

GRP

GRP Cable Trough & Trench Cover Lids

d²



Moulded and pultruded open mesh and solid top GRP trench covers, trough covers and drawpit lids with excellent strength-to-weight ratio and non-conductive properties.

Unlocking the Power of Composites™
» for the Energy Industry

dura™
composites

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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 Industrial, Construction, Rail, Transport, Marine, Leisure, 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.



Why Choose Composites?

We are a leading designer, manufacturer and supplier of lightweight but high strength flooring panels. Made from high-performance Glass Reinforced Polymer (GRP) our unique range of moulded and pultruded flooring panels are ideal for all types of Cable Trough and Trench Covers.

Advanced Product Performance

Composites have been around since the 1930s, and were first developed for use within boat hulls, plane fuselages and wings. Today’s composites are used in a wide range of solutions from bridges to oil rigs and water slides to drum sets, and the design possibilities are vast.

One of the most popular emerging composites of the past 40 years has been Glass Reinforced Polymer (also known as GRP or fibreglass), which is a resin-based composite that’s reinforced with a glass fibre. We have a proven track record in supplying innovative GRP solutions for a variety of projects across the globe, including open mesh grating, duct covers and safety access ladders.

Built-in Sustainability

Dura’s GRP products offer considerably low life cycle costs due to their maintenance free, corrosion resistant and impact resistant characteristics compared with traditional materials. They also have a design life in excess of 60 years and a reassuring 25 year product warranty.

Even after the products have been used for their intended purpose and reach the end of their lifecycle in the original context, they can be up-cycled or repurposed in other ways. We are happy to advise all customers on their specific scenarios.



For additional details and technical information please visit www.duracomposites.com or call +44 (0)1255 440290.

Please Note: All colour swatches and images shown in this document are intended as a representation only and should not be considered as an exact colour match. We would recommend ordering a colour swatch sample so you can assess colour suitability before placing your order.

Our manufacturing process results in a high level of colour consistency although some variation in colour may be apparent across products from different production batches.



Want a Single Source Trough & Cover Supplier?

We have teamed up with Ibstock to help customers access the best in pre-cast concrete troughs and GRP composite trench covers from a single supply chain source partner.

The partnership provides UK Energy sector customers with readily available stock of concrete troughs and GRP lids alongside high levels of local technical engineering support.

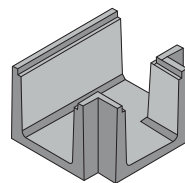


Ibstock
At the heart of building

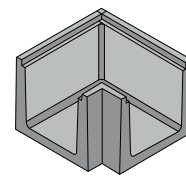


We have seen a marked increase in customers requiring a combined concrete trough and GRP lid system and as a recognised leader and innovator in the market, Ibstock has enhanced it's offering of Anderton pre-cast reinforced concrete troughs to include solutions specifically designed for the Power and Energy infrastructure sector.

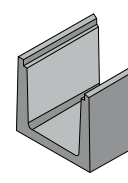
Ibstock Anderton troughs and Dura Composites lids are available for every trench cover project scenario. Even if your project requires the use of Utility Duct Tees, Corners, 22.5 or Stop Ends & Lids, durable GRP Dura Composites Lids can be easily achieved.



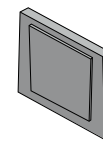
Tee



Corner



22.5°



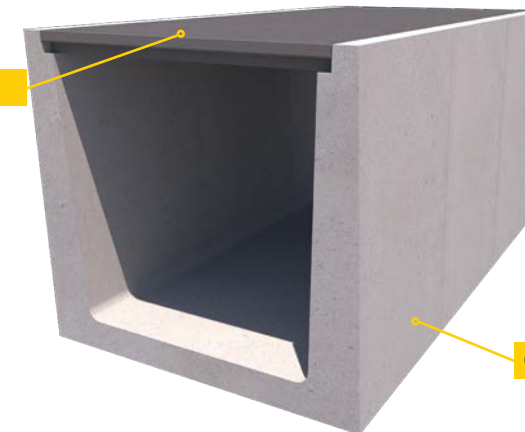
Stop End



The Perfect Combination...

Our GRP lids allow for easy manual handling, simple installation on site, and have a gritted anti-slip surface that requires minimal maintenance.

GRP Cover



Concrete Trough

Combination Examples

From open mesh to solid top lids (or a combination of both), Dura Composites has an unrivalled selection of pedestrian and vehicle rated covers to meet your specific project needs.

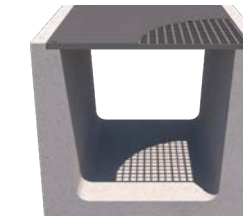
Take a look at the next page to see our trough and lid compatibility table to find out which product best suits your chosen trough. Trough dimensions are shown as width x depth.



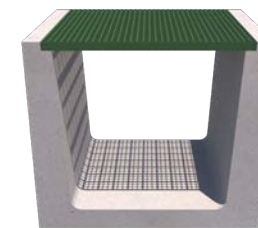
450 x 450



600 x 600



750 x 750



1000 x 1000



1250 x 1250

Already got a Trough but need a Cover?

We don't just supply the combination. If your trough system is already defined, you can purchase the covers from our extensive UK stockholding. Take a look at page 7 to see which products we recommend for various applications in the energy sector.



Trough/Lid Compatibility

Use the table below to help guide your lid or cover selection in line with your required load rating and trough size. Alternatively please consult the online tools in the resource centre of our website to help narrow down your product selection. Please note that your Dura Composites representative can advise on available discounts for high volume orders.

Trough Size	Required Cover Width (mm)	Open / Solid Cover	Required Load Rating	Standard / Special Rebate	Suitable Dura GRP Product
450 x 450	600	Open Covers	A15	Standard	50mm Standard Mesh Grating
				Special	26mm Standard Mesh Grating
			B125	Standard	50mm Rectangular Standard Mesh Grating
			C250		50mm HD Standard Mesh Grating
		Solid Covers	A15	Standard	53mm Solid Top Grating
			B125	Special	29mm Solid Top Grating
				C250	Standard
600 x 600	765	Open Covers	A15	Standard	50mm Standard Mesh Grating
				Special	26mm Standard Mesh Grating
			B125	Standard	50mm Rectangular Standard Mesh Grating
			C250	Standard	50mm Flat Beam Pultruded Grating
		Special		63mm Flat Beam Pultruded Grating	
		Solid Covers	A15	Standard	53mm Solid Top Grating
			B125	Special	29mm Solid Top Grating
				C250	Standard
					Special
750 x 750	920	Open Covers	A15	Standard	50mm Standard Mesh Grating
				Special	38mm Standard Mesh Grating
			B125	Standard	50mm HD Standard Mesh Grating
			C250	Standard	100mm Flat Beam Pultruded Grating
		Special		63mm Flat Beam Pultruded Grating	
		Solid Covers	A15	Standard	53mm Solid Top Grating
			B125	Special	41mm Solid Top Grating
				C250	Standard
					Special
1000 x 1000	1187	Open Covers	A15	Standard	50mm Standard Mesh Grating
				Special	38mm Standard Mesh Grating
			B125	Standard	50mm Flat Beam Pultruded Grating
			C250	Standard	63mm HD Standard Mesh Grating
		Special		100mm Flat Beam Pultruded Grating	
		Solid Covers	A15	Standard	53mm Solid Top Grating
			B125	Special	41mm Solid Top Grating
				C250	Standard
				Standard	Dura Slab Closed Type 100
			Special	Dura Slab Closed Type 75	
1250 x 1250 *	1454	Open Covers	A15	Standard	50mm Standard Mesh Grating
			B125		50mm Flat Beam Pultruded Grating
			C250		100mm Flat Beam Pultruded Grating
		Solid Covers	A15		53mm Solid Top Grating
			B125		Dura Slab Closed Type 50
			C250		Dura Slab Closed Type 100

*Please note: Packing is required for all 1250 x 1250 Troughs.

Why Choose GRP Covers

We have a wealth of experience in the manufacture and supply of Trench and Access covers - both for new constructions and refurbishment applications. Let us help you Unlock the Power of Composites with a low maintenance, durable and simple to install composite Glass Reinforced Polymer (GRP) alternative to heavy & cumbersome steel or concrete covers.

