Dura Composites is a leading supplier and installer of bespoke first-class safety, riser solutions on new builds or refurbishments. Our services include:

- Purpose-designed Dura Riser GRP Floor Grating
- A unique steel perimeter support system (Patent Pending)
- Full design capabilities with PI insurance for design
- Installation Service by Qualified Professionals
- Site Inspections & Service Cut Outs
- In-house Structural Engineer and CAD team
- Consultation and project advice

Unlocking the Power of Composites
For the Construction Industry

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The Ultimate Safety Solution for Service Riser and Lift Shaft Voids

Riser voids (the openings which are left to accommodate mechanical and electrical services on multiple floors of a building) can provide real safety challenges for contractors.

In 2017-2018 fatal injuries to workers due to falls from height increased by 26% since the previous year and accounted for the main cause of fatalities for workers in Great Britain.

Data source RIDDOR (Health and Safety Executive).

Something as innocuous as a tape measure dropped from height in a riser shaft can tragically kill, and statistics show that a 500g object dropped from 15m has the same impact energy as a 75kg washing machine.

Dura Composites offers a comprehensive Riser supply and install service utilising our purpose-designed Dura Riser GRP Grating products and galvanised steel framework to help reduce the risk of death or serious injury on construction sites.

Our Dura Riser solutions can eliminate the need for scaffold handrails, netting or timber shuttering and can be ‘Post-fixed’ or ‘Cast-in’ to concrete as a fully structural solution. We offer GRP grating that meets the requirements of the 20mm Ball Falling Test, and versions with a completely solid surface for maximum debris defence.

Did You Know?

Dura Composites’ highly experienced team offer a tried and tested one-stop-shop for Riser safety - including, design, supply & install.

Understanding Composites: Safer at the point of need

Although the word “composite” may sound technical, it’s really just an umbrella term to describe materials that have been put together to make something that is superior than the original form in some way - making it stronger, easier to handle or corrosion resistant for example.

Composites that you will have heard of, but perhaps didn’t realise were composites include steel (commonly known as an alloy), which is made by combining iron and carbon. It has been in use as a building material since the late 1800s and first became popular for building skyscrapers thanks to its strength and durability.

One of the most popular emerging composites of the past 40 years has been Glass Reinforced Polymer (or GRP), which is a resin-based composite that’s reinforced with a glass fibre, and is sometimes also known as fibreglass. The combination of the high-strength glass fibre and highly-resilient plastic ensures that it’s strong, lightweight and both chemical and corrosion resistant. It can also be produced with phenolic properties for use in high risk areas and does not conduct electricity or necessitate the use of hot works permits – making it suitable for a vast range of construction applications.

Our Dura Riser d2 grating boasts a bonded coating of refined quartz grit which greatly enhances the anti-slip properties & durability of the product and offers incredible slip-resistance in all directions and conditions.

The result of 23 years experience in the composites marketplace, Dura Composites Riser products are available exclusively from us, and can be installed by our highly qualified team.
Defining Your Riser Strategy

As a construction project progresses from a client’s statement of need, through design and construction and into operation and use, project teams seek increased certainty regarding criteria such as layout, fit, cost and performance.

This means that building services design must be integrated into the overall building design from an early stage, particularly on complex building projects.

The detection of clashes between Mechanical and Electrical services and other building components can be a significant cause of delays and variations on site, not just in terms of the physical placement of the services themselves, but also in terms of ensuring safe access to allow the M&E contractor to connect those services.

This is the reason that you’ll often hear our competitors championing how their solutions force M&E design to early completion as they simply aren’t flexible enough to be modified on site as requirements change. But in truth, even the best planned projects are subject to last minute M&E changes, and when it comes to making your riser voids secure, you need a solution that can accommodate these changes on site without the fear of ballooning cost.

Our galvanised steel framework and GRP grating covers offer the perfect combination of strength, safety and adaptability on site. Unlike competitor solutions, there is no need to cut service holes ahead of time or to crane heavy steel framework into position and the system is infinitely adjustable to allow for millimetre by millimetre changes. All components of the Dura Riser system are also suited to manual handling and can be adapted for use with unusual substrates such as hollow or clay pot.

