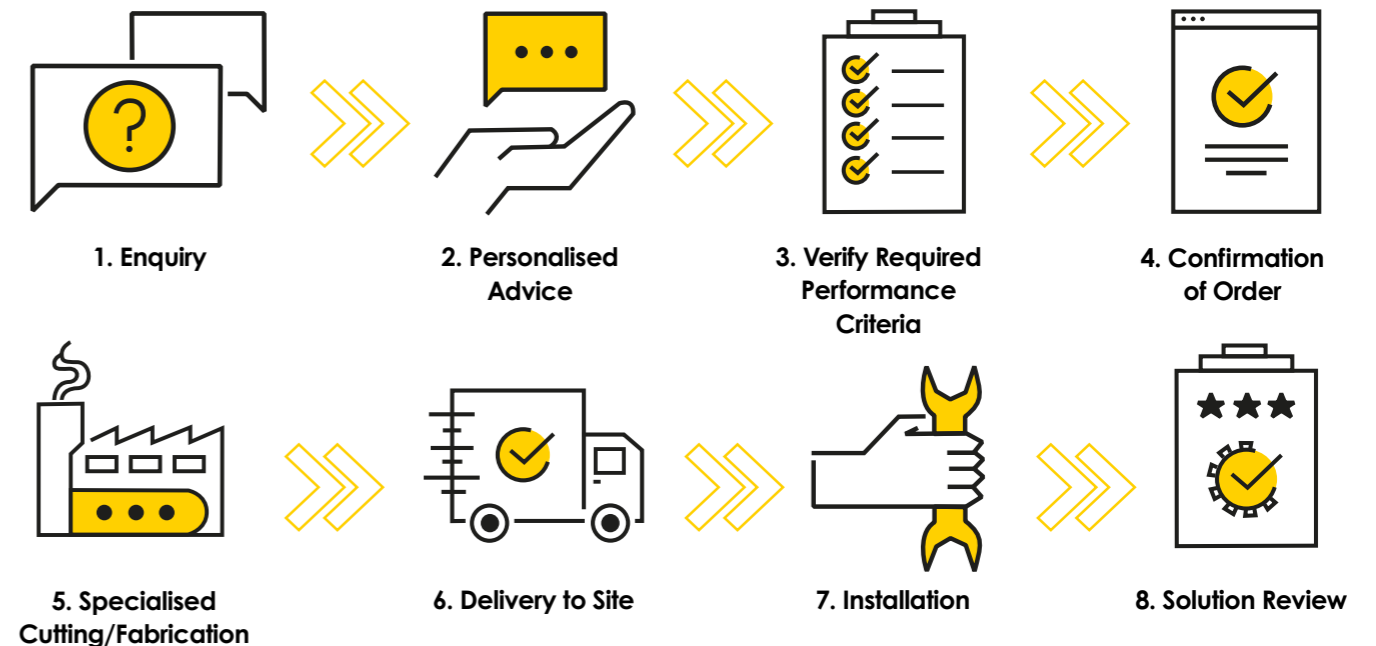
Let Dura Composites Unlock the Power of Composites for Your Next Project

Dura Composites is a designer, manufacturer and supplier of composite products for industry.

Here are a few great reasons to work with us:

- 1 Unique products backed up by demonstrably better specification**
 - We can help support your design services across all phases of the project lifecycle by providing detailed technical specifications for our award-winning product range.
 - Our live load testing data is available within our searchable Online Product Selector database to help you make decisions based on real data to ensure maximum safety for your project.
- 2 We only offer the right solution**
 - We believe that decisions on which products to use should be based on facts, not guesses or theories.
 - Whatever your scenario, you can be confident that we'll help ensure your project will meet the load performance and specification needed, otherwise we won't supply it!
- 3 25 Years of Multi-Industry Expertise**
 - We've had a reputation as leaders in innovation for a quarter of a century and take a collaborative approach to working with our Public and Private sector clients. We were awarded the prestigious Queen's Award for Enterprise in 2017 and 2020 in recognition of our success in growing and championing the use of composite materials across the globe.
 - Our added value services include in-house CAD and Structural Engineering teams who can be utilised both for stand-alone design and as part of larger integrated design scheme.
 - Our specialist cutting and fabrication teams offer a full range of services to ensure you can install with confidence.

Your process with us at Dura:





Rail Depots

Internal Depot Solutions

We have a wealth of experience in the design and supply of GRP product solutions for internal depot buildings and railway maintenance facilities.

An essential ingredient in the successful running of a railway is a well-maintained system. Dura Composites is well-placed to assist with a range of infrastructure products that help cut the delivery time and cost of projects .

Dura Composites d² range of products are our next generation composites which deliver the greatest level of performance improvement for each application and can't be found anywhere else. Our unique Glass Reinforced Polymer (GRP) infrastructure solutions are suited to both indoor and outdoor areas such as train stabling yards,

train workshop buildings, inspection lines, wash bays, test tracks, storage facilities and depot control centres.

Thanks to our unique durable, non-conductive and low maintenance material technology, as well as our in-house CAD and structural engineering capability, we can help ensure that hardstanding areas, structures and walkways are designed for the necessary loads. The anti-slip surfaces and corrosion resistant properties of our products also ensure that assets be accessed safely by train drivers and maintenance personnel to prevent downtime and achieve long term cost savings.

This section includes:

Depot Train Maintenance Platforms
Pages 5-6

Driver Access Platforms
Page 7

Train Maintenance Platforms

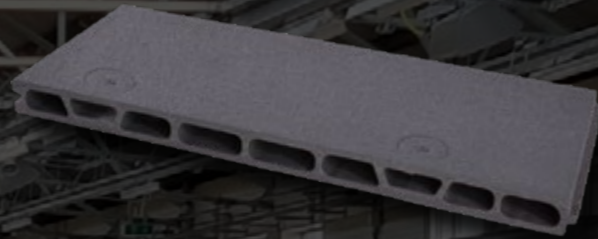
GRP Dura Platform cuts installation time by up to 65%

Rapidly deployed to ensure minimal disruption to depot environments, our Queens Award winning GRP Dura Platform can be combined with the strength of a steel foundation to deliver a lasting solution that's safe for maintenance personnel.

Our efficient modular design can eliminate up to 60% of the steel used in other designs, making it more cost effective and faster to install.

Dura Platform 40 achieves a clear span of 1500mm with a 5kN UDL at L/300 deflection and weighs just 35.55kg per m², making it suitable in many cases for manual handling.

Panels interlock to minimise independent panel deflection, and our discrete CAM fixing system provide a smooth and trip-free aesthetic.



Key Benefits



Easily Lifted for Access



Long Design Life



Anti-Slip Surface



Non-Conductive



Fire Resistant



Corrosion Resistant



Impact Resistant



Minimal Maintenance

Main photo: Dura Platform 40 at Neasden Depot

Cable Trough Covers

Lightweight Structural Covers for Rail Applications

Dura Composites' GRP trough and cable pit covers help ensure easy access for maintenance & inspection. Low maintenance, durable and simple to install, our composite Glass Reinforced Polymer (GRP) covers are the ideal alternative to heavy & cumbersome steel or concrete covers.

With an innovative design that can include either manual lifting eyes or mechanical lifting arms, the trench cover lids can meet the needs for straight sections, curved sections, right angles and Ts and have an excellent strength to weight ratio. We are the only company who have the ability to test each cover in accordance with BS EN 124 for project specific requirements, using our in-house test rig.

Moulded Dura Grating Covers

Dura Composites Moulded GRP Trench Covers are made from our Dura Grating and are typically used for areas of pedestrian traffic and are available in a range of load ratings to suit every application and budget.

Lightweight but high-strength, they dramatically reduce the cost of installation, maintenance and transport versus concrete covers. Many of our trench and trough access covers are available from stock for immediate despatch.



Pultruded Dura Grating Covers

Dura Composites' one piece heavy duty trench covers are pultruded in one mass to produce a consistent quality and incredible strength to weight ratio. They are ideally suited to vehicular loading requirements for infrastructure installations including power, telecoms and utility projects.

The covers are easy to lift, transport and install, unlike bulky concrete trough and access covers.



Pultruded Dura Slab Pit Covers

Dura Slab has been specifically engineered for use as high strength covers where an incredible strength to weight ratio is important. The covers are designed for maximum versatility and work with both pre-cast flat top concrete troughs as well as with precast concrete troughs with a factory formed recess which enable fitting flush with the floor surface.

Compliant with BS EN 124, Dura Slab panels are capable of spans ranging from 4000mm in pedestrian traffic areas to 600mm in Class D loads of up to 11 tonnes.*

*Dura Platform 100 product

Pit Cover, Dura Slab 50, Ealing Common Depot, Transport for London



Driver Access Platforms

We offer a range of efficiently-designed GRP Driver Access Platforms (also known as DAPs or Driver Hop-Ups) which can be employed by guards, drivers and maintenance or cleaning crews for safe access to and from trains.

Non-conductive, lightweight and requiring virtually no maintenance, they are ideally suited to locations under OHLE wires where currents can reach 25,000 kV.

All components are individually tested to ensure performance, and can be preassembled in our state-of-the-art UK Fabrication Centre, where Dura Composites is certified to ISO-9001 – the International standard for Quality Management.



d² Dura Driver Access Platform, Broomloan Depot



Maidenhead Sidings, Great Western Main Line

Speaking about the project, Jonathan Howard, GRP Business Development Manager at Dura Composites commented;

"It's great to see a rail depot benefiting from so many of Dura Composites' GRP product solutions in one place. Our trench and pit covers, structural stair treads, handrailing, walkway grating and profile sections have helped to facilitate the in depth servicing and maintenance of the train fleet. All products are high-strength, non-conductive, lightweight, anti-slip and require virtually no maintenance, which means that they offer excellent lifecycle benefits for our end client TFL."



Case Study

Ealing Common Depot

Product	Centre & Outer Pit Covers, Structural Walkways
Installation Type	Refurbishment
Clients	McNealy Brown and TFL



Ealing Common Depot is a London Underground railway depot on the District line, located between Acton Town and Ealing Common stations in west London. It is the oldest of the main depots on the London Underground, having been built in 1905, when the District Railway was upgraded for electric traction.