Our trench and trough covers are designed for maximum versatility and work with both precast flat top concrete troughs as well as with precast concrete troughs with a factory formed recess which enable a flush fitting with the floor surface.

Open mesh and solid top versions are available using the latest GRP moulded and pultruded designs and technology to meet the needs of even the most demanding applications.

Key Benefits

- Easily Lifted for Access
 - Long Design Life
 - Anti-Slip Surface
 - Non-Conductive
 - Fire Rated
- Corrosion Resistant
 - Impact Resistant
 - Minimal Maintenance
 - Versatile Designs



Solid Covers



Open Mesh Covers





Trench Cover Applications

With an innovative design that can include either manual lifting eyes or mechanical lifting arms, our trench cover lids can meet the needs for straight sections, curved sections, right angles and Ts and have an excellent strength to weight ratio. The lightweight nature of the covers mean routine inspections and repairs can be made easily, by simply removing the appropriate covers.

Application Examples

Our trench cover products have additional scope for use within overlay crossing points and cable pits as shown in the images below. Our experienced team can advise on a range of standard and bespoke scenarios and can attend site on request for pre-start project consultations. We also offer 3D laser scanning and drone surveys for areas which are difficult to inspect or which have access restrictions. For more information on our Value Added Services, visit page 33.



Overlay Crossing Point



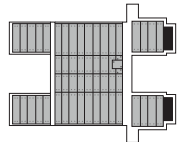
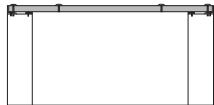
Cable Pit

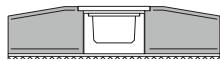


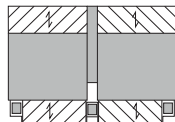
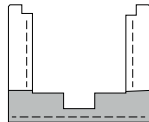
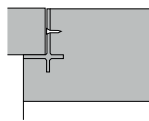
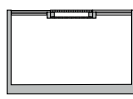
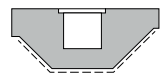
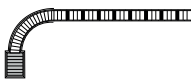
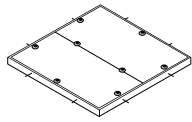
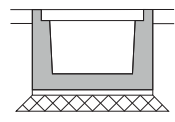
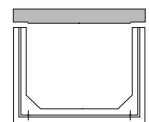
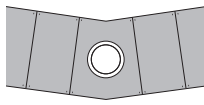


Crossing Point: Single



Crossing Point: Double

Trench Cover Application	Cover Options	Dura's Product Solution
Cable Pits & Wide Span Trenches		Closed All Solid Cover Solutions
Concrete Cover Refurb/ Rebate Changes		Closed Dura Grating Solid Top Dura Slab Closed

Trench Cover Application			Cover Options	Dura's Product Solution
Crossing Points	Single		Open	Dura Pultruded Grating
	Double		Closed	Dura Slab Closed
Overlay Crossing Points			Open	Dura Pultruded Grating
			Closed	Dura Slab Closed
Load Barrier Transitions			Closed	Dura Slab Closed
Drawpits/ Manholes	Precast		Closed	Dura Grating Solid Top Dura Slab Closed
Concrete Trough Construction	Cast In Rebate		Closed	All Solid Cover Solutions
	Post Fix Support			
	Timber Shutter Rebate			
Ventilation Control Trough Covers			Open	Dura Pultruded Grating
			Closed	Dura Slab Closed
Weatherproof Trough Covers			Closed	Dura Slab Closed
Precast Trough Construction	Rebated		Closed	All Solid Cover Solutions
	Flat Top			
Shaped Covers & Cut Outs			Closed	All Solid Cover Solutions





Unique
Designs



Extensive
Ranges



In Stock
Now



In-house
CAD team



ISO 9001 /
14001 / 45001

Our Products

Through a combination of design, technology and manufacturing innovations, we have developed a distinct range of walkway flooring, trench covers, structural profiles, hand-railing, access structures and related solutions, known as the d² range.

The innovative weight-reducing designs of d² reduce on-site logistics requirements, such as the need for movement by plant, in turn helping to reduce the carbon impact on the environment. The products also offer a combination of future-proof fire resistance, anti-corrosion, chemical resistance and anti-slip gritted surfaces. These features help to reduce contractors' build and through-life maintenance costs, whilst ensuring that end customers benefit from enhanced safety and accessibility.



Anti-Slip



Fire Rated



Corrosion Resistant



Impact Resistant



Low Maintenance

Moulded Cover Solutions

Ideal for Pedestrian Loading

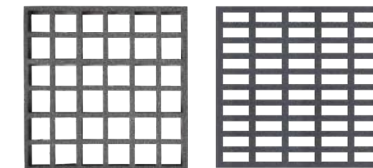
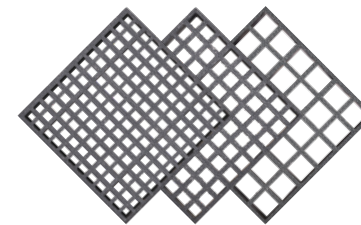
Our Moulded GRP Trench Covers are typically used for areas of pedestrian traffic and are available in a range of load ratings to suit every application and budget. Lightweight but high-strength, they dramatically reduce the cost of installation, maintenance and transport versus concrete covers. Many of our trench and trough access covers are available from stock for immediate dispatch.

d² Dura Grating

Part of the exclusive d² range, d² Dura Grating is the result of clever design innovation to create products that perform exceptionally well in terms of their strength to weight ratio, offering the option of a two-person lift in the majority of cases, and sustainable material efficiency - without being over-engineered for their intended purpose.

d² Dura Grating achieves an industry-leading Class B fire rating* in accordance with the BS EN 13501-1 standard, making it suitable for a range of trench cover project installations where fire safety is an important consideration.

We offer Standard Mesh, Mini Mesh and Micro Mesh variants to suit specific project needs. The latest addition to the range is our Rectangular Mesh product, which meets the needs of narrow trench spans with maximum efficiency.



Micro, Mini, Standard Mesh

Square vs Rectangular Mesh

Micro Mesh

Product Type	Standard Compliance	Length (mm)	Width (mm)	Weight (kg/sq)	Open Hole Size (mm)	Colours
23mm	EN 124 Class A Max Span 500mm	3043	1041	11.5	10.5 x 10.5	
		4076	1300			
		4076	1560			

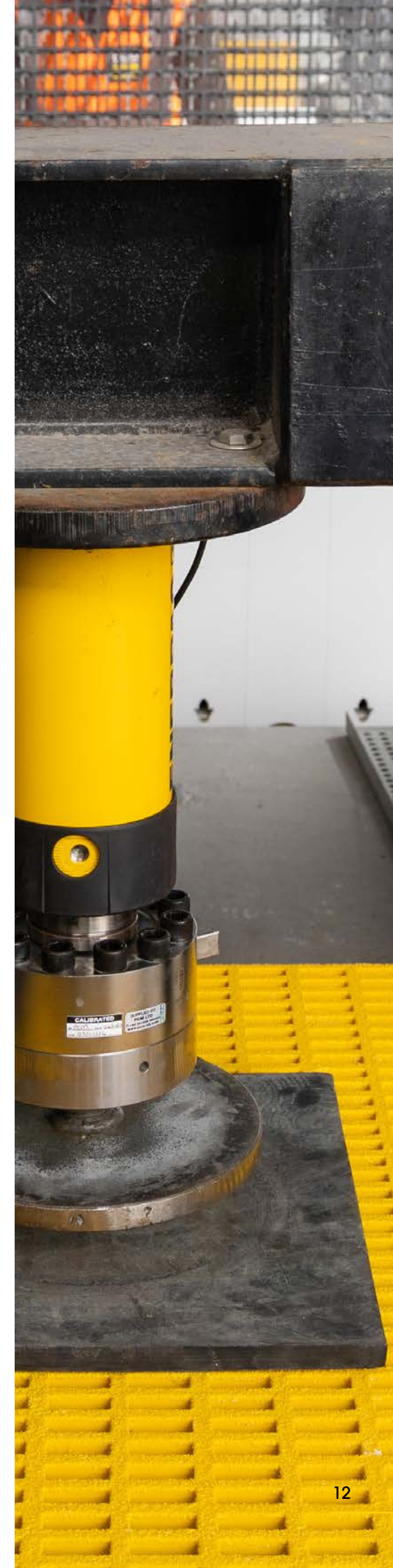
Mini Mesh

Product Type	Standard Compliance	Length (mm)	Width (mm)	Weight (kg/sq)	Open Hole Size (mm)	Colours
23mm	EN 124 Class A Max Span 500mm	3012	1029	11.1	13 x 13	
		4033	1269			
		4033	1511			
35mm	EN 124 Class A Max Span 800mm	3030	1041	13.2	19.5 x 19.5	
45mm	EN 124 Class A Max Span 1150mm	3030	1041	15.3		
55mm	EN 124 Class A Max Span 1500mm	3030	1041	19		