Dura’s system is ideally suited to modular construction and enables safety requirements to be more easily met and policed. Not only is there a reduced risk of trips, slips and falls - particularly as work at height is reduced - but there is also a reduction in on-site activity.

Our standard Dura Riser steel framework comprises of four innovative patent pending components that can be used in a wide range of scenarios for risers with a span of up to 3 metres. We offer both a supply-only and a fully-installed solution. Where service penetrations are required, additional supports may be needed, and our experienced team can also create and install bespoke solutions for complex riser voids. No hot works permits are required for cutting service holes on site, thanks to the non-conductive and non-sparking properties of the Dura Riser grating.

Whilst no standard exists specifically for riser void protection, our Dura Riser system is designed to comply with the rigorous standards set out in BS 4592-0:2006 + A1:2012. Service cut outs can be made “just in time” to minimise the risk for on-site personnel, and our mini mesh gratings comply with the European Ball Falling test requirements.

Dura Riser Grating features our best ever gritted surface which is tested to over 1 million footfalls (in accordance with BS 7976-2:2002+A1:2013) and outperforms all other products in the market when it comes to durability and anti-slip properties.

Why are steel supports plus GRP grating the perfect combination?

With its innovative Dura Riser product range, Dura Composites has created the perfect marriage between a strong steel framework system and a safe and durable GRP floor covering. Our patent pending Dura Riser system provides collective protection which actually eliminates the risk of falling from height because the void is covered at the exact moment of installation and services can be cut in situ without the need for costly removal of cover plates or adjustment to the supports.

www.duracomposites.com

The Dura Composites Riser Strategy is simple:

1. Design for all stages of the building lifecycle

Our galvanised steel framework and GRP grating covers offer the perfect combination of strength, safety and adaptability on site. Unlike competitor solutions, there is no need to cut service holes ahead of time or to crane heavy steel framework into position and the system is infinitely adjustable to allow for millimetre by millimetre changes. All components of the Dura Riser system are also suited to manual handling and can be adapted for use with unusual substrates such as hollow or clay pot.

Dura’s system is ideally suited to modular construction and enables safety requirements to be more easily met and policed. Not only is there a reduced risk of trips, slips and falls – particularly as work at height is reduced – but there is also a reduction in on-site activity.

2. Reduce the risk wherever possible

Unlike some of our competitors, we do not recommend the use of GRP supports as there is a risk that these can be accidentally cut during the fitting of services, causing the riser to fail. Our Dura Riser steel framework and Dura Riser GRP grating are the perfect combination as they are lightweight, strong, safe and easy to adapt for M&E services.

3. Keep it simple

Our standard Dura Riser steel framework comprises of four innovative patent pending components that can be used in a wide range of scenarios for risers with a span of up to 3 metres. We offer both a supply-only and a fully-installed solution. Where service penetrations are required, additional supports may be needed, and our experienced team can also create and install bespoke solutions for complex riser voids. No hot works permits are required for cutting service holes on site, thanks to the non-conductive and non-sparking properties of the Dura Riser grating.

4. Safer at the point of need - for less money

Dura’s Riser solutions are a safer option than corrugated plastic, plywood and netting and prove more cost-effective in the long run as they offer much needed flexibility to construction teams. There’s no need to remove and replace heavy cover plates, and no significant contribution to construction waste. Using Dura Riser 41mm Solid Top grating eliminates the need for additional coverings such a corrugated plastic, netting or plywood, saving even more cost.

www.duracomposites.com
Riser Void Framework Solutions

Patent Pending Dura Riser Framework:

Dura Composites’ Post-Fix galvanised steel framework system is ideal for use in situations where the riser void covering needs to be fixed to an existing structure such as a reinforced concrete slab or core wall. Designed to work seamlessly with our Dura Riser GRP flooring products, the Patent Pending framework is supplied in sections for easy handling on site and can be assembled by our highly qualified install team for immediate protection. Supports can be added retrospectively to suit the changing requirements of the Mechanical and Engineering Design and the perforation within the framework means that it’s more likely that rebar will be avoided during installation.

Our Dura Riser framework and grating solutions are installed as part of the ‘second fix’ processes. As experts in innovation our testing and experience has led us to develop a patent pending solution that’s unique in the marketplace. The perforations in the steel allow for easy drilling and help to avoid rebar within the concrete during installation whilst retaining strength.