McNealy Brown Limited is an approved supplier for many Main Contractors and Infrastructure Companies operating across the Construction and Rail Sectors and was appointed for the modernisation of the existing Ealing

Common Depot. McNealy Brown chose Dura Composites for the supply of a wide range of innovative low-maintenance and safe GRP solutions which could help meet not only the maintenance and cleaning requirements of new trains, but also the operational requirement of increasingly frequent timetables.

Dura Composites' innovative GRP product solutions at Ealing Common Depot included trench covers, structural stair treads, handrailing, walkway grating and profile sections.



Key Benefits

The characteristics of GRP makes it ideal for transforming existing depots into state-of-the-art facilities, with minimal disruption to the depot's operational teams.



Save Time



Saves Money



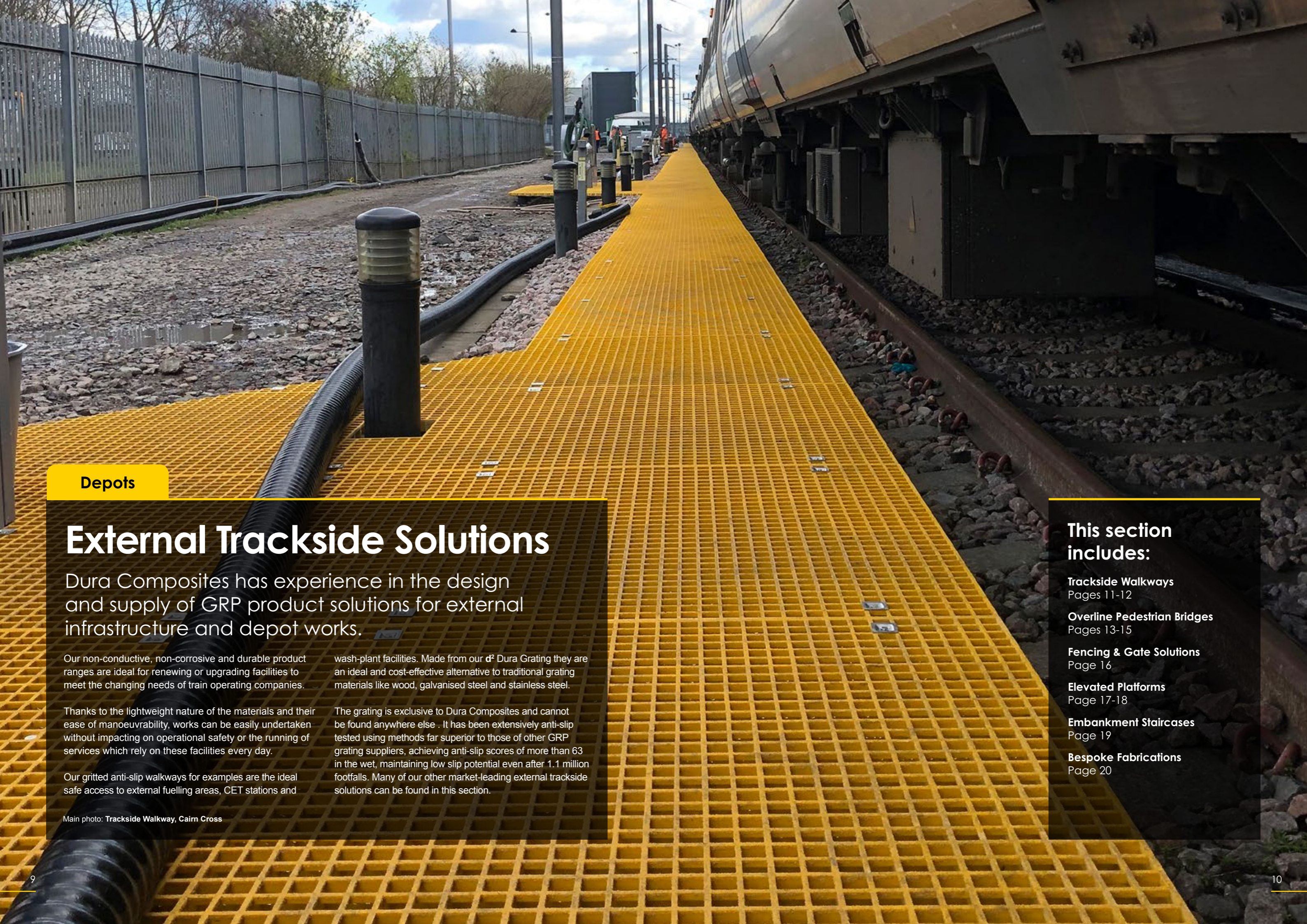
Minimal Operational Disruption



Concealed Fixings



Non Sparking



Depots

External Trackside Solutions

Dura Composites has experience in the design and supply of GRP product solutions for external infrastructure and depot works.

Our non-conductive, non-corrosive and durable product ranges are ideal for renewing or upgrading facilities to meet the changing needs of train operating companies.

Thanks to the lightweight nature of the materials and their ease of manoeuvrability, works can be easily undertaken without impacting on operational safety or the running of services which rely on these facilities every day.

Our gridded anti-slip walkways for examples are the ideal safe access to external fuelling areas, CET stations and

wash-plant facilities. Made from our d² Dura Grating they are an ideal and cost-effective alternative to traditional grating materials like wood, galvanised steel and stainless steel.

The grating is exclusive to Dura Composites and cannot be found anywhere else. It has been extensively anti-slip tested using methods far superior to those of other GRP grating suppliers, achieving anti-slip scores of more than 63 in the wet, maintaining low slip potential even after 1.1 million footfalls. Many of our other market-leading external trackside solutions can be found in this section.

Main photo: Trackside Walkway, Cairn Cross

This section includes:

Trackside Walkways
Pages 11-12

Overline Pedestrian Bridges
Pages 13-15

Fencing & Gate Solutions
Page 16

Elevated Platforms
Page 17-18

Embankment Staircases
Page 19

Bespoke Fabrications
Page 20

Trackside Walkways

Dura Composites' Trackside walkways are durable, lightweight, chemical and corrosion resistant.

Suitable for many applications in the rail industry our GRP Driver and Trackside Walkways offer a performance-improving alternative to traditional materials such as timber, steel and concrete.

Dura Composites is a market leader in composite open mesh grating walkway systems, having supplied to industry for 25 years.

Our d² Dura Grating is a new patent pending (**Application No: GB 19 04928.7**) GRP grating series which achieves an industry-leading Class B fire rating in accordance with BS EN 13501-1 and has been championed within the rail industry for its performance-to-weight ratio and improved

visual inspection capability versus previous generation GRP grating.

Using d² Dura Grating, trackside walkways and walking routes can be easily configured to meet the requirements of accessing the rail site for train-related purposes or for maintenance of infrastructure.

We also offer heavy duty walkways made from our unique pultruded Dura Slab which is the ideal alternative for heavy and cumbersome concrete. It can be fabricated on site using standard cutting tools, with no hot works permits required or cut to size at our East of England Operations Centre to save valuable time on your rail project.

Key Benefits

The use of lightweight trackside walkway materials which are non-sparking, non-conductive and easy to manoeuvre into place aids safety and productivity.



Lightweight



Non-sparking



Non-Conductive



Anti-Slip



Available From Stock

Main photo: d² Dura Grating Trackside Walkway, Bell Creek Bridge

Dura Grating

GRP Grating is lightweight and chemical resistant, making it ideal for trackside walkways including pump out and refuelling locations.

Our latest d² Dura Grating is a patent pending GRP grating series with a Class B fire rating that is exceptionally slip-resistant and offers excellent traction in wet and icy conditions.

Dura Composites' unique high specification composition has been rigorously tested (in accordance with BS 7976-2:2002+A1:2013) and achieves ultra-low slip potential in both wet and dry conditions.

Lightweight but strong, it can be supplied with a range of stainless steel clips, clamps and various hold-down fixings to suit all situations. Use of hi-tech resin systems and application techniques means d² Dura Grating's colour is consistent and long lasting. More details of the full range can be found on pages 21-22.



Dura Slab



Uniquely designed, Dura Slab exhibits an incredible strength to weight ratio producing a heavy duty walkway and cable trough cover solution that is rigid, strong, lightweight, non-corrosive, durable and maintenance free with an anti-slip surface.

Dura Slab is ideal for new constructions but is also well suited for refurbishment applications to replace old, heavy and cumbersome trackside walkway materials. More details of the full range can be found on pages 23-24.



New or refurbishment structural flooring & cable trough covers.

Overline Pedestrian Bridges

With increasing amounts of traffic on the tracks, overline pedestrian bridges can improve safety for those needing to cross the railway line.

Dura Composites' GRP Dura Slab Structural Stair Treads and Landings can be used as part of new build bridge construction and as a replacement for rotting timbers in footbridge refurbishments.

lines or electrified areas, due to their non-conductive properties.

Extremely low-maintenance, the products will not rot, corrode or even lose colour throughout their design life, and are ideally suited to situations where the footbridge or staircase is located in close proximity to overhead power

The treads and landings can be easily fixed into position thanks to their single unit construction and feature a built-in riser for rapid installation and an in-built fall to assist with drainage and reduce pooling on stair surfaces.

Key Benefits

Overlay solutions with gritted plate covers on to timber are not a safe and long lasting solution, accelerating the degradation of the timber substructure which is dangerous for both the public and maintenance staff.