Standard Mesh

Product Type	Standard Compliance	Length (mm)	Width (mm)	Weight (kg/sq)	Open Hole Size (mm)	Colours
26mm	EN 124 Class A Max Span 600mm	3043 3669	993 1239	10.3	32 x 32	
38mm	EN 124 Class A Max Span 1150mm	3054 3664	996 1224	13.2		
50mm	EN 124 Class A Max Span 1500mm	3052 3682	1057 1267	15.7	28 x 28	
50mm Rectangular	EN 124 Class B Max Span 630mm	978.5	765	34	43 x 16	
50mm HD	EN 124 Class B Max Span 730mm	3000 3660	1000 1220	22	28 x 28	
63mm HD	EN 124 Class B Max Span 900mm	3000 3660	1000 1220	54		

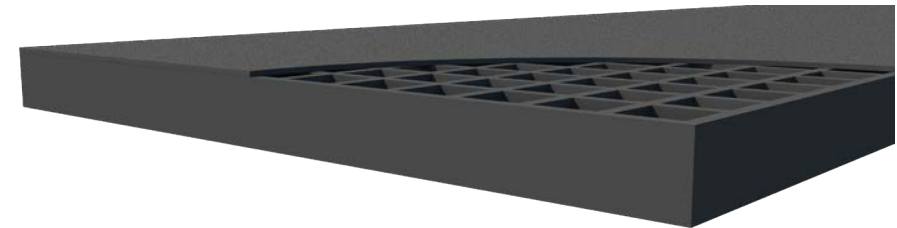
*excludes 23mm mini and micro mesh.






d² Dura Grating Solid Top is a great choice for situations where easy access is needed, but no daily light transmittance, drainage or visual inspection of the area underneath the grating is required.

The gritted, anti-slip properties and rigorously tested solid surface of d² Dura Grating Solid Top is easier to clean compared with other types of open mesh grating, as there are no open spaces for debris to accumulate. d² Dura Grating Solid Top is available in 29mm, 41mm and 53mm thickness in Dark Grey colour as standard.



Solid Top Structure

Solid Top						
Product Type	Standard Compliance	Length (mm)	Width (mm)	Weight (kg/sq)	Open Hole Size (mm)	Colours
29mm	EN 124 Class A Max Span 1150mm	3043 3699	993 1239	16.7	N/A	
41mm	EN 124 Class A Max Span 1800mm	3054 3663	996 1224	21.1		
53mm	EN 124 Class A Max Span 1900mm	3052 3682	1057 1267	22.9		
53mm Rectangular	EN 124 Class B Max Span 630mm	978.5	765	37		
53mm MD	EN 124 Class B Max Span 730mm	3660	1220	48		



Machine Manufacture

Optional Light Transmittance

Heavy Duty

Ventilation Options

Bi-Directional Strength

d² Dura Pultruded Grating

As an alternative to our moulded grating panels, we also offer pultruded GRP grating in various structural shapes, including I-Beam, T-Beam and Flat Beam.

The I-Beam grating has an I-shaped cross-section with flanges on either side of a central web, the T-Beam has a T-shaped cross-section with a central web and flanges on either side that extend beyond the width of the web to provide additional lateral stiffness, and the Flat Beam provides a smooth and flat surface that is ideal for pedestrian areas and areas which require additional drainage.

Each variant uses different shapes and sizes of bearing bars, providing excellent bi-directional strength and stiffness properties. The choice of which to use will depend on the specific requirements of your project, including the load-bearing requirements and overall aesthetics.

* Please note: pultruded grating samples are available on request but may be subject to extended lead times.

I Beam

T Beam

Flat Beam

I Beam						
Product Type	Open Hole Size (mm)	Standard Compliance	Length (mm)	Width (mm)	Weight (kg/sq)	Colours
38	10	EN 124 Class A Max Span 1300mm	3660	1220	23	<div></div> <div></div> <div></div>
	23	EN 124 Class A Max Span 1600mm			16	

T Beam						
Product Type	Open Hole Size (mm)	Standard Compliance	Length (mm)	Width (mm)	Weight (kg/sq)	Colours
50	10	EN 124 Class A Max Span 1800mm	3660	1220	24	<div></div> <div></div> <div></div>
	23	EN 124 Class A Max Span 1700mm			16	
63	10	EN 124 Class A Max Span 1900mm			28	
	23	EN 124 Class A Max Span 1800mm			19	

Flat Beam						
Product Type	Open Hole Size (mm)	Standard Compliance	Length (mm)	Width (mm)	Weight (kg/sq)	Colours
38	10	EN 124 Class B Max Span 900mm	3660	1220	54	<div><div></div><div></div><div></div></div>
	23	EN 124 Class B Max Span 730mm			34	
50	10	EN 124 Class B Max Span 1200mm			71	
	23	EN 124 Class B Max Span 1000mm			44	
63	10	EN 124 Class C Max Span 600mm			80	
	23				58	
100	10	EN 124 Class D Max Span 700mm			119	
	23	EN 124 Class C Max Span 700mm			80	

Pultruded Cover Solutions

Ideal for Vehicular Loading

We offer pultruded grating trench covers with an open area as well as one piece heavy duty trench covers which are pultruded in one mass to produce a consistent quality and incredible strength to weight ratio. Pultruded components are ideally suited to vehicular loading requirements for infrastructure installs including power, telecoms and utility projects.