For scenarios where major weight savings need to be made or a non-conductive framework material is mandatory, Dura Composites’ GRP angle and profile may be suitable for use in place of the Dura Riser framework. Your Dura representative would be happy to advise on your specific site conditions.

Our Dura Riser framework is now also available featuring a breakthrough precoated steel for enhanced protection. The specific composition of the coating (3% Mg and 3.5% Al) is crucial as it leads to the formation of a very dense, stable, and durable layer of protection. The compact layer acts as a barrier to corrosion, preventing the underlying steel from coming into contact with the ambient environment. The result is highly effective corrosion protection, even in the harshest conditions. Dura Riser precoated steel is also able to “self-heal” on cut edges, where corrosion typically begins. This “self-healing” property ensures it performs at least three times better than normal galvanizing products.

Dura Riser precoated steel provides the high level corrosion resistance of stainless and aluminium at a significantly lower cost. It’s extended durability, combined with the excellent lifecycle of Dura Grating as a riser void covering also results in reduced maintenance which saves money over the life of the project. It is also 100% recyclable and does not contain any harmful elements. It is REACH compliant and an environmental product declaration (EPD) is also available on request. For more information on the specific properties of the precoating, please contact your Dura Composites representative.

Making a service riser secure depends on multiple variables such as span, load & environment.

Dura Composites can help support you at every stage of your construction project.
The Construction industry’s strategy (Construction 2025 published by the BIS) set the goal of reducing the time from inception to completion of a project by 50% and reducing costs by a third. This will require a much greater degree of off-site manufacturing in factory environments and the reduction of labour.

The Dura Riser Box can be delivered flat-packed for assembly on-site, or completely pre-built for lifting into place with maximum speed and minimum risk. Opting for pre-built units can help on projects with shorter construction schedules where safety, quality, time and cost parameters still need to be met.

**Key Benefits of Pre-Assembled Units:**
- Quality Checked product delivered ready to install for peace of mind
- Improvements in speed of installation
- Increased efficiency
- Improvements to systems/processes on-site
- Removes element of risk during assembly (one less operation on site)
- Reduced material wastage

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**d² Dura Grating Products**

Our innovative d² grating products are suited to every industry. Each variant is compliant with British Standards and offers superb efficiencies versus traditional materials.

<table>
<thead>
<tr>
<th>d² Dura Grating Standard Mesh</th>
<th>d² Dura Grating Mini Mesh</th>
<th>d² Dura Grating Solid Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>26mm, 38mm, 50mm</td>
<td>22mm, 35mm, 45mm, 55mm</td>
<td>29mm, 41mm, 53mm</td>
</tr>
<tr>
<td>Standard Mesh</td>
<td>Mini Mesh</td>
<td>Solid Top</td>
</tr>
</tbody>
</table>

**d² Dura Grating Standard Mesh**

- It has several open hole sizes depending on panel thickness and is our most cost-effective open mesh flooring solution.
- It is available in a 26mm, 38mm or 50mm thickness in Dark Grey, Yellow and Green and provides excellent bidirectional mechanical properties.
- As with all our gratings, it can be supplied with a full range of galvanised steel clips, clamps and hold down fixings to suit all situations.

*Patent Pending Patent Application No: GB 19 04928.7*

**d² Dura Grating Mini Mesh**

- Has all the benefits of our d² Standard Mesh grating but with a smaller open mesh area depending on panel thickness.
- The smaller holes of this product prevent objects such as screws, nuts and bolts from falling through, and the aperture sizes comply with BS 4592 and the European 20mm Ball Falling Test. The unique patent pending design allows for improved visual inspection of the substructure below.

*Patent Pending Patent Application No: GB 19 03941.1*

**d² Dura Grating Solid Top**

- It is a great choice for situations where no light transmittance, drainage or visual inspection of the area underneath the grating is required.
- The gritted, anti-slip properties and up-rated surface of d² Dura Grating Solid Top provides higher opacity values than open mesh grating and the solid surface prevents all objects and debris from falling through. Available 29mm, 41mm and 53mm thickness in Dark Grey only.
- Other colours available by special order.