Saving Time



Strength



Improved Lifecycle



Low Maintenance



Fire Resistant

Structural Landings

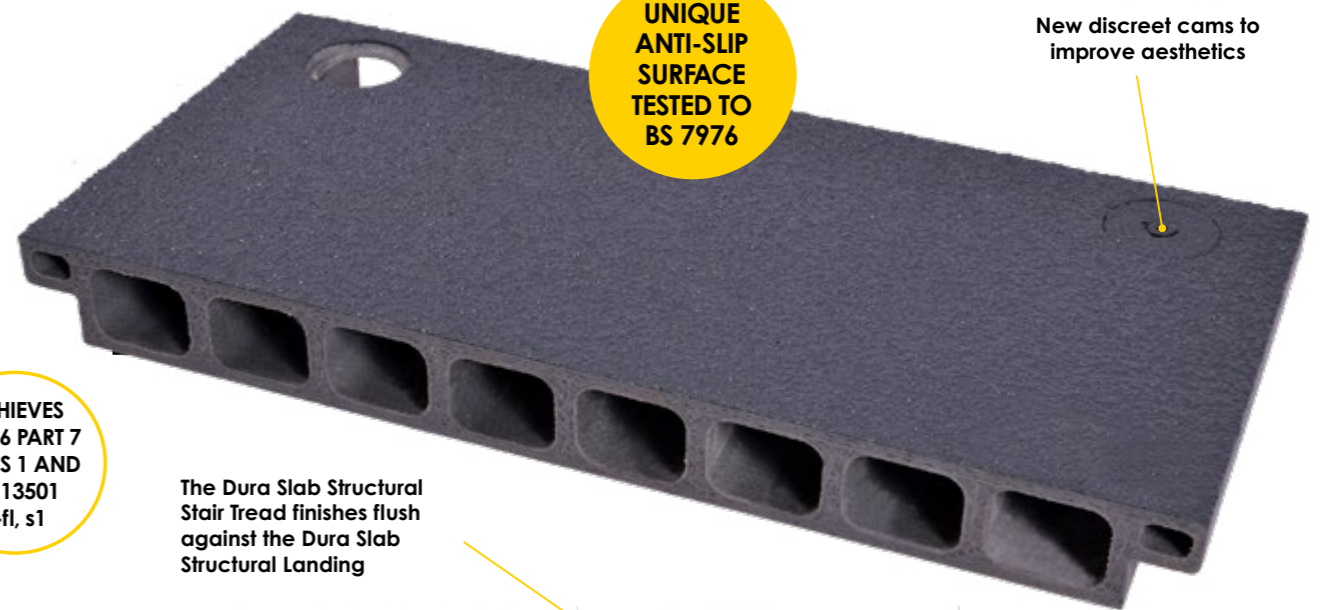
Pedestrian Footbridges

Working in conjunction with the NEW Dura Slab Structural Treads, Dura Composites offer landing panels which can span up to 2.4m clear span (50mm thick option), achieving 5kN/m² at L/200 deflection or up to 3.2m (using the 100mm option).



UNIQUE ANTI-SLIP SURFACE TESTED TO BS 7976

New discreet cams to improve aesthetics



ACHIEVES BS 476 PART 7 CLASS 1 AND EN 13501 B-fl, s1

The Dura Slab Structural Stair Tread finishes flush against the Dura Slab Structural Landing



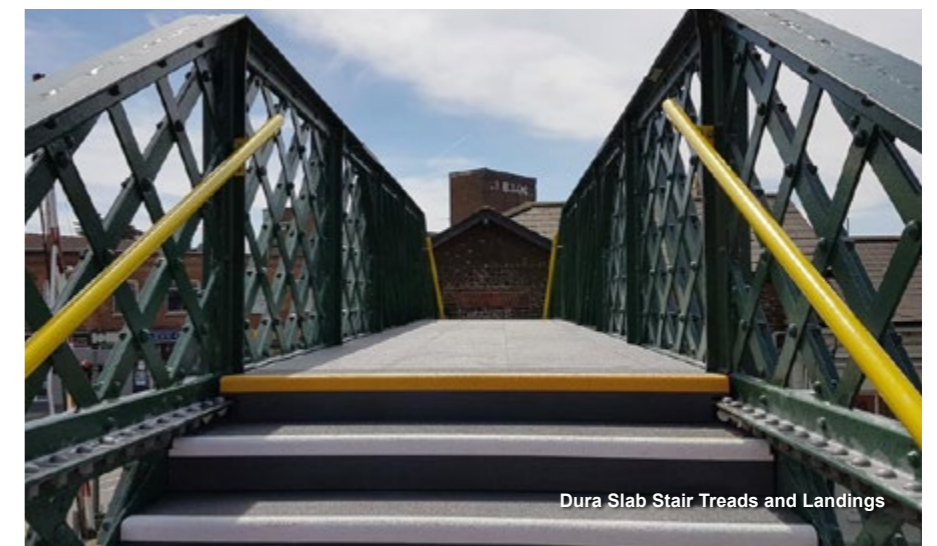
Dura Slab Structural Stair Tread

Dura Slab Structural Landing

Both reduce or eliminate the need for additional supports to break spans down, providing huge advantages over other composite solutions on the market.

Dura Slab Structural Landings are designed as a modular system, allowing the contractor huge flexibility both at the design stage and on site.

Dura Composites' unique high specification composition has been rigorously tested (in accordance with BS 7976-2:2002+A1:2013) and achieves ultra-low slip potential in both wet and dry conditions. For full details please consult our Technical Manual.



Dura Slab Stair Treads and Landings

Structural Stair Treads

Dura Slab Structural Stair Treads and Landings are designed as a modular system, allowing the contractor huge flexibility both at the design stage and on site - speeding up install times and reducing costs and possessions, thereby limiting disruption.

Where previous composite treads on the market have been limited in span capabilities, Dura Composites has the ability to span up to 2.1m clear open span, achieving the required 5kN/m2 at L/200 deflection and meaning that additional supports can be avoided in most scenarios.



The Dura Slab Structural Stair Tread design can be specified with built-in risers, speeding up the install process whilst increasing safety, particularly in scenarios where bridge treads are located near overhead lines or are replacing open risers. Also included is a very slight fall to assist in the prevention

of water pooling which can lead to problems with ice in the winter months. No heavy lifting equipment is needed as all panels can be easily manhandled even in full stock lengths.



UNIQUE ANTI-SLIP SURFACE TESTED TO BS 7976

ACHIEVES BS 476 PART 7 CLASS 1 AND EN 13501 B-fl, s1

Tri-Tone Grit Surface

Stair Tread Nosing Strips

Dura Tread Nosing Strips can be applied to a variety of stair tread materials such as concrete, wood, chequer plate or GRP grating to help mitigate the risk of slipping, tripping and falling. Quick and easy to install, Dura Tread Nosing Strips have a tough anti-slip gritted surface and are available in both Yellow and White to maximise visibility of the stair edge. Each piece is 1830mm long as standard and the profile dimension is 55mm x 55mm with a thickness of 4mm.

Choose Dura Tread Nosings for a quick, cost effective solution to improving safety in slippery or hazardous areas, and for areas used by the public.



Fencing and Gate Solutions

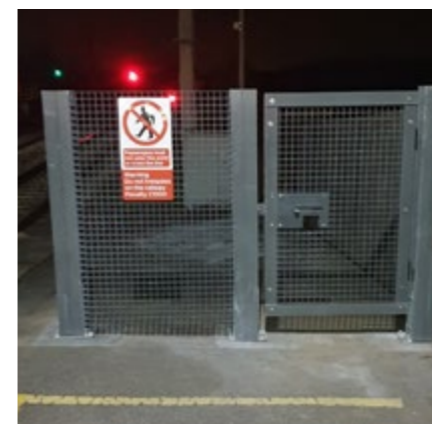
Dura Composites' modular GRP gates and fencing have been developed as an alternative to steel due to their non-conductive properties, making them extremely suitable for electrified rail environments to enable access to specific authorised personnel, whilst preventing others from accessing high-risk areas.

Strong but lightweight, they can be used for a wide range of trackside and depot applications such as removable fencing, permanent fencing and sliding gates.

With a visually appealing mesh design, the fencing can be pre-assembled off site for rapid installation or supplied in component form.



NON-CONDUCTIVE AND LIGHTWEIGHT



Elevated Platforms

We can design and fabricate a wide range of elevated platforms which withstand the harsh environmental conditions of the trackside and are non-conductive and non-sparking.

Maintenance Wash Bays

Dura Composites supporting framework for maintenance wash bays utilises 203mm GRP channel, versus the commonly used weaker 150mm channel. Uniquely in the market, all our d² GRP profile components meet the E23 grade performance requirement of the BS EN 13706 standard (which covers the specification of GRP pultruded profiles) and provides greater strength and consistent quality.



Wash Bay Walkway, Docklands Light Railway, London

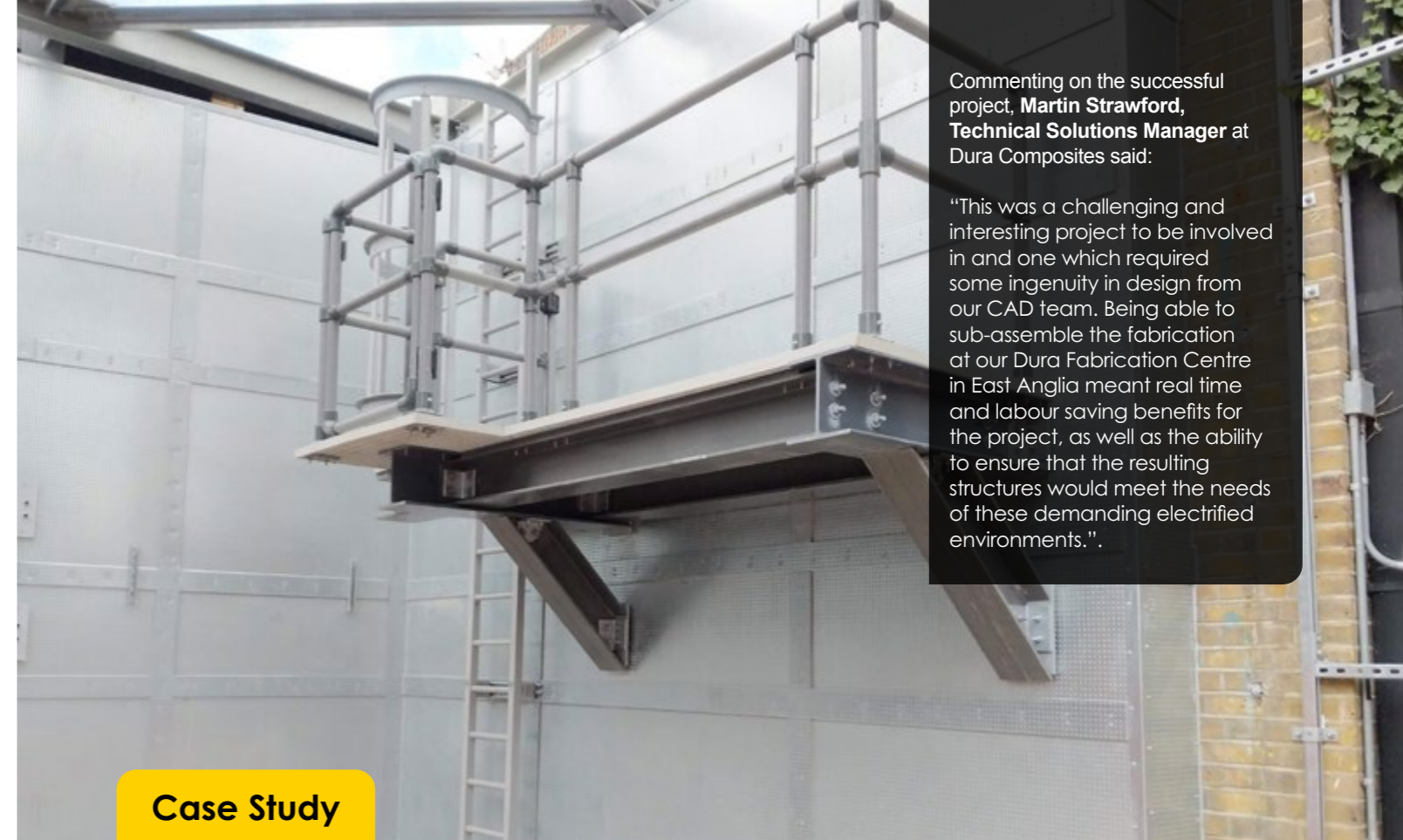
The flooring components have been anti-slip tested for the equivalent of over 1m footfalls, achieving anti-slip scores of more than 63 in the wet environments found in a wash down, maintaining low-slip potential even after an incredible 1.1 million footfalls.