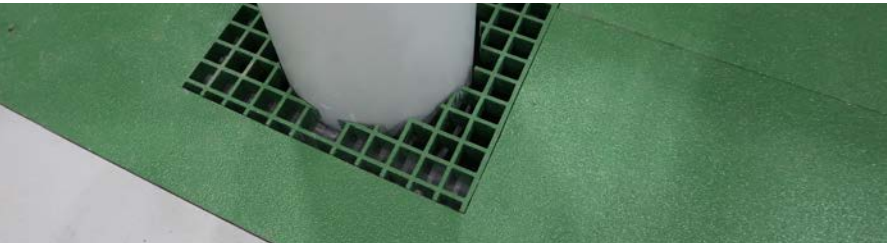

















d² Dura Slab

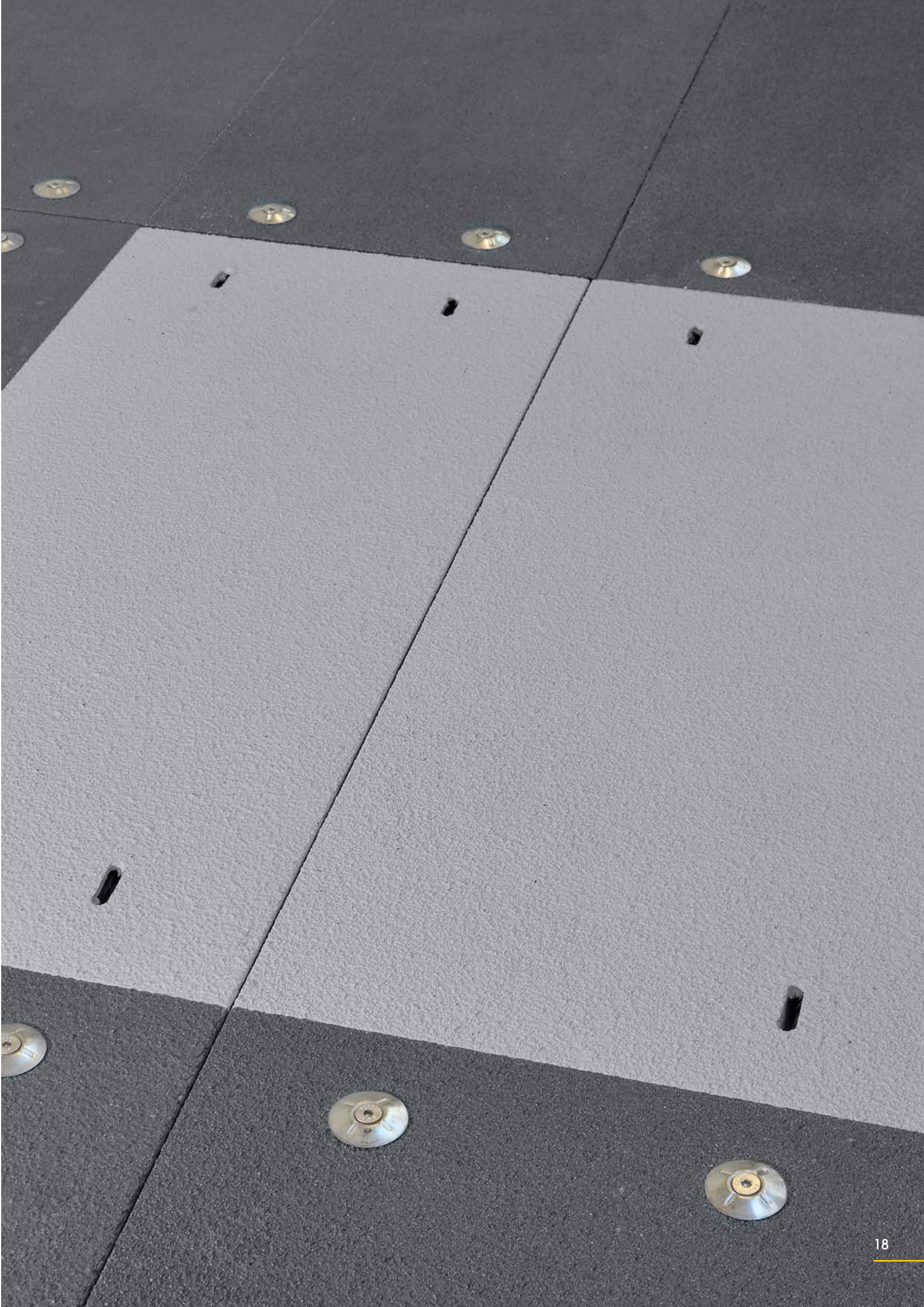
We are experts in the design, manufacture and supply of trench and access covers and heavy-duty floor slabs. Our Glass Reinforced Polymer (GRP) Dura Slab panels offer a low maintenance, durable and simple to install composite alternative to heavy & cumbersome steel or concrete covers.

With an innovative design that can include either manual lifting eyes or mechanical lifting arms, Dura Slab has an excellent strength to weight ratio. When used as trench or gully covers, its lightweight nature means routine inspections or cabling or other equipment can be made easily.

For more information and to see our full range of panel sizes and fixings, please visit our website.



Dura Slab Closed						
Product Type	Standard Compliance	Length (mm)	Width (mm)	Weight (kg/sq)	Colours	Solution Image
45	EN 124 Class A Max Span 2000mm	3600	725	26		 Top Panel
						 Bottom Panel
50	EN 124 Class B Max Span 1200mm		500	41.4	 	 Top Panel
						 Bottom Panel
75	EN 124 Class C Max Span 1200mm	3800	650	59.2		 Top Panel
						 Bottom Panel
100 (Easy Lift)	EN 124 Class B Max Span 1900mm	6000	375	52		 Top Panel
						 Bottom Panel
100	EN 124 Class C Max Span 2300mm	2800	650	84.5	 	 Top Panel
						 Bottom Panel



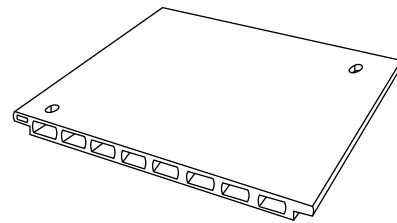
Accessories

We offer a range of compatible accessories to complete your Trough Cover solution. Many accessories are available from stock, but some are custom manufactured to order, so please ensure you advise us of any accessory requirements at the earliest possible stage. The table below details the available accessory types and their suitability for specific project areas.

Lifting Eyes & Keys

Supplied as standard to suit typical manual lifting requirements. Requires a traditional lifting key which engages with slots in the cover.

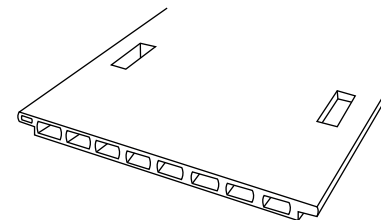
Suits: All Solid Covers



Hand Holes

Larger lifting eye, so no key is required. Can have an affect on panel integrity due to cut out size.

Suits: All Solid Covers



Mechanical Lift

Ideal for scenarios where lifting equipment is preferred to reduce the number of personnel required to lift.

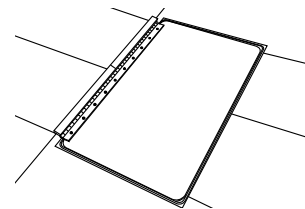
Suits: Covers too heavy for manual lift, or reduce number required to lift



Access Hatch

Hinged covers to offer easier access to utilities without lifting keys.

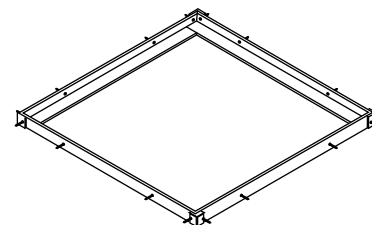
Suits: All Covers



Perimeter Frames

Creates rebate for cover to sit on.

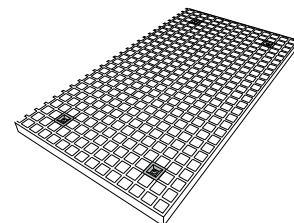
Suits: All Covers



Cover Retention

Used if there is no rebate present to retain cover position.

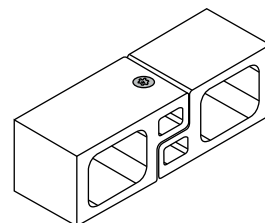
Suits: All Covers



Lockable Panels

Used to fix panels together as anti-tamper device. Also removes risk of panel uplift in floods.

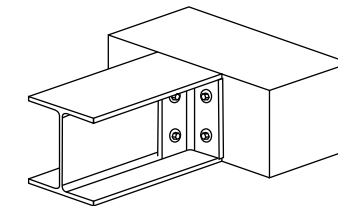
Suits: d² Dura Slab



GRP Supports

Substructure for trench covers to bear onto for large spans, direction changes or cut outs.

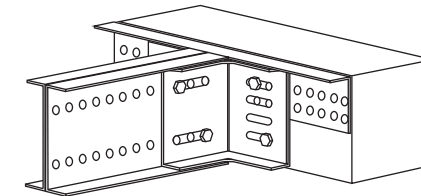
Suits: All Covers



Steel Supports

Substructure for trench covers to bear onto for large spans, direction changes or cut outs.

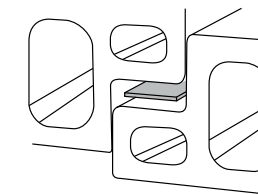
Suits: All Covers



Rubber Seal

Seal helps reduce sound when being walked on.

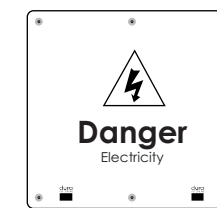
Suits: d² Dura Slab



Badges

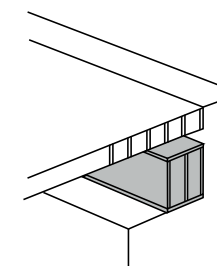
Used for product identification (normally the cover load rating).

Suits: All Covers



Packers

Panels can be built up to finished level in cases of incorrect rebate height. Also suited to refurb projects.