*Patent Pending Patent Application No GB 19 04928.7*

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**d² Dura Grating**

- Suits MODULAR construction
- Suits Offsite & Modular Construction
- Suited to Offsite & Modular Construction
- Meets 20mm Ball Test
- Suits All Footwear
- Good Ventilation
- Lowest Weight
- Lowest Cost
- Max Load Bearing Strength
- Max Debris Defence
- Suits All Footwear

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32mm, 31mm & 28mm holes

17mm & 19.5mm holes

Solid surface
**d² Dura Grating**

**Product Information**

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.

<table>
<thead>
<tr>
<th>Product Range</th>
<th>Depth (mm)</th>
<th>Max Span 1.5kn Point Load @ 1% deflection</th>
<th>Max Span 1.5kn Point Load @ 0.5% deflection</th>
<th>Max Span Skin Uniformly Distributed Load (UDL) @ 1% deflection</th>
<th>Max Span Skin Uniformly Distributed Load (UDL) @ 0.5% deflection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>26mm d²</td>
<td>860mm</td>
<td>500mm</td>
<td>690mm</td>
<td>510mm</td>
</tr>
<tr>
<td></td>
<td>38mm d²</td>
<td>2500mm</td>
<td>880mm</td>
<td>1020mm</td>
<td>780mm</td>
</tr>
<tr>
<td></td>
<td>50mm d²</td>
<td>2770mm</td>
<td>1800mm</td>
<td>1270mm</td>
<td>970mm</td>
</tr>
<tr>
<td>Mini Mesh</td>
<td>22mm d²</td>
<td>690mm</td>
<td>450mm</td>
<td>660mm</td>
<td>450mm</td>
</tr>
<tr>
<td></td>
<td>35mm d²</td>
<td>1590mm</td>
<td>870mm</td>
<td>900mm</td>
<td>720mm</td>
</tr>
<tr>
<td></td>
<td>45mm d²</td>
<td>2210mm</td>
<td>1350mm</td>
<td>1170mm</td>
<td>860mm</td>
</tr>
<tr>
<td></td>
<td>55mm d²</td>
<td>2500mm</td>
<td>2200mm</td>
<td>1470mm</td>
<td>1110mm</td>
</tr>
<tr>
<td>Solid Top</td>
<td>25mm d²</td>
<td>1490mm</td>
<td>830mm</td>
<td>910mm</td>
<td>700mm</td>
</tr>
<tr>
<td></td>
<td>45mm d²</td>
<td>2100mm</td>
<td>880mm</td>
<td>910mm</td>
<td>700mm</td>
</tr>
<tr>
<td></td>
<td>53mm d²</td>
<td>Full Panel</td>
<td>2600mm</td>
<td>1640mm</td>
<td>1240mm</td>
</tr>
</tbody>
</table>

**Maximum Spans for Common Load Criteria**

Priced based on Dura Composites UK list prices, as at September 2020 and are subject to change.

**Outstanding performance-to-weight ratios deliver exceptional value for money**
Load and Deflection Values By Span

Determining the correct load rating for your GRP flooring is dependent on the intended use and types of equipment placed on it.

A Point Load is any static load considered to act over a small or concentrated area when compared to the extent of the surface to which the load is applied. It is sometimes referred to as Line Load.

A Uniformly Distributed Load or UDL is one where the load is considered evenly distributed across a defined area.

Please find below tables showing the deflection values assuming a 0.5% (L/200) criteria for d² grating products. Green means that the product meets the 0.5% criteria, amber means it does not. For more details on other d² products or to use the Dura Composites Online Product Selector, consult your Dura Composites representative for details.

### Standard Mesh

#### d² Dura Grating 26mm Standard Mesh

<table>
<thead>
<tr>
<th>Post Load (kN/m²)</th>
<th>Clear Span</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5% / L/200</td>
<td>500mm 600mm 700mm 800mm 900mm 1000mm 1100mm 1200mm 1300mm 1400mm 1500mm</td>
</tr>
<tr>
<td>0.5</td>
<td>1.0 1.2 1.3 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4</td>
</tr>
<tr>
<td>1.0</td>
<td>- - - - - - - - - - -</td>
</tr>
<tr>
<td>1.5</td>
<td>- - - - - - - - - - -</td>
</tr>
<tr>
<td>2.5</td>
<td>- - - - - - - - - - -</td>
</tr>
</tbody>
</table>