Refuge Platforms

Our GRP refuge platforms can be employed by maintenance personnel for safe access to signalling equipment and other trackside areas. Thanks to the material's non-conductive properties, it is a safer alternative in OHLE or third rail environments than conventional materials and poses no risk of electrical shock, removing the requirement for earth-bonding.

Modular Access & Inspection Platforms

Dura Composites has in-house design and fabrication capabilities which deliver high-performance GRP depot platforms for virtually any requirement in the depot, including nose end and carriage access. Our popular modular designs allow for re-use over and over again in multiple locations for maximum efficiency and the technological advances of our d² technology ensures the safest, most user-friendly and aesthetically pleasing systems on the market.



Commenting on the successful project, **Martin Strawford, Technical Solutions Manager** at Dura Composites said:

"This was a challenging and interesting project to be involved in and one which required some ingenuity in design from our CAD team. Being able to sub-assemble the fabrication at our Dura Fabrication Centre in East Anglia meant real time and labour saving benefits for the project, as well as the ability to ensure that the resulting structures would meet the needs of these demanding electrified environments."

Case Study

Stockwell Substation, London

Product	Pre-Fabricated Access Platform Solution
Application	Access Platforms
Clients	Northern Line, London Underground

Power upgrade works on the Northern Line began in 2018 to address poor asset condition, provide additional service resilience and enhance network power capacity for service increases on the sub-surface lines of the London Underground. The programme has included replacement of life-expired coupling transformers at Stockwell substation and upgrades to the high voltage network between Stockwell and Clapham Common substations, in a project led by contractor Balfour Beatty.

As a leading designer, manufacturer and supplier of Glass Reinforced Polymer structural products for industry, Dura Composites was chosen to supply two non-conductive access platforms to enable safe access to the transformer areas for qualified maintenance personnel.

Dura Composites have extensive experience in the provision of GRP solutions for the rail and energy sectors, including Machine Access, Gantries, Steppers and Ladders. Our latest d² range of products deploys unique patented designs and innovative

technology to deliver the safest, most cost-effective and durable solutions on the market.

In this case, Dura Composites GRP was chosen for its dielectric properties (due to the proximity to electrical equipment) as well as for its ease of workability on site. Our extensive investment in the latest manufacturing technologies mean that all the Dura Profile sections used exceed the E23 grade, delivering superior performance. The GRP Dura Grating floor surface also provides exceptional anti-slip properties and drainage in all weathers.

Key Benefits

Weighing up to 50% less than the equivalent steel, Dura GRP products offered a high performance structural solution which was, easy to handle, and economic to transport & install.



Saves Time



Saves Money



Minimal Passenger Disruption



Lightweight



Rapid Installation

Embankment Staircases

Dura Composites Embankment Staircases are a ground-breaking pultruded GRP rapid install stair system, ideal for use on embankments to provide safe maintenance access to works staff on mounds and embankments. They are designed as a modular system, allowing the contractor huge flexibility both at the design stage and also on-site.

The gridded GRP walking surfaces cater for all types of footwear, offering excellent anti-slip qualities and feature a high visibility stripe on each stair nosing for maximum pedestrian safety. Lightweight components allow for easy delivery to remote locations and rapid installation at a wide variety of slope angles.



**HIGH
STRENGTH
& ANTI-SLIP
SURFACE**



Bespoke Fabrications

Dura Composites can design fabricated structures to meet customers' unique requirements.

Available exclusively from Dura Composites, the **d²** products from which our fabrications are constructed feature unique designs, new material technology or manufacturing methods and deliver class-leading performance for their applications.

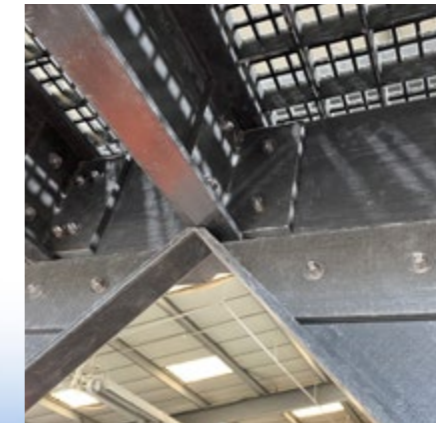
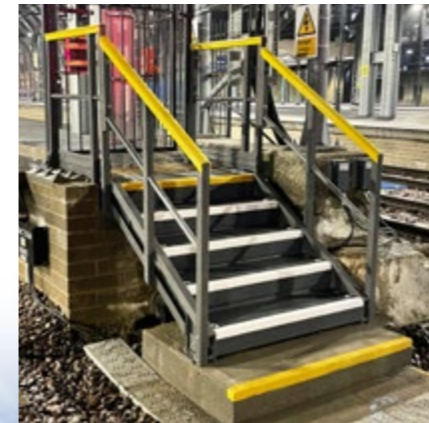
We have a team of CAD experts and an in-house GRP structural design resource to ensure your planned

fabrication meets all the safety and loading requirements for your specific application.

All fabricated structures can be supplied with detailed dimensions and weights, including overall footprint size to ensure it will fit within your planned design. The supporting framework of our bespoke fabrications utilises 203mm

GRP channel, versus weaker 150mm channel commonly used by competitors.

Uniquely in the market, all our **d²** Dura Profile components meet the E23 grade performance requirement of the BS EN 13706 standard (which covers the specification of GRP pultruded profiles) and provides greater strength and consistent quality.



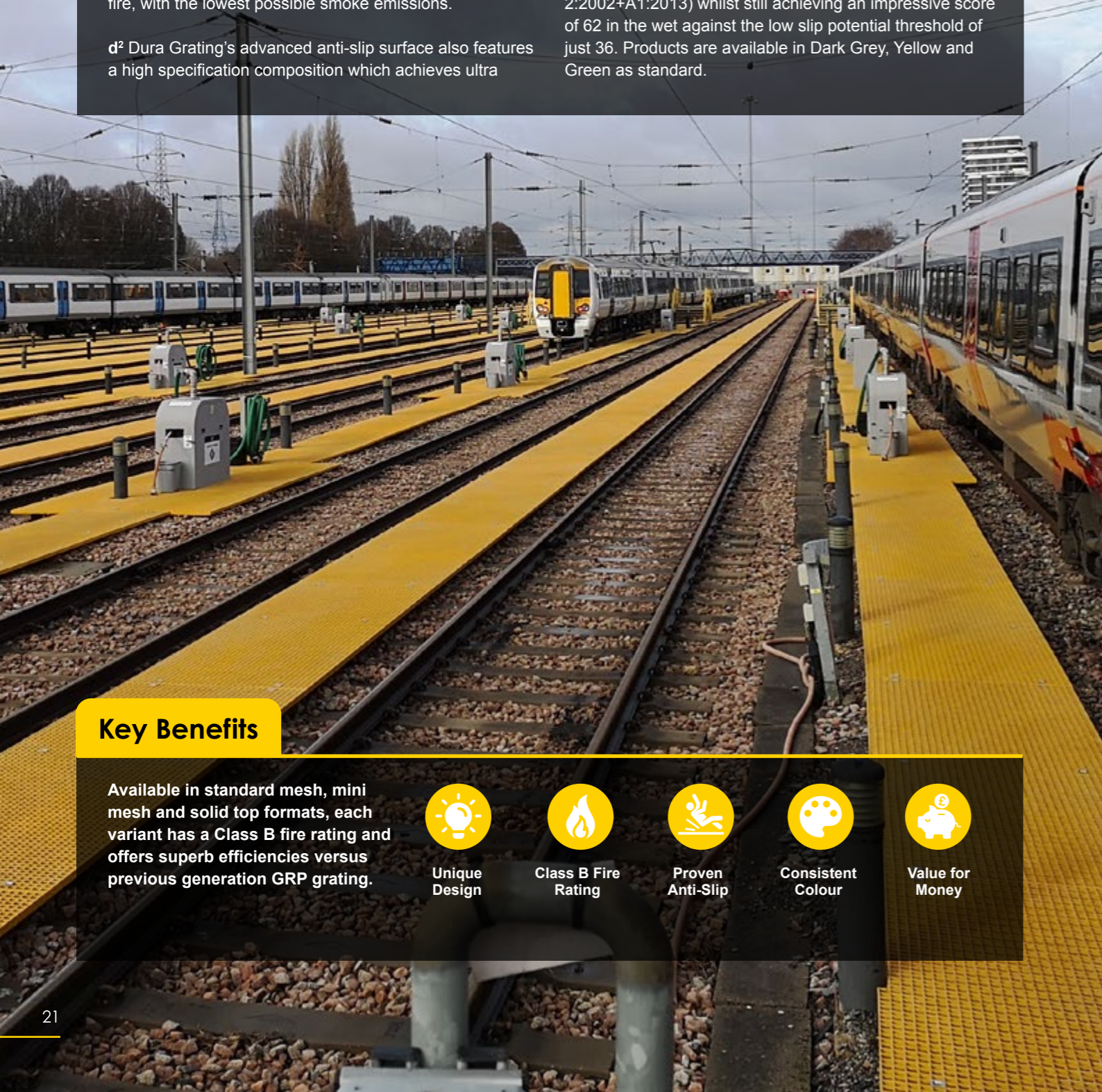
d² Dura Grating

d² Dura Grating is part of the innovative d² product family which is available exclusively from Dura Composites. Featuring unique grating mesh designs which deliver class-leading product performance.

d² Dura Grating GRP stand mesh, mini mesh and solid top flooring achieves a classification of B-fl, s1 in accordance with BS EN 13501-1, meaning very limited contribution to fire, with the lowest possible smoke emissions.

d² Dura Grating's advanced anti-slip surface also features a high specification composition which achieves ultra

low slip potential in both wet and dry conditions. The slip potential of the surface is proven to reduce by a mere 5% after 1 million footfalls (in accordance with BS 7976-2:2002+A1:2013) whilst still achieving an impressive score of 62 in the wet against the low slip potential threshold of just 36. Products are available in Dark Grey, Yellow and Green as standard.