Light Duty

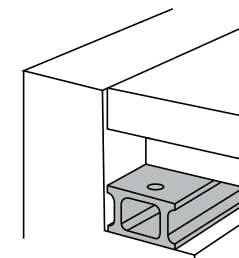
Suits: All Covers

Medium Duty

Suits: All Covers

Heavy Duty

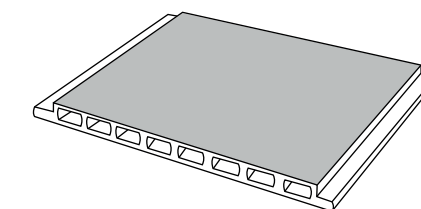
Suits: All Covers



RFI Shielding

Our trench covers can be fitted with Radio Frequency Interference (RFI) shielding material to reduce interference from external electromagnetic signals if required.

Suits: All Covers



We can provide Flexural Load reports to demonstrate the maximum working load of the proposed solution and/or adherence to BS EN 124-1, although please note that bespoke tests may be subject to an additional fee.







Cost Effective

Suits Existing Substrates

High Performance





Trough Cover Substrate Fixings

To complement our range of fixing clips, we can also offer a compatible substrate fixing, so you have the full fixing set for your project. Due to the significant variety of substrate conditions, Dura do not hold all of these fixings in stock but will look to supply on a project basis. Here is a range of substrate fixing types we have used on trench cover projects which suit our fixing clips or another Dura accessory.

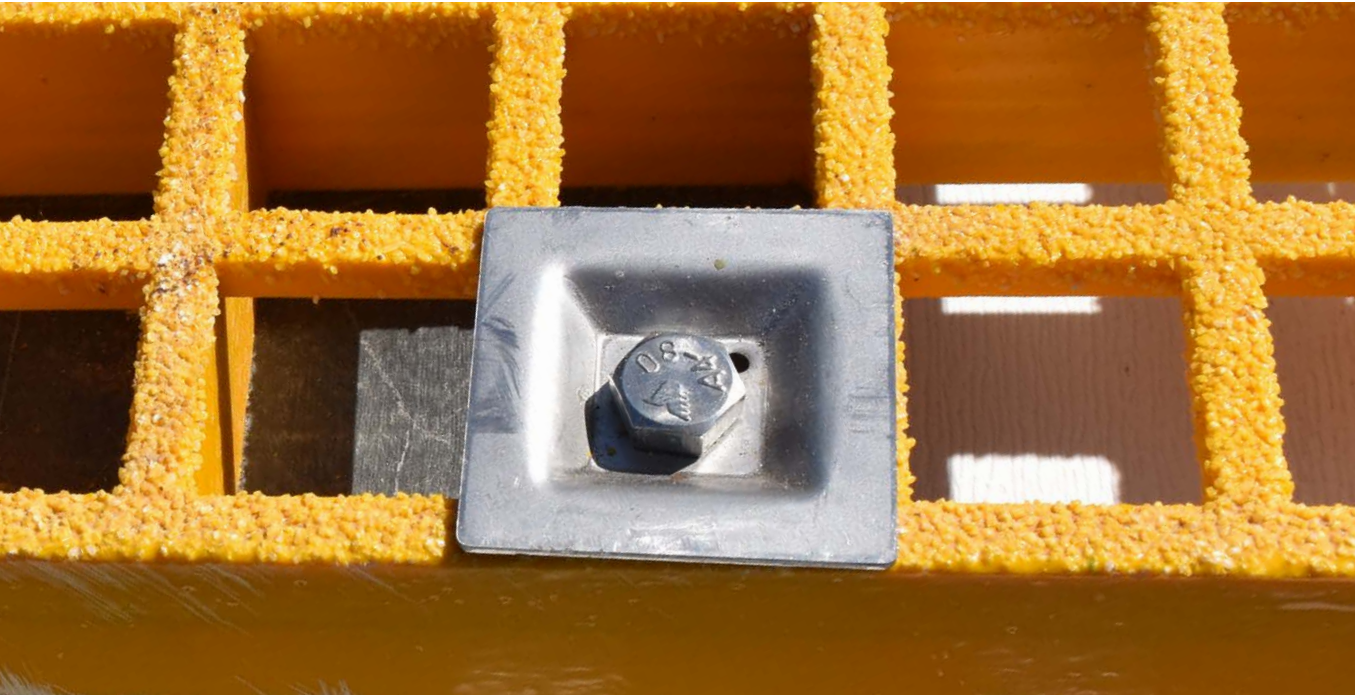
Metal & Polymer Support Fixings		
Anchor Type	Fixing Clip Suitability	Notes
Hex Bolt, Nut & Washer 	<ul style="list-style-type: none"> Shallow Recessed Collar Deep Recessed Collar M Clip Square Recessed Clip CAM Cover 	<ul style="list-style-type: none"> Access below is required for tightening the nut. Low cost fitting option to supports. Positive fix arrangement.
Countersunk Bolt, Nut & Washer 	<ul style="list-style-type: none"> Small Dome Washer Large Dome Washer Countersunk Panel Top (Some Dura Solid Top products only) CAM Cover 	<ul style="list-style-type: none"> Access below is required for tightening the nut. Low cost fitting option to supports. Positive fix arrangement.
Countersunk Self-Drilling Screws 	<ul style="list-style-type: none"> Small Dome Washer 	<ul style="list-style-type: none"> Only suit metal supports. Not recommended for continual removal. Ideal for permanent fixing. Can typically be fixed without access below. Various types are available to suit metal thickness.
Pan Self-Drilling Screws 	<ul style="list-style-type: none"> Large Dome Washer 	<ul style="list-style-type: none"> Only suit metal supports. Not recommended for continual removal. Ideal for permanent fixing. Can typically be fixed without access below. Various types are available to suit metal thickness.
Hex Self-Drilling Screws 	<ul style="list-style-type: none"> Extra Large Dome Washer 	<ul style="list-style-type: none"> Easiest screw to drill into steel. Not recommended for continual removal. Only suit metal supports. Ideal for permanent fixing. Can typically be fixed without access below. Various types are available to suit metal thickness.
Rivit Nut 	<ul style="list-style-type: none"> Small Dome Washer Large Dome Washer Shallow Recessed Collar Deep Recessed Collar M Clip Square Recessed Clip Countersunk Panel Top (Some Dura Solid Top products only) CAM Cover 	<ul style="list-style-type: none"> Ideal for fixing down covers when the panels need to be removable. Suits metal and polymer support. Requires specialist guns for installation. Available in a range of types to suit all types of metal and polymer thicknesses. Used with Hex, Countersunk or other bolt type.

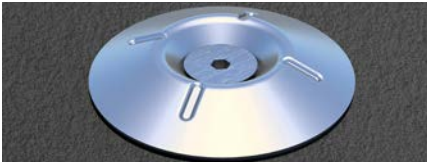

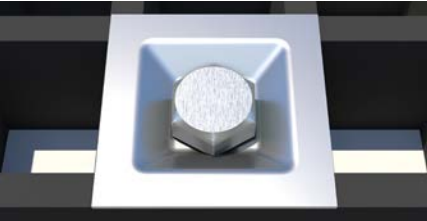
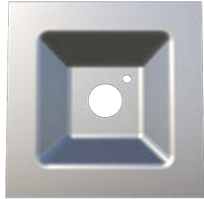







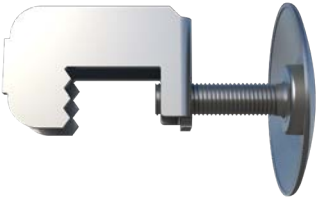
Fixings

We have a large range of fixings and accessories for our GRP product range available from stock. As well as GRP trough covers, our fixings are able to cater for a vast number of GRP Dura Grating applications, such as walkways, step overs, access ramps, footbridges and staircases.