**UDL (kN/m²) at 0.5% / L/200**

| 0.5 | 0.6 | 0.7 | 0.9 | - | - | - | - | - | - | - |

### Mini Mesh

#### d² Dura Grating 22mm Mini Mesh

<table>
<thead>
<tr>
<th>Post Load (kN/m²)</th>
<th>Clear Span</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5% / L/200</td>
<td>500mm 600mm 700mm 800mm 900mm 1000mm 1100mm 1200mm 1300mm 1400mm 1500mm</td>
</tr>
<tr>
<td>0.5</td>
<td>1.5 1.7 1.9 2.1 2.3 2.5 2.7 2.9 3.1 3.3 3.5</td>
</tr>
<tr>
<td>1.0</td>
<td>- - - - - - - - - - -</td>
</tr>
<tr>
<td>1.5</td>
<td>- - - - - - - - - - -</td>
</tr>
<tr>
<td>2.5</td>
<td>- - - - - - - - - - -</td>
</tr>
</tbody>
</table>

**UDL (kN/m²) at 0.5% / L/200**

| 0.5 | 0.6 | 0.7 | 0.9 | - | - | - | - | - | - | - |

#### d² Dura Grating 35mm Mini Mesh

<table>
<thead>
<tr>
<th>Post Load (kN/m²)</th>
<th>Clear Span</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5% / L/200</td>
<td>500mm 600mm 700mm 800mm 900mm 1000mm 1100mm 1200mm 1300mm 1400mm 1500mm</td>
</tr>
<tr>
<td>0.5</td>
<td>2.1 2.3 2.6 2.8 3.1 3.3 3.5 3.7 3.9 4.1 4.3</td>
</tr>
<tr>
<td>1.0</td>
<td>- - - - - - - - - - -</td>
</tr>
<tr>
<td>1.5</td>
<td>- - - - - - - - - - -</td>
</tr>
<tr>
<td>2.5</td>
<td>- - - - - - - - - - -</td>
</tr>
</tbody>
</table>

**UDL (kN/m²) at 0.5% / L/200**

| 0.5 | 0.6 | 0.7 | 0.9 | - | - | - | - | - | - | - |

#### d² Dura Grating 45mm Mini Mesh

<table>
<thead>
<tr>
<th>Post Load (kN/m²)</th>
<th>Clear Span</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5% / L/200</td>
<td>500mm 600mm 700mm 800mm 900mm 1000mm 1100mm 1200mm 1300mm 1400mm 1500mm</td>
</tr>
<tr>
<td>0.5</td>
<td>3.1 3.3 3.5 3.7 3.9 4.1 4.3 4.5 4.7 4.9 5.1</td>
</tr>
<tr>
<td>1.0</td>
<td>- - - - - - - - - - -</td>
</tr>
<tr>
<td>1.5</td>
<td>- - - - - - - - - - -</td>
</tr>
<tr>
<td>2.5</td>
<td>- - - - - - - - - - -</td>
</tr>
</tbody>
</table>

**UDL (kN/m²) at 0.5% / L/200**

| 0.5 | 0.6 | 0.7 | 0.9 | - | - | - | - | - | - | - |

#### d² Dura Grating 55mm Mini Mesh

<table>
<thead>
<tr>
<th>Post Load (kN/m²)</th>
<th>Clear Span</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5% / L/200</td>
<td>500mm 600mm 700mm 800mm 900mm 1000mm 1100mm 1200mm 1300mm 1400mm 1500mm</td>
</tr>
<tr>
<td>0.5</td>
<td>4.1 4.3 4.5 4.7 4.9 5.1 5.3 5.5 5.7 5.9 6.1</td>
</tr>
<tr>
<td>1.0</td>
<td>- - - - - - - - - - -</td>
</tr>
<tr>
<td>1.5</td>
<td>- - - - - - - - - - -</td>
</tr>
<tr>
<td>2.5</td>
<td>- - - - - - - - - - -</td>
</tr>
</tbody>
</table>

**UDL (kN/m²) at 0.5% / L/200**

| 0.5 | 0.6 | 0.7 | 0.9 | - | - | - | - | - | - | - |

KEY:

- Deflects less than 0.5%  
- Deflects more than 0.5%  
- Beyond safety factor

**Note:**

- Deflections less than 0.5% are generally considered acceptable and do not typically require corrective action.
- Deflections between 0.5% and 2% are considered to be acceptable, but may require additional monitoring for safety.
- Deflections greater than 2% are considered to be unacceptable and may require corrective action, such as additional support or replacement of the grating.
- Deflections greater than 5% are considered to be unacceptable and may require immediate corrective action, such as replacement of the grating.