Key Benefits

Available in standard mesh, mini mesh and solid top formats, each variant has a Class B fire rating and offers superb efficiencies versus previous generation GRP grating.



Unique Design



Class B Fire Rating



Proven Anti-Slip



Consistent Colour



Value for Money

Available d² Dura Grating Variants

Designed, developed and manufactured by Dura Composites, d² Dura Grating offers outstanding safety, performance and durability and is more cost-effective than traditional GRP grating in almost every scenario. Use the table below to find the right panel size for your project.

Product Range	Depth (mm)	Open Hole Size(mm) /Open Area	Panel Sizes (mm)	Colour	Weight (kg/m ²)
Standard	26mm d ²	32 / 60%	3043 x 993 3699 x 1239	Dark Grey / Yellow / Green	10.3
	38mm d ²	31 / 66%	3054 x 996 3663 x 1224	Dark Grey / Yellow / Green	13.2
	50mm d ²	28 / 63%	3052 x 1057 3682 x 1267	Dark Grey / Yellow / Green	15.7
Mini Mesh	35mm d ²	19.5 / 54%	3030 x 1041 3667 x 1200	Dark Grey / Yellow / Green	13.2
	45mm d ²	19.5 / 54%	3030 x 1041 3667 x 1200	Dark Grey / Yellow / Green	15.3
	55mm d ²	19.5 / 54%	3030 x 1041 3667 x 1200	Dark Grey / Yellow / Green	19.0
Solid Top	29mm d ²	None	3699 x 1239 3043 x 993	Dark Grey	16.7
	41mm d ²	None	3663 x 1224 3054 x 996	Dark Grey	21.1
	53mm d ²	None	3052 x 1057 3682 x 1267	Dark Grey	22.9



Dura Slab

Dura Slab is designed as a modular structural flooring system, allowing the contractor huge flexibility both at the design stage and on site.

The anti-slip surface is tested in accordance with BS 7976-2:2002 and caters for all types of footwear and so is ideal for passenger environments.

The need for less or no alterations to the sub structure also dramatically reduces the install time, number of possessions and overall disruption to the end user. Again, no heavy lifting equipment is needed as all panels can be easily manhandled even in full stock lengths.

Key Benefits

Dura Slab is a range of one piece heavy duty trench, cable trough and pit covers which are pultruded in one mass to produce a consistent quality and incredible strength to weight ratio.



Easily Lifted for Access



Long Design Life



Anti-Slip Surface



Non-Conductive



Fire Resistant

Other Application Examples for Dura Slab

With many items available from stock, the covers are easy to transport to site, lift and install, unlike bulky concrete trough and access covers.

Cable Pits & Wide Span Trenches



Crossing Points: Single



Temporary Crossing Points



Overlay Crossing Points



Product Range	Quick Ref. Code	Length (mm)	Max Width (mm)	Panel Weight (kg) / m ²
Light Duty				
45mm	P45A 725 Solid Lap	3660	725	66.6kg / 25.1kg per m ²
Medium Duty				
50mm	P50B 500 Solid Lap	3660	500	72.0kg / 39.3kg per m ²
Heavy Duty				
75mm	P75C 650 Solid Lap	3800	650	135kg / 54.7kg per m ²
100mm	P100D 650 Solid Lap	2800	650	142kg / 78kg per m ²

Dura Safety Handrailing

Dura Composites offer a high quality, non-conductive GRP Handrail system complete with all fittings.

Dura Key Clamp Handrailing is lightweight and easy to handle and offers low installation and maintenance costs as it doesn't require painting or galvanising.

Available in high visibility yellow (RAL 1023) or grey (RAL 7043) it can be installed quickly and easily in a variety of industrial and transport environments such as high-voltage areas, rail stations and track-side settings

to provide worker or general public safety. Despite its lightweight properties, GRP handrailing offers impressive strength-to-weight and load-bearing performance.

The latest innovation in our d² product portfolio includes pre-assembled components which dramatically speed up on-site installation times.



Key Benefits

The ideal low-maintenance alternative to conventional galvanised steel key-clamp handrail systems, which are not suited to electrified rail environments.



Modular System



Part Pre-Assembled



Non-Conductive



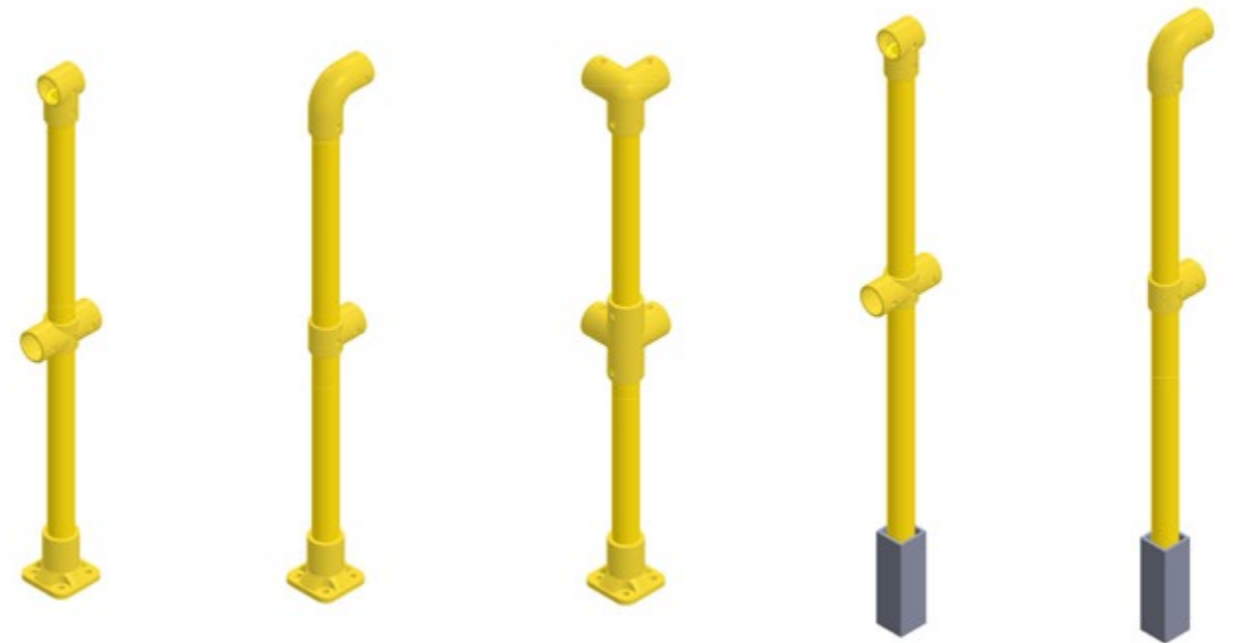
Warm to Touch



Corrosion Resistant

Pre-Assembled Parts

Dura Composites now offer pre-assembled 1.1m high handrail components in a waterproof palletised crate system. Pre-assembling 3 key parts (Mid Upright-Side Mount, End Upright-Side Mount, Mid Upright-Top Mount) not only speeds up deliveries but adds huge improvements to on-site installation speed.



Mid Upright

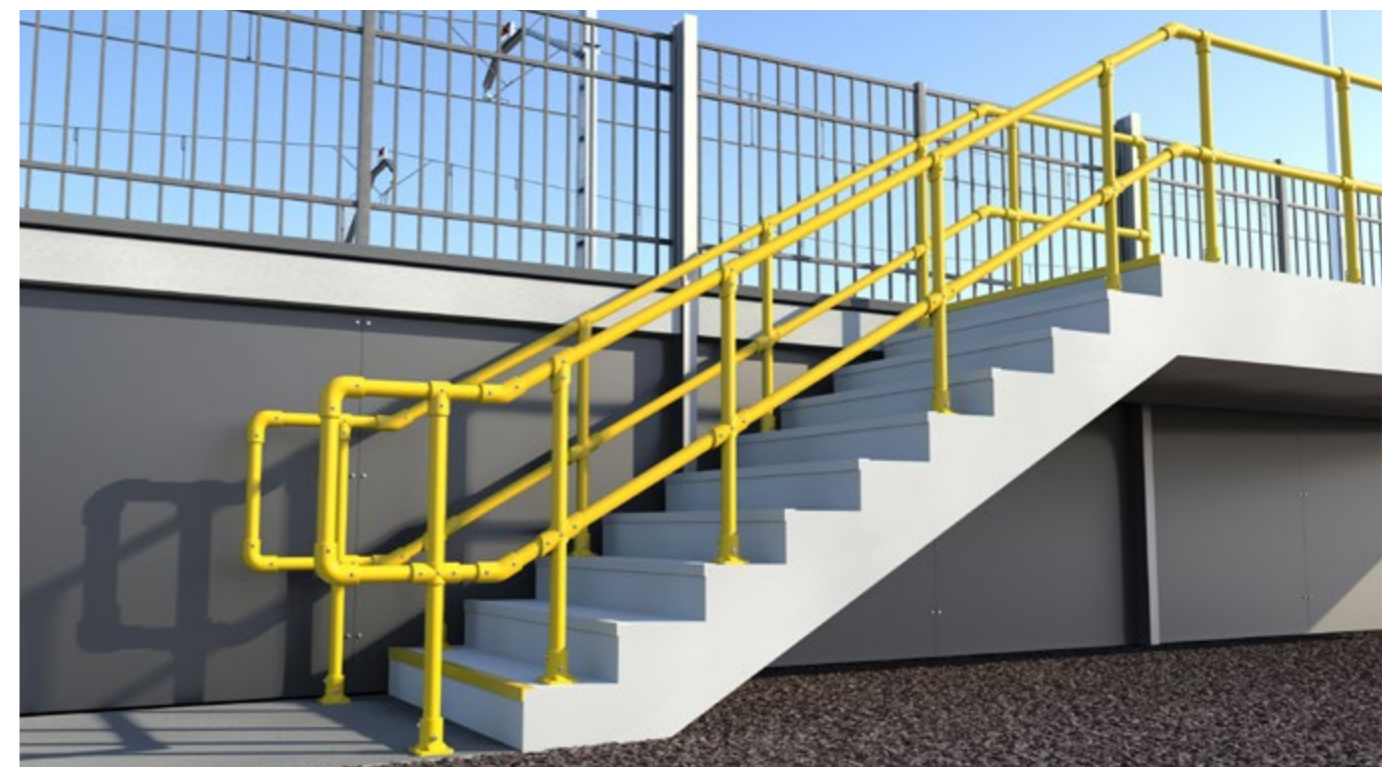
End Upright

Mid Upright

Side Upright*

Corner Upright*

1. Supplied from stock, arrives partially assembled in a waterproof palletised system.
2. *Longer lead times may apply for these types.