Concrete Anchor Fixings		
Anchor Type	Fixing Clip Suitability	Notes
Throughbolt with Nut 	<ul style="list-style-type: none"> Shallow Recessed Collar Deep Recessed Collar CAM Cover 	<ul style="list-style-type: none"> Generally has quite high minimum edge distance, which can mean a wider rebate width is required than normal. Not the safest when panels are removed, as the anchors stay in position. Lowest cost anchor option.
Threaded Anchor with Bolt 	<ul style="list-style-type: none"> Small Dome Washer Large Dome Washer Shallow Recessed Collar Deep Recessed Collar M Clip Square Recessed Clip Countersunk Panel Top (Some Dura Solid Top products only) CAM Cover 	<ul style="list-style-type: none"> Varies in minimum edge distance, and allows for flush fit. Requires a setting tool. Safe when covers are removed, as this anchor has to be used with a bolt, which is the removable part.
Resin Anchor with Stud & Nut 	<ul style="list-style-type: none"> Shallow Recessed Collar Deep Recessed Collar CAM Cover 	<ul style="list-style-type: none"> Low edge distance. Requires chemical bond conditions. Not the safest when panels are removed, as the anchors stay in position. Used with Threaded Stud and Nut.
Resin Anchor with Thread 	<ul style="list-style-type: none"> Small Dome Washer Large Dome Washer Shallow Recessed Collar Deep Recessed Collar M Clip Square Recessed Clip Countersunk Panel Top (Some Dura Solid Top products only) CAM Cover 	<ul style="list-style-type: none"> Low edge distance. Requires chemical bond conditions. Safe when covers are removed, as this anchor has to be used with a bolt, which is the removable part. Used with Hex or Countersunk Bolt.

FX2080 Concrete Screws also available on request.



Dura Grating Fixings Clips		
Anchor Type	Fixing	Notes
Dome Washers 		<ul style="list-style-type: none"> Versatile fixing. Direct fix to substrate. Domed shape reduces trip hazard. Cost effective.
Square Recessed Clip 		<ul style="list-style-type: none"> Compatible with 26mm & 38mm d² Standard Mesh. Direct fix to substrate. Recessed design only 1.5mm proud. Square Recessed Clip for 50mm d² Standard Mesh. Small Square Recessed Clip only to be used for 35mm, 45mm and 55mm d² Mini Mesh with a countersunk bolt.
M Clips 		<ul style="list-style-type: none"> Compatible with 26mm & 38mm d² Standard Mesh. BFX01030 Shallow compatible with 17mm hole Mini Mesh. Direct fix to substrate. Recessed design only 1.5mm proud. M Clip for 35mm, 45mm and 55mm d² Mini Mesh available for use with socket cap head bolt or pan head socket screw.
Uni-Strut Clamps 		<ul style="list-style-type: none"> Ideal for panel joins. Friction fixing clamp. Used to reduce differential deflection. M8 Bolt Thread compatible. M8 Easyfix style Nut essential.
Channel Clamp 		<ul style="list-style-type: none"> Friction fixing clamp. Structural panel join. Used where direct substrate fitting with Bolt/Screw is not permitted. M8 Bolt Thread compatible. M8 Square Nut essential.
Jaw Clamp 		<ul style="list-style-type: none"> Friction fixing clamp. Used where direct substrate fitting with Bolt/Screw is not permitted. No need to tighten from underneath. M8 Bolt Thread compatible. M8 Square Nut essential. Suited for galvanised steel frames to avoid drilling through the framework. Fit J Clamp approx 20mm from the underside of the steel frame - do not fix the whole arm. Used in conjunction with large Dome Washers or Square Recess Clips.

Fixings Product Selector

The fixings product selector tables below allow you to easily see the most suitable fixings for your chosen GRP product. If you need further advice or support, please contact your Dura Composites representative on 01255 440 290. Please see page 24 for the images for the Fixings.

Open Mesh Fixing Clips

Dome Washers

	Standard						Mini				Solid			I & T Beam (10mm OH)		I & T Beam (23mm OH)		Flat Beam (10mm OH)			Flat Beam (23mm OH)			
	26	38	50	50 R	50HD	63HD	22	35	45	55	29	41	53	38	50	63	38	50	63	100	38	50	63	100
S	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✓	✓	✓	✗
L	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
XL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Square Recessed Clips

	Standard						Mini				Solid			I & T Beam (10mm OH)			I & T Beam (23mm OH)			Flat Beam (10mm OH)				Flat Beam (23mm OH)			
	26	38	50	50 R	50HD	63HD	22	35	45	55	29	41	53	38	50	63	38	50	63	38	50	63	100	38	50	63	100
S	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗

M Clips

	Standard						Mini				Solid			I & T Beam (10mm OH)			I & T Beam (23mm OH)			Flat Beam (10mm OH)				Flat Beam (23mm OH)			
	26	38	50	50 R	50HD	63HD	22	35	45	55	29	41	53	38	50	63	38	50	63	38	50	63	100	38	50	63	100
L	✓	✓	✓	✓	✓	✓	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Uni-Strut Clamps

	Standard						Mini				Solid			I & T Beam (10mm OH)			PI & T Beam (23mm OH)			Flat Beam (10mm OH)				Flat Beam (23mm OH)			
	26	38	50	50 R	50HD	63HD	22	35	45	55	29	41	53	38	50	63	38	50	63	38	50	63	100	38	50	63	100
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Channel Clamp

	Standard						Mini				Solid			I & T Beam (10mm OH)			I & T Beam (23mm OH)			Flat Beam (10mm OH)				Flat Beam (23mm OH)			
	26	38	50	50 R	50HD	63HD	22	35	45	55	29	41	53	38	50	63	38	50	63	38	50	63	100	38	50	63	100
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Jaw Clamp

	Standard						Mini				Solid			I & T Beam (10mm OH)			I & T Beam (23mm OH)			Flat Beam (10mm OH)				Flat Beam (23mm OH)			
	26	38	50	50 R	50HD	63HD	22	35	45	55	29	41	53	38	50	63	38	50	63	38	50	63	100	38	50	63	100
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Solid Top Fixing Clips

Dome Head Clips



	d² Solid Top				d² Slab			
	29	41	53	53 R	45	50	75	100
S	✓	✓	✓	✓	✓	✓	✓	✓
L	✓	✓	✓	✓	✓	✓	✓	✓
XL	✓	✓	✓	✓	✓	✓	✓	✓

Uni-Strut Clamps



d² Solid Top				d² Slab			
29	41	53	53 R	45	50	75	100
✓	✓	✓	✓	x	x	x	x

CAM Covers



d² Solid Top				d² Slab			
29	41	53	53 R	45	50	75	100
x	x	x	x	x	✓	✓	✓

Channel Clamp



d² Solid Top				d² Slab			
29	41	53	53 R	45	50	75	100
✓	✓	✓	✓	x	x	x	x

Deep Recessed Collar



d² Solid Top				d² Slab			
29	41	53	53 R	45	50	75	100
x	x	x	x	x	x	✓	✓

Jaw Clamp



d² Solid Top				d² Slab			
29	41	53	53 R	45	50	75	100
✓	✓	✓	✓	x	x	x	x

Shallow Recessed Collar



d² Solid Top				d² Slab			
29	41	53	53 R	45	50	75	100
✓	✓	✓	✓	x	✓	✓	✓

J Clamp



d² Solid Top				d² Slab			
29	41	53	53 R	45	50	75	100
✓	✓	✓	✓	✓	✓	✓	✓





Cover Loading Requirements

Getting the Right Product for Your Needs

When purchasing a trench cover for your Energy Production or Industrial facility, you should first consider your loading requirements to ensure that you select the most suitable and safest cover for the job.

Our comprehensive range of products cater for a diverse range of requirements, ensuring you don't have to compromise on your needs or budget by under or over-specifying. With an innovative design that can include manual lifting eyes or mechanical lifting arms, our trench cover lids can meet the needs for straight sections, curved sections, right angles and Ts.

Key Benefits

- Lighter weight versus concrete covers/lids means a reduction in transport, machinery, time and labour.
- GRP trench cover lids are suitable for two-person lift and install, which is compliant with manual handling regulations.
- Lids are available in a diverse range of open mesh and solid options to meet differing load requirements.
- GRP cover lids and concrete troughs available from a single source for convenience and time saving.

BS EN 124

BS EN 124-1:2015 is an important standard for anyone involved in the design, manufacture, or installation of access covers and gratings. It divides access covers and gully grates into a number of classes and categorises the various places where they may be installed from the least demanding to the most demanding environment. The standard contains sub-sections related to specific materials including EN 124-5 for gully tops and manhole tops made of composite materials. Find the most relevant classifications for trench cover projects below.



Group 1 - minimum Class A15
Access covers and gratings capable of withstanding a 15kN test load. For use in areas where only pedestrians have access.



Group 2 - minimum Class B125
Access covers and gratings capable of withstanding a 125kN test load. For use in pedestrian areas where only occasional vehicular access is likely.