For more detailed information, consult the Dura Composites Online Product Selector or contact your representative.
### Solid Top

**d² Dura Grating 29mm Solid Top**

<table>
<thead>
<tr>
<th>Clear Span</th>
<th>UDL (kN/m²) at 0.5% or L/200</th>
</tr>
</thead>
<tbody>
<tr>
<td>100mm</td>
<td>5.0</td>
</tr>
<tr>
<td>200mm</td>
<td>2.0</td>
</tr>
<tr>
<td>300mm</td>
<td>1.5</td>
</tr>
<tr>
<td>400mm</td>
<td>1.0</td>
</tr>
<tr>
<td>500mm</td>
<td>0.5</td>
</tr>
</tbody>
</table>

**d² Dura Grating 41mm Solid Top**

<table>
<thead>
<tr>
<th>Clear Span</th>
<th>UDL (kN/m²) at 0.5% or L/200</th>
</tr>
</thead>
<tbody>
<tr>
<td>100mm</td>
<td>5.0</td>
</tr>
<tr>
<td>200mm</td>
<td>2.0</td>
</tr>
<tr>
<td>300mm</td>
<td>1.5</td>
</tr>
<tr>
<td>400mm</td>
<td>1.0</td>
</tr>
<tr>
<td>500mm</td>
<td>0.5</td>
</tr>
</tbody>
</table>

**d² Dura Grating 53mm Solid Top**

<table>
<thead>
<tr>
<th>Clear Span</th>
<th>UDL (kN/m²) at 0.5% or L/200</th>
</tr>
</thead>
<tbody>
<tr>
<td>100mm</td>
<td>5.0</td>
</tr>
<tr>
<td>200mm</td>
<td>2.0</td>
</tr>
<tr>
<td>300mm</td>
<td>1.5</td>
</tr>
<tr>
<td>400mm</td>
<td>1.0</td>
</tr>
<tr>
<td>500mm</td>
<td>0.5</td>
</tr>
</tbody>
</table>

### Ensuring Compliance to British Standards

Standards are used to establish consistent protocols that can be universally understood ensuring the reliability of the materials, products and services people use every day.

Adherence to standards can make it easier to understand and compare competing products, but with such a broad range of standards out there covering fields as diverse as health and safety, the fire performance of materials, and safe access to machinery and equipment, it can be hard to ascertain which standards may affect the material selection for your particular project.

The list below highlights the suitability of d² Dura Grating for some of the main standards in common usage for GRP flooring.

### British Standard Guide

<table>
<thead>
<tr>
<th>Standard</th>
<th>Application</th>
<th>Duty</th>
<th>Point Load</th>
<th>Area Load</th>
<th>UDL</th>
<th>Deflection</th>
<th>Opening Size</th>
<th>Most Suitable d² Dura Grating Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>BS 4592-0:2006</td>
<td>Flushing, waste and service drains to Industrial use</td>
<td>General</td>
<td>1.5kN</td>
<td>200x200</td>
<td>2.5kN/m²</td>
<td>L/200 or L/250</td>
<td>20mm for places where people are working under the grating or L/200</td>
<td>✔</td>
</tr>
<tr>
<td>BS 4592-1:2013</td>
<td>Flushing, waste and service drains to Industrial use</td>
<td>General</td>
<td>1.5kN</td>
<td>200x200</td>
<td>2.5kN/m²</td>
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</tr>
</tbody>
</table>

### Norsok Working Environment Standard

d² Dura Grating also meets the specific requirements of the Norsok Working Environment Standard developed for the Norwegian Offshore Sector. This standard requires that grating used for Floors, Deck, Staircases & Platforms shall not allow a ball of more than 20mm diameter to fall through. The 20mm grating open hole limit applies wherever there are persons working beneath the grating. If there is no-one working below the maximum opening can be 35mm in diameter.