Dura Ballast Retention

Open and closed systems with hatches or lids

Dura Composites innovative GRP Ballast Retention systems allow Network Rail and key contractors greater access to hidden critical parts of structures to facilitate key safety checks and take action where necessary.

Dura Ballast Retention has been successfully implemented on a host of projects nationwide and offers significant advantages over traditional materials, including increased strength to weight ratio, high resistance to impact and resistance to fire and corrosion.

As part of the consultation process, Dura Composites provides all the technical information necessary to obtain Form 3 approval.

Bespoke support is provided for each installation to allow for the inclusion of enhanced speed and safety features such as the supply of GRP handrailing, bespoke lockable HCE inspection hatches, web stiffeners to suit particular dimensions and fabricated access staircases.

Specific Dura Patented Hidden Critical Elements (HCE) products have been developed through on-site experience and feedback from contractors.

The number of components and weight have been optimised to allow for rapid installation and fewer possessions.

Key Benefits

Our patented component forms the core support element of the full system and reduces the time taken to build a whole ballast retention system from weeks to just days.



Saves Time



Improves Safety



Long Lifecycle



Non-conductive

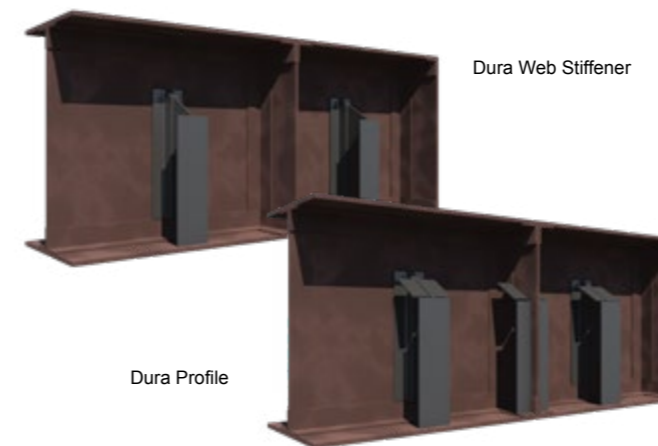


Modular System

Ballast Retention Range

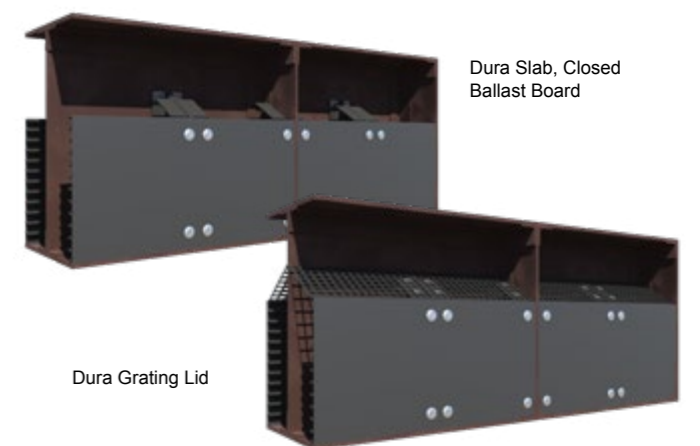
Closed Dura Ballast Retention System with Inspection Lid

- Type P40A Solid GRP Ballast Board
- Dura Web Stiffener
- Dura Profile
- Open Mesh Inspection Lid
- Compression Fixings for Front Face Fixing Only



Dura Web Stiffener

Dura Profile



Dura Slab, Closed Ballast Board

Dura Grating Lid



Open Dura Ballast Retention System with no Inspection Lid

- Dura Grating Open Ballast Boards
- Dura Web Stiffener
- Dura Profile
- Compression Fixings



Dura Web Stiffener



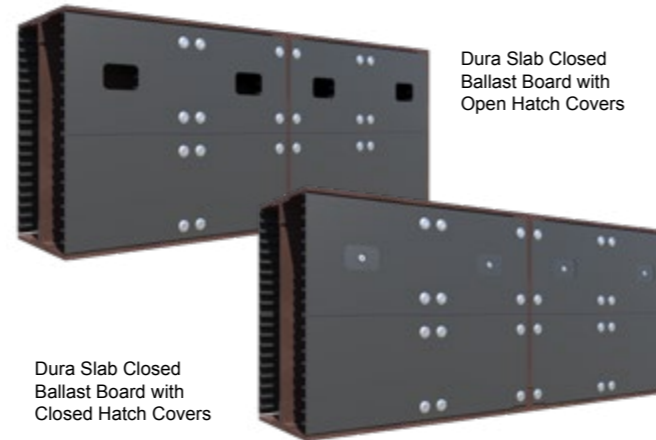
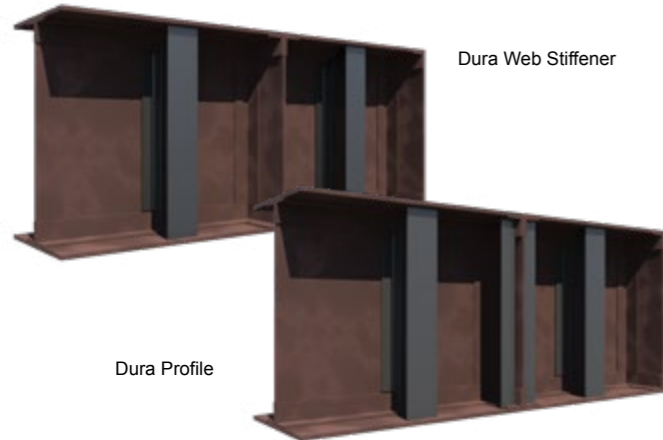
Dura Profile



Dura Grating Pultruded, Open Ballast Board

Closed Ballast Retention System with Inspection Hatches

- Type 40 Solid GRP Ballast Board with Inspection Hatch
- Dura Web Stiffener
- Dura Profile
- Dura Hatch Lock Plate



Ballast Retention System Lids only

For applications where the requirement only calls for lids or extensions onto existing Ballast Retention Systems, and full systems are not required, we have developed Pultruded Grating Lids with a 21.6mm open aperture and standard Grating Lids with a 42x42mm open aperture.



Modular Web Stiffener (Patented GB2522039)

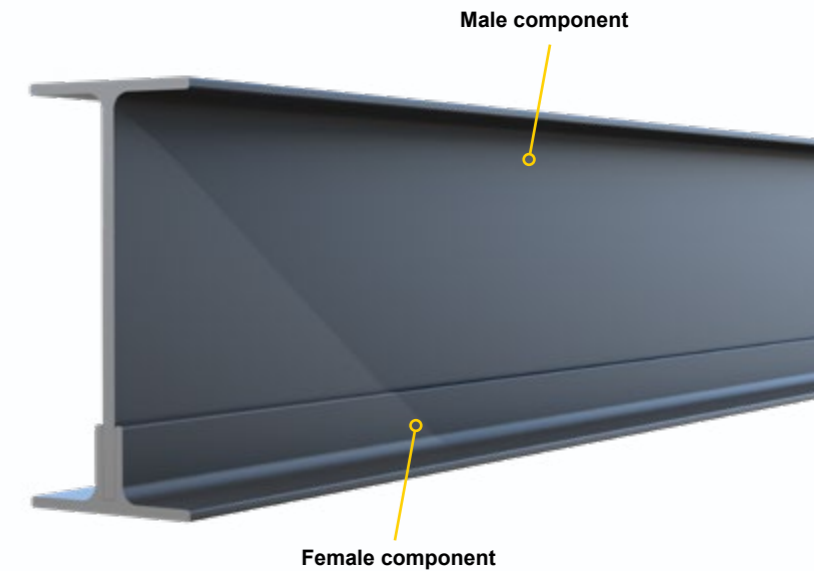
Specifically developed for Hidden Critical Element (HCE) works, the Modular Web Stiffener System is the latest in highly engineered composite technology. Comprising a unique pultrusion system which reduces the number components and weight even further but maintaining the required strength. The reduction in the number of components and weight verses alternatives further improves install time on-site.

Easier and Faster to Install on-site

Significantly reducing the weight and bonding in the factory, has not only increased speed of delivery but has also improved installation time. Based on real site feedback, not only is it easier to handle but the new design also allows for easier on-site adjustments.

Improved Fabrication Lead-times

The average bridge package currently takes 2 weeks to fabricate, whilst Dura Composites' patented design allows the same package to be produced in 2-3 days. As well as investing in the new tooling we have also added significant new machinery including bespoke cutting and bonding equipment to enable this huge speed improvement.



High Strength to Weight Ratio

The solution has been designed as a two-part pultrusion with an advanced glass and roving system. This precision engineering results in significant weight saving versus alternative designs and marked improvements in safety. Dura Composites' Modular Web Stiffener System can be delivered rapidly to site to coincide with last minute possession or urgent line blockages which can be critical in the rail environment, making it the ideal choice over inferior web stiffeners on the market.

Dura's Universal Modular Web Stiffener is fully adjustable and helps speed up install times, resulting in fewer possessions.



Dura Profile

Our **d²** Dura Profile components meet the E23 grade performance requirement of the BS EN 13706 standard and provide greater strength and consistent quality.

The versatility of **d²** Dura Profile makes it a logical and cost-effective alternative to carbon, steel, aluminium, wood or other conventional materials that have traditionally been used in rail and trackside environments.