Group 3 - minimum Class C250
Access covers and gratings capable of withstanding a 250kN test load. For use in industrial sites and areas with slow moving traffic.



Group 4 - minimum Class D400
Access covers and gratings capable of withstanding a 400kN test load. For use where cars and lorries have access, including carriageways and pedestrian areas. Units must be non-rocking or silent in operation.

Alternative Classifications:

An alternative standard is provided by the Fabricated Access Covers Trade Association (FACTA). While both FACTA and BS EN 124 govern the design and manufacture of access covers and gratings, they differ in their approach. BS EN 124 calculates the dynamic vehicle loading for fast moving traffic, to ensure that material types are rated against the highest possible installation requirements, whilst FACTA focuses its calculations on fabricated covers which are normally restricted to use in 20mph speed limit areas. For this reason, BS EN 124 and FACTA classifications cannot be directly compared with each other.

Our Testing Capability

Unlike any other manufacturer, Dura Composites has invested extensively in testing in order to best understand our products at (or near to) their performance capacity, so you can ensure that you specify the correct product for your project load and span requirements. We have completed extensive testing using UKAS accredited laboratories to comply with BS EN 124 as well as completing supplementary in-house testing, using our fully calibrated test facility.

We are able to offer specifiers, users, contractors and merchants comprehensive technical support from our experienced sales and structural engineering experts. If you have any doubt about the potential loads your trench cover may need to withstand, you should always opt for a higher rating. It is far better to over-estimate than under-estimate the loading requirement.



Product	FACTA								EN124			
	A	AA	AAA	B	C	D	E	F	A	B	C	D
d² Dura Grating												
26mm Standard Mesh	600	300							600			
38mm Standard Mesh	1150	600	400						1150			
50mm Standard Mesh	1500	1150	700						1500			
50mm Rectangular Standard Mesh	1600	1300	700	730					1700	630		
50mm HD Standard Mesh	2000	1500	1150	900	730				2000	730		
63mm HD Standard Mesh	2100	1600	1300	1000	900				2000	900		
23mm Mini Mesh	500								500			
35mm Mini Mesh	800								800			
45mm Mini Mesh	1150	600	300						1150			
55mm Mini Mesh	1500	1150	600						1500			
23mm Micro Mesh	500								500			
d² Dura Grating Solid Top												
29mm Solid Top	1150	600	300						1150			
41mm Solid Top	1800	1500	1150						1800			
53mm Solid Top	1900	1700	1150						1900			
53mm Rectangular Solid Top	1600	1300	700	730					1700	630		
53mm MD Solid Top	2000	1500	1150	900	730				2000	730		
d² Dura Pultruded Grating												
38mm I-Beam - 10mm Open Hole	1700	1300							1300			
38mm I-Beam - 23mm Open Hole	1600	1150							1600			
50mm T-Beam - 10mm Open Hole	1800	1400							1800			
50mm T-Beam - 23mm Open Hole	1700	1250							1700			
63mm T-Beam - 10mm Open Hole	1900	1500							1900			
63mm T-Beam - 23mm Open Hole	1800	1400							1800			
38mm Flat Beam - 10mm Open Hole	2100	1600	1300	400	600				2000	900		
38mm Flat Beam - 23mm Open Hole	2000	1500	1150						2000	730		
50mm Flat Beam - 10mm Open Hole	2000	1800	1500	1500	1200				2000	1200		
50mm Flat Beam - 23mm Open Hole	1800	1600	1300	1200	1000				1800	1000		
63mm Flat Beam - 10mm Open Hole	2500	2300	2000	1500	900	1200	600		2500	1200	600	
63mm Flat Beam - 23mm Open Hole	2300	2000	1700	1600	1200					1200	600	
100mm Flat Beam - 10mm Open Hole	4000	3200	3100	3000	2700	1500	1380	700	4000	3000	1380	700
100mm Flat Beam - 23mm Open Hole	3600	2800	3200	2800	1380	1200	700		3600	2500	700	
d² Dura Slab												
Dura Slab Type 45mm	2000	1500	1000						2000			
Dura Slab Type 50mm	2000	1800	1500	1200	1200				2000	1200		
Dura Slab Type 100mm EasyLift	3500	2300	2000	2500					3000	1900		
Dura Slab Type 75mm	2500	2300	2000	2000	1500	1200			3000	1900	1200	
Dura Slab Type 100mm	4000	3200	3100	3000	2700	2300	700		4000	3000	2300	600

All clear spans are shown in millimetres

Key:

Estimate

Live Test



How to Correctly Specify GRP

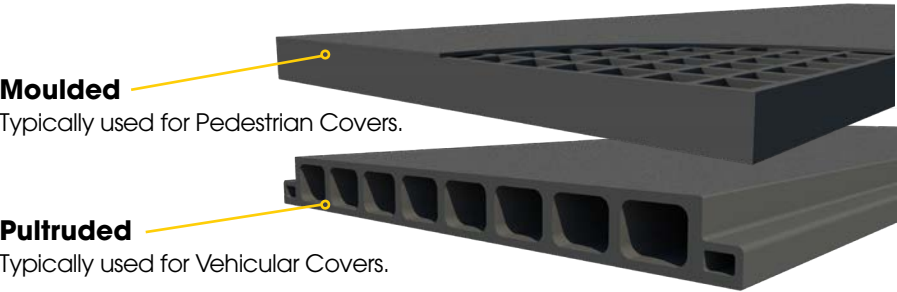
Our aim is to provide accurate information to architects, engineers, specifiers, and owners to assist you in the planning and preparation of specifications and designs. We also offer technical support regarding the selection and installation of GRP Trough and Trench Covers, including site visits where appropriate.

When purchasing covers, ensure that the full range of duties to which the item may be exposed are considered at the design stage to ensure correct performance. When installing, ensure the manufacturer’s recommended technique is adhered to at all times.

Recap of the Advantages of GRP

- Less maintenance than conventional materials offering reduced running costs over the life of the item.
- GRP is lightweight when compared to other materials, which reduces its installation costs and, in many cases, the cost of supporting structures.

Our GRP Trough and Trench Covers are available in both moulded and pultruded formats (dependent on the load and span required for the application).



Comparing the Cover Weights:

The comparison table below shows the huge variance in cover weights between Dura and the next most popular GRP cover supplier* and highlights that the alternative supplier has 6 out of 8 cover scenarios which fall outside of the cover weight recommended by National Grid.

Trough	Load	Dura Cover Size	Other Cover Size	Clear Span	Dura Cover (DC)	Other Suppliers (OS)	Comments
600	B125	734x500x50	734x500x50	630	13kg	18kg	Both within limit
	C250	734x500x75	734x500x100		29kg	35kg	OS - Over limit
750	B125	929x500x50	929x500x50	830	16kg	22kg	Both within limit
	C250	929x600x75	929x500x100		36kg	44kg	Both over limit, DC lighter
1000	B125	1204x475x50	1204x500x100	1105	21kg	57kg	OS - Over limit
	C250	1204x600x75	1204x500x150		47kg	85kg	Both over limit, DC lighter
1250	B125	1469x475x50	1479x500x150	1330	26kg	104kg	OS - Over limit
	C250	1479x600x75	1479x500x150		58kg	105kg	Both over limit, DC lighter

* Further details of competitive supplier provided on request.

Four of the eight cover comparisons above also show a significant weight difference, sometimes of more than 50%! Heavier covers mean longer install times and more labour, there is also a risk of personnel lifting beyond the recommended limits. Heavy covers can also be difficult to off-load and manoeuvre around site which can lead to delays to project delivery times.

Our covers can be supplied with mechanical lifting aids to keep labour costs to a minimum if regular access is required to the trench or trough, but this is not an option usually offered by competitors, so do be sure to discuss with us at an early stage of your project enquiry.

What to Avoid

We are always happy to advise or conduct a site visit to assist if you are re-evaluating your chosen supplier. Here are some things to look out for and avoid when it comes to GRP covers.

1: Bonded Covers

Some other suppliers only utilise moulded GRP technology for their trench covers and therefore must bond pieces together on top of one another to achieve the required loads and spans for vehicular rated covers.