### Impressive Anti-slip Results

Dura Grating’s anti-slip surface 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.

### BS 4952 “Flooring, Treads & Handrails for Industrial use”

states that any opening should prevent the passage of a 35mm diameter sphere except where the grating is above a place where people are working as opposed to occasionally passing, then the openings should prevent a 20mm diameter sphere from passing through.

### BS EN ISO “Safety of machinery”

“Permanent means of access to machinery” states that openings should prevent a 35mm sphere for occasional passage underneath and a 20mm diameter sphere for spaces that are more regularly worked.

---

**KEY:**
- Deflects less than 3.5% - Beyond safety factor
- Deflects more than 6.5% - Safety factor
Industry-Leading Fire Performance

Dura Composites’ d² Dura Grating is the first in the industry to be produced as Class B as standard (in accordance with BS EN 13501-1).

With composites usage in demanding applications increasing, an understanding of their fire performance has become a safety-critical issue. Poorly protected service penetrations can put buildings at risk of fire spread, but with the appropriate choice of resin, additive and fillers, GRP materials can be used to make riser flooring that offers clear fire performance benefits over many other materials. As GRP composites are good thermal insulators, they can significantly limit the heat of a fire spreading in the way that can occur with metals.

The classification system defined in BS EN 13501-1 is quickly becoming the primary recognised standard in the construction industry. The process for classification under this standard involves a combination of up to five rigorous tests designed to assess the product on a range of characteristics, including combustibility, heat levels, flame spread and smoke release. Once tested, the product receives an official classification of its fire rating, known as a Euroclass rating.

Understanding European Classification (BS EN 13501):

The standard includes seven classification levels, from A1 to F, with A1 representing the highest level of performance and F representing the lowest level. d² Dura Grating achieves Class B - the best on the market.

Occasionally, a material used by the Construction industry may focus on a Class 0 or Class 1 rating. However, these classifications do not indicate combustibility of the product, referring only to limited surface fire performance characteristics. Class 0 is a rating defined in Approved Document B of the Building Regulations and combines two tests in the British Standard BS 476.

The first assesses a surface’s contribution to fire propagation (BS 476-6) and the second assesses the spread of flames across a surface, including distance and time (BS 476-7). Class 1 is a limited classification based on the test in BS 476-7 only, so it is important to recognise the limited application of these classifications and to focus on the specified standard requirement for your construction project which is likely to be BS EN 13501.

Other Fire Stopping & Phenolic Solutions

Intumescent Coating for the Dura Riser Steel Framework

We can offer an intumescent paint coating for our Dura Riser galvanised steel framework. Intumescent paint reacts to heat by swelling in a controlled manner to many times its original thickness, producing a carbonaceous char that acts as an insulating layer to protect the substrate, thus helping achieve specified fire resistance levels in terms of time.

Fire Stopping Compound

We can work with providers of market-leading fire stopping compound products that ensure that the effective seal within fire rated walls and floors can offer critical fire stopping protection.

Phenolic Grating

We also offer Dura Composites Phenolic fire-resistant GRP grating by special order which is engineered to withstand prolonged fire exposure without sustaining structural damage. Phenolic grating can achieve maximum fire resistance, low smoke and low toxic fume emissions and is ideal for use in high fire risk areas of buildings. It is available in a dark russet colour for easy identification on-site.

For more information on our fire safety and fire stopping products, please contact your Dura Composites representative on +44 (0)1255 446830.
Dura Riser Installation Steps

1 COLLECT INFORMATION

Information on voids and location services will be collected by issued drawings or by measure via a site survey where safety, access and equipment requirements will also be identified.

2 INSTALLATION DRAWINGS

Install drawings will be drafted to identify the voids to be covered, the finished height and the placement of supports required to ensure the flooring is adequately reinforced.

3 SETTING OUT

The void will be measured from corresponding datums or gridlines, and then carefully marked to enable an accurate installation.

4 INSTALL SUPPORTS

The Dura Riser Framework is installed into the substrate of the void using approved fixings. Support will be offset by the thickness of the grating to allow the correct finished height.

5 INSTALL GRATING

The Dura Riser grating will be cut