We carry a large stock holding of profile, including Angle, Channel, Box and Tube sections at our UK Operations Centre.

Our new online Interactive Product Selector allows users to confidently select a GRP Dura Profile beam section

based on whatever traditional beam may already feature on a drawing.

The specific steel or timber beam type and size can be selected from a drop-down list, the load criteria chosen alongside the span, and the Dura Composites tool will show which **d²** GRP Dura Profiles meet or exceed the performance of the steel or timber and provide the relevant safety factor data.

Working with Dura Profile

According to live test data, **d²** Dura Profile has an average Tensile Modulus of more than 31 GPa - far exceeding the requirement of 23 GPa set out by the stringent E23 European standard within BS EN 13706. This means that **d²** Dura Profile is on average 88% stronger than other GRP profiles, which only meet E17 GPa. The result is smaller sections can be used, saving weight and resulting in more cost-effective product selection.

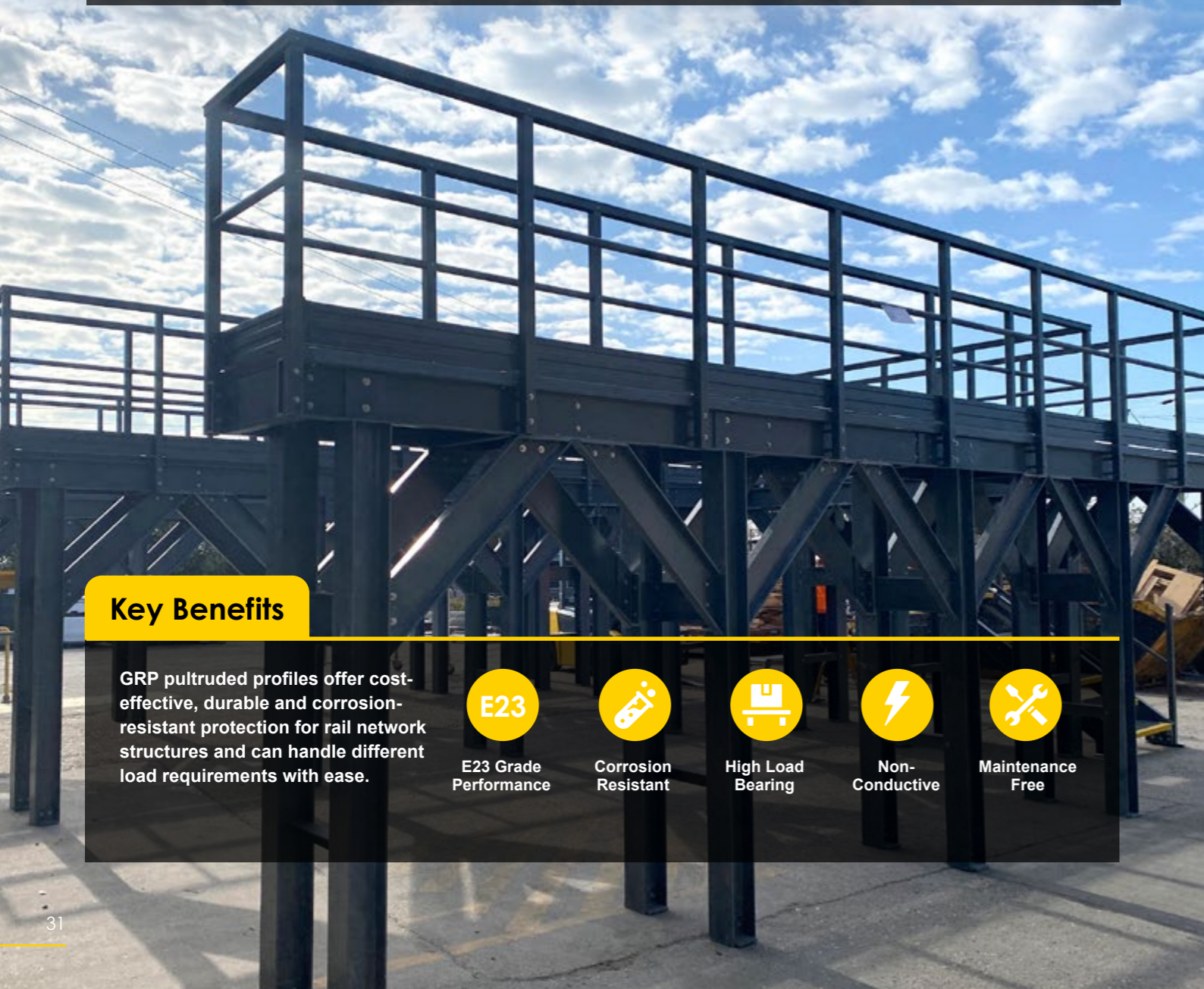
Fabrication methods used with conventional materials can also be used with Dura Profile. The most common form of connections are made by mechanical fasteners.

Bonded joints are also an option and selection of the appropriate method will depend on the:

- Distribution of loads within the assembled structure.
- Necessity to disassemble the structure components at a later stage.
- The environmental conditions during fabrication.
- The environment in which the assembled structure will be used.

Dura Composites can design specific structures made from Dura Profile components around a customer's requirements and can fully support modular installation methods if required.

All fabricated structures can be supplied with detailed dimensions and weights, including footprint size, to ensure it will fit within the overall planned design.



Key Benefits

GRP pultruded profiles offer cost-effective, durable and corrosion-resistant protection for rail network structures and can handle different load requirements with ease.

- E23 Grade Performance
- Corrosion Resistant
- High Load Bearing
- Non-Conductive
- Maintenance Free



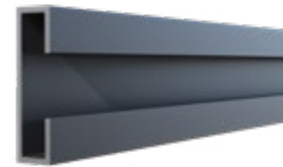
Angle



Channel



Top Rail



Box Channel



I Beam



Tube



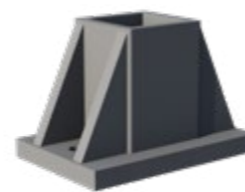
Kick Plate



WFB



Box



Box Base Foot



Web Stiffener

What you get when you work with Dura Composites:

1. Online Tools

Using our online tool you can customise, price and specify your own step-over access systems online from our next generation d² GRP Access Structure range. Dura Composites are experts in the design, fabrication and supply of composite GRP step-over access systems, up and over stairs and step units to help navigate obstacles such as pipework, plant equipment, bund walling or changes in level and to provide safe access.

We now offer a complete range of d² Fabrications (Reg. Design No. 008200554-0001), deploying the latest innovations in GRP technology to deliver

the safest, most cost-effective, user-friendly and aesthetically pleasing GRP access systems on the market. The d² GRP Access Structures have been designed to the stair configuration, height, and obstacle width of your specific project. Simply select your project site parameters from the options below to view available step-over designs with indicative pricing*.

All d² GRP Access Structures are designed in conjunction with relevant standards for commercial and industrial use and provide a safe, low-maintenance, non-conductive and cost-effective



alternative to metal or wooden structures. Visit our website to have a go: www.duracomposites.com/grp-access-structures/d2-grp-access-structure-configurator

2. Design Support

If you're working in rail infrastructure design or if you're simply looking to improve safety and performance for your rail assets, we can help support your design services across all phases of the project lifecycle. We can provide detailed technical specifications for our award-winning product range to help you make data-driven decisions. We have an extensive library of previous projects which have been successfully



installed in a wide range of station and trackside locations. Our in-house CAD and Structural Engineering team can be utilised both for stand-alone design and as part of larger integrated design scheme. Whatever your scenario, you can be confident that we'll help ensure your project will meet the load performance and specification needed, otherwise we won't supply it!

3. Cutting – Standard & Specialist

We understand that each rail and transport network project is an individual contract with specific design requirements. Dura Composites' specialist cutting team offer a full range of services to ensure that our product meets your exacting requirements so you can install with confidence.

Our 2D, 3D, and 4-axis CAD team are the best people to help you get a first impression of how you can utilise our market-leading composite products. Once the product is designed, our

professional staff can cut it into life, using precision tooling to perform straight lines, cuts, routing – whatever you need.

STANDARD

Drawing on 20+ years' experience Dura's cutting team can cut to a 3mm tolerance.

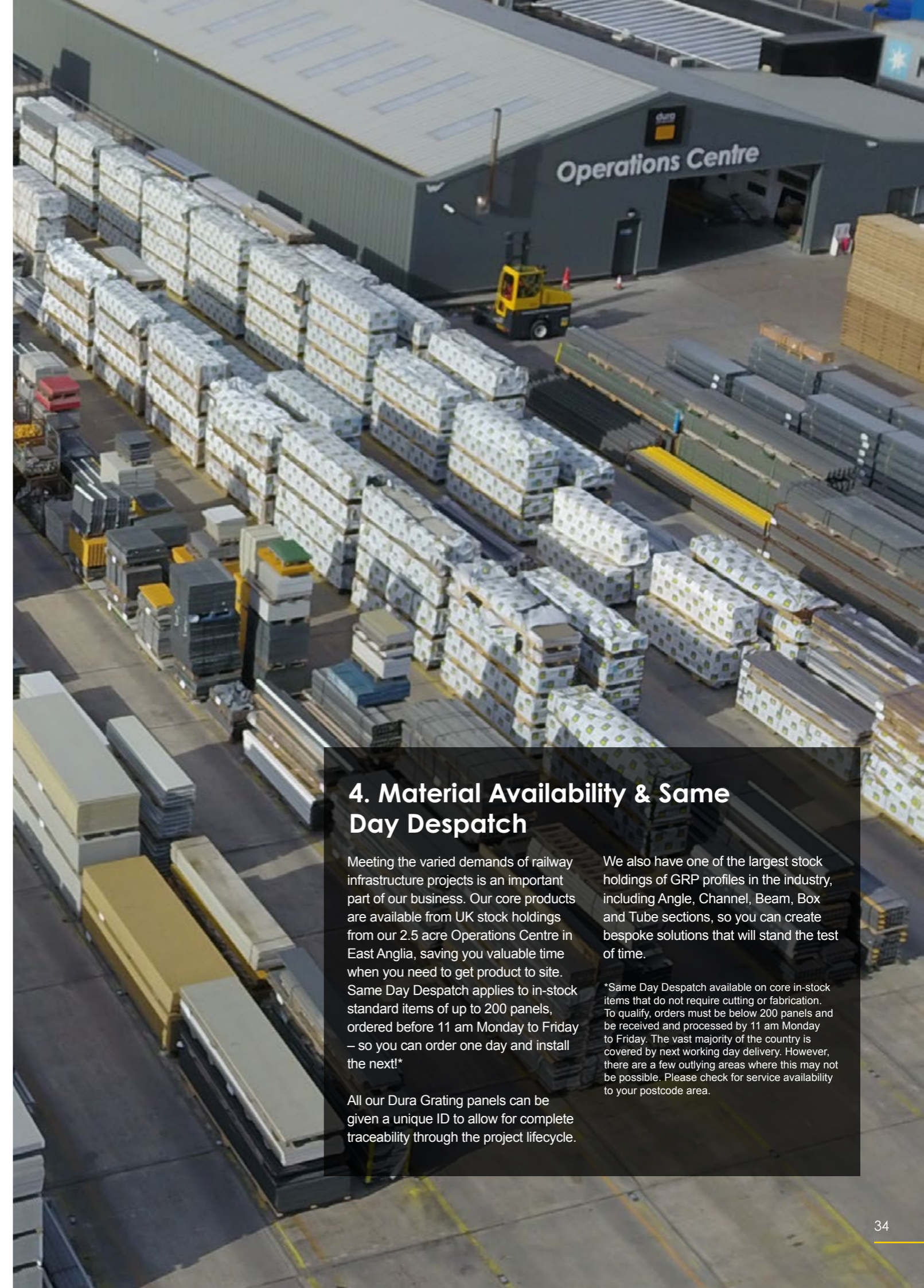
SPECIALIST

Alternatively, if you require a more specialised cutting service our team can help. We aim to optimise cuts per panel to ensure the best yield and that all panels are used in the most efficient way.



ROUTING

We can router holes suitable for lifting eyes or for other requirements as specified.



4. Material Availability & Same Day Despatch

Meeting the varied demands of railway infrastructure projects is an important part of our business. Our core products are available from UK stock holdings from our 2.5 acre Operations Centre in East Anglia, saving you valuable time when you need to get product to site. Same Day Despatch applies to in-stock standard items of up to 200 panels, ordered before 11 am Monday to Friday – so you can order one day and install the next!*

All our Dura Grating panels can be given a unique ID to allow for complete traceability through the project lifecycle.

We also have one of the largest stock holdings of GRP profiles in the industry, including Angle, Channel, Beam, Box and Tube sections, so you can create bespoke solutions that will stand the test of time.

*Same Day Despatch available on core in-stock items that do not require cutting or fabrication. To qualify, orders must be below 200 panels and be received and processed by 11 am Monday to Friday. The vast majority of the country is covered by next working day delivery. However, there are a few outlying areas where this may not be possible. Please check for service availability to your postcode area.

5. BIM Objects

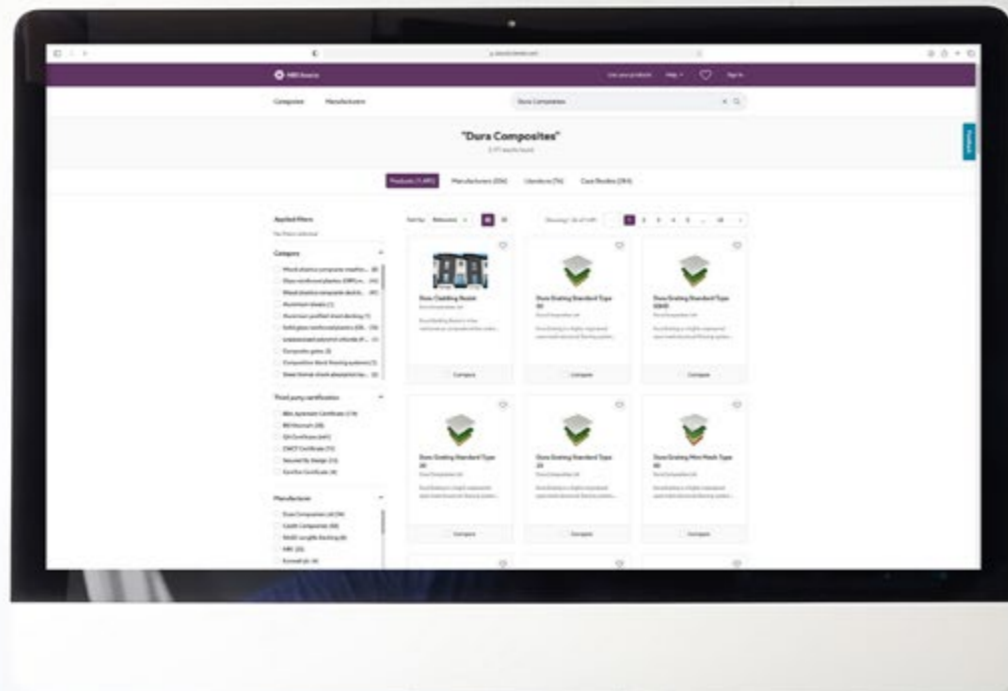
Our Dura Composites BIM objects are hosted on NBS Source where they are available for use by architects, designers, engineer, contractors and specifiers.

Available free, our data-rich Dura Composites BIM Objects allow specifiers to see up-to-date, accurate data about Dura Composites products and to easily incorporate them into their overall design.

Authoring to the trusted NBS standard, each BIM Object details the various surface finishes, profiles, sizes and colour options for each product, and provides specifiers and end clients with detailed information on how the products will perform during their expected lifecycle.

To access the Dura Composites BIM objects visit: <https://source.thenbs.com/search-results/products?search=Dura%20Composites>.

If you require any additional information or support, please contact us to discuss how our CAD team can work with your sales contact to unlock the power of composites for your project. We also offer a range of CPD training materials which are delivered by our experienced team.



6. CPD Training

With budgets under ever increasing scrutiny, it's never been more vital to ensure that the solutions provided to the rail industry are both future proof and have a measurable impact on efficiency.

Dura Composites now offer a series of training sessions for designers and contractors to understand the technical capabilities and install methodology of Dura products in a supportive and engaging environment. We can cater training sessions specifically to the requirements of your project. For more information please speak to a member of the Rail team.



7. Technical Information Manuals

We offer a wide range of accessible technical information regarding our product range to help ensure that your chosen product meets the performance need of your specific rail application.

Our interactive product selector tool allows you to get a GRP grating or profile product recommendation in just

a few steps and is the result of years of extensive research and rigorous live and simulated testing.

We also have a number of technical manuals and material safety data sheets which are readily available from your Dura Composites sales representative.



8. Accreditations

From being accredited by the UK Rail Industry's leading professional and industry bodies to establishing and maintaining close working relationships with carefully chosen partners – Dura Composites constantly dedicates time and effort to ensuring our service to you is current, knowledgeable and effective.

Our range of accreditations are gained through a variety of methods, from comprehensive audit assessment to evaluation of approaches to health and safety, BIM and quality management to ensure we meet the highest possible standards.

In 2020, we were proud to have successfully earned recertification to

ISO 9001:2015, the internationally recognised standard specifying the requirements for quality management systems. This is a testament to Dura Composites' team members – from sales and marketing to fabrication, operations and installation – who thrive on improving customer value through quality management.



Make Data-Driven Decisions >>

This brand-new online tool helps unlock the world of composite products for a vast range of architects, engineers, project managers and designers. The result of years of extensive research and rigorous live and simulated testing, the online Interactive Product Selector is available now at www.powerofcomposites.com to help those within the rail, civils and asset management industries make fast and accurate decisions about the right product specification for their projects.

How to Unlock the Power of Composites for Your Business

Users can compare products across the Dura Composites range with the click of a button, with easy to interpret graphs collated into a single view. BIM data files which feature product information can also be downloaded from the tool, allowing architects and specifiers to streamline the design, build and maintenance process to save time and money.

Once a range of suitable products have been identified, detailed product information can be accessed immediately such as drawings, dimensions, load tables and graphs unique to these products. The selected span and load criteria can be downloaded into a neat professional document for analysis and approval.



What does the Site Feature?

Say goodbye to lengthy technical datasheets, protracted quotes, and sub-par results. Welcome to the future of composite grating. With this one, seamless tool, you are able to input your precise requirements and receive a bespoke GRP grating product to match, complete with market-leading data feedback so you can see the difference for yourself.



GRP Grating Selection Tool

Create a list of grating products that meet your exacting criteria. Adjust the Load, Deflection and Fire Rating parameters accordingly; export detailed information such as Product Variations, Product Dimensions and Full bar guide.



Create Bespoke Grating Load/Deflection Tables and Graphs

Select product and options to display customised information in downloadable assets to back up your specification. Adjust the load and span range and interval to create your very own dynamic load and deflection table.



Grating Comparison Graphs

Compare the performance of grating panels against one another using a graphical format. Set Load Type between Point Load (PL) and Uniformly Distributed Load (UDL) then select an unlimited amount of products to compare.



Profile Selector

Understand the performance of GRP profiles in comparison to traditional materials, for example using GRP instead of timber, steel or aluminium. Understand the specification and suitability of a product based on your intended application.



Material Properties

The material data reported has been compiled to allow engineers and specifiers to quantify the material properties with those contained within specifications.



Property Comparison

A visualisation of the difference between various properties for traditional materials versus our products. The values quoted are for representation only and are typical within the range of values for the given material.

So what are you waiting for? Unlock the Power of Composites and discover the Dura difference for yourself.



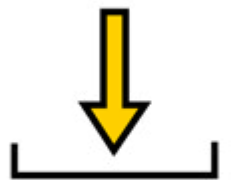
1. Register



2. Insert Specifications



3. Get Product Recommendations



4. Download Technical Data

Visit www.duracomposites.com/powerofcomposites today

Head Office

Dura Composites Ltd
Dura House, Telford Road
Clacton On Sea
Essex, CO15 4LP
United Kingdom

Tel: +44 (0)1255 440291
Email: info@duracomposites.com

www.duracomposites.com

Unlocking the Power of Composites » for the Rail Industry

Due to our policy of continual improvement we reserve the right to change specifications at all times without prior notice. DURA COMPOSITES, the Dura Composites logo, the d2 logo, DURA DECK and UNLOCKING THE POWER OF COMPOSITES are registered trademarks of Dura Composites Limited in the UK.



duraTM
composites