We do **NOT** supply bonded covers. Here is why:

- The standard for Trench Covers (BS EN 124-5 2015) stipulates that covers are produced using controlled automatic processes to a single cell structure. Manually bonded and stacked covers do not comply.
- Manual bonding of covers is subject to human error. Bond preparation is key to secure adhesion therefore covers are prone to failure if proper preparation is not followed.
- Bonded covers are difficult to cut and require non-standard disc cutting machines. They are often not batch tested for quality.



Avoid Double Bonded Covers



Avoid Triple Bonded Covers

2: Poor Cutting Equipment

Although the cutting of GRP is generally acknowledged to be straight-forward, appropriate cutting equipment is required. Suppliers who do not fabricate covers to suit the pre-cast/in-situ transition pieces should be avoided.

Here, a competitor’s product has been incorrectly cut on site without the correct equipment, resulting in an extremely poor finish and reducing the cover’s long term performance.

On-site cover cutting can be avoided by ensuring that required cuts are completed off site by a GRP Fabrication specialist such as Dura Composites.



Incorrectly Cut Cover

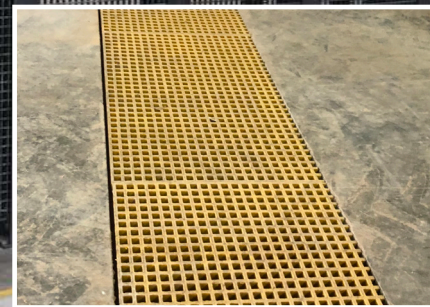


Pre-Cut Cover

3: Errors in Supply Phasing

Choosing a supplier who lacks knowledge and experience of the proper phasing required for a trench cover project will cause site difficulties and extra cost. Our method is to supply the straight cover units first and then once these are installed the remaining openings for the transition pieces are measured. We then supply covers already fabricated to size, to account for site and product tolerances and to include compulsory lifting points.





Dura Pultruded Grating's innovative design offers clear views of cabling in the trenches below and great efficiency for high loads at large spans.

We are your Unique Start-to-Finish Single Source Supply Partner

Why were our products so right for this project?

- Helped the client achieve vast savings on the materials, programme and installation cost versus a hybrid steel-concrete trench cover solution.
- The use of Dura Pultruded Grating offered superb efficiency for high loads at large spans. When used in conjunction with the other trench cover options in the Dura Composites portfolio, we were easily able to meet the varied required load ratings of 0.65t, 6.9t, 5t, 10t & 12.5t of the different trenches.
- Multiple Dura products were able to integrate seamlessly within the trench run to meet the client's bespoke project requirements.
- Covers could be fitted with Dura designed mechanical lift points to enable two people to remove the covers instead of four - to ensure efficient future inspection, repairs or cable replacement.
- The gritted anti-slip surface is safe for all converter station personnel to walk on and help improve overall site safety.

GRP is an appropriate material for electrical applications in demanding environments as it is non-conductive, non-sparking and virtually maintenance free. Dura Composites provided wide-ranging project support and was able to adapt its products to account for the design changes needed for the cut outs.



Case Study

Dura Grating, Pultruded Grating & Dura Slab Trench Covers Converter Station

Chilling, Hampshire, United Kingdom.

The IFA2 project aims to connect the electricity systems of Great Britain and France using high voltage subsea cables and will be capable of exporting or importing 1000MW of power between the UK and France, enough to power up to 1 million homes.

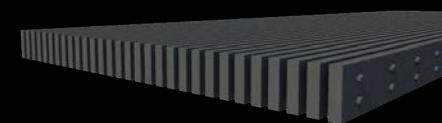
Contractor Morgan Sindall was appointed to design, build and commission the new converter station and chose to work with Dura Composites to provide safe and accessible composite covers for multiple utility trenches.

Dura Composites specialise in the design, supply, fabrication and installation of advanced Glass Reinforced Polymer (GRP) components and have a wealth of

experience in the Power & Energy Sector.

In this project, our **Dura Grating** and **Dura Pultruded Grating** proved the ideal trench cover alternative for heavy steel and concrete. Our ingenious mechanical lifting system eliminated the need for heavy plant machinery whilst ensuring accessible inspection at all times.

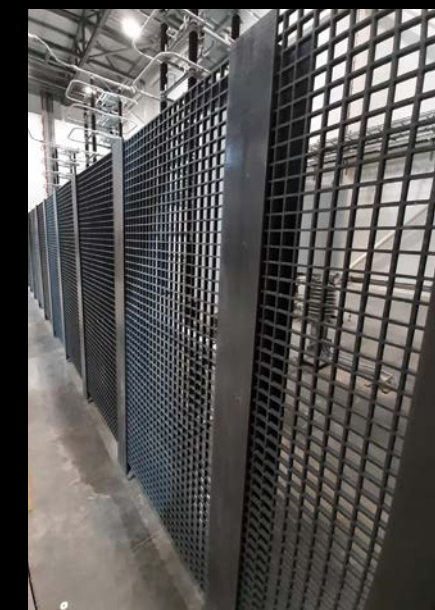
With a large variety of trenches which varied in load, span and ventilation requirements, we were able to provide extensive design support to ensure that the resulting covers met the required load ratings. A combination of moulded grating, pultruded grating and pultruded slab products were used, often within the same trench run.



Bespoke colour coding was employed to visualise the different load ratings - and all design work was all backed up by our unrivalled real-world test data.

For help and technical support with your substation or converter station project please call Joe Hunt on +44 1255 440290 or email info@duracomposites.com.

Other GRP solutions employed at this converter station project include:



Fencing:
Internal utility safety fencing for the AC/DC hall areas.



Stairs:
Plant access up & over stairs to bund and building areas.



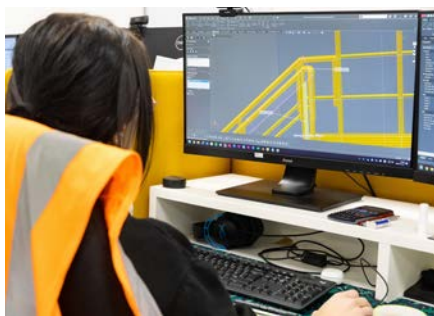
Handrailing:
Ramp building access with key clamp handrailing.

Value Added Services

CAD

Our Computer Aided Design (CAD) team use a variety of software including Inventor, Solidworks, Revit, 3Ds Max, Autocad and Navisworks to turn your ideas into reality. Working closely with the fabrication team, they can analyse, design and create bespoke fabrications tailored to your needs. Throughout the project they will be on hand to support you as you need them.

Using our CAD team can highlight any mistakes or clashes early on in the design phase and eliminate them before moving to the fabrication or installation phase.



CAE

Our computer-aided engineering services utilise a range of analysis tools to simulate the effects of different conditions on our composite products and structures using multiple simulated loads and constraints.

Our CAE tools are also used to analyse and optimise the designs created within CAD software.



FEA

If you need structural efficiency gains in your designs we can make it happen using verification and analysis tools such as a Finite Element Analysis (FEA). Our in-house Structural Engineering Team can support you with design optimisation and failure analysis to analyse the strength of complex structures and systems, determine individual component behaviour, and accurately predict how sections will react under structural and thermal loads.

3D Laser Scanning

Our 3D laser scanning service uses the latest in area scanning technologies to create an exact 3D replica of your project site or premises. This can then be utilised by either Dura Composites' in-house designers to recreate your site specific requirements, or passed to your own internal team.



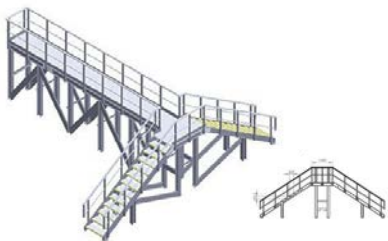
Site Surveys

Our experienced team are available to attend site surveys to assess the detailed requirements of your fabrication project and to supplement and verify the site information provided as part of the initial client brief. Initial site surveys for particularly tricky or challenging locations can be supplemented with our 3D laser scanning service to create exact measurements.



Fabrication Drawings

To turn designs into reality once the design is approved, we produce a set of detailed fabrication drawings. These ensure that each component part is assembled efficiently, cost effectively and to the required performance criteria.



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

Dura Composites is one of the world's leading suppliers of composite materials.

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 Awards 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:





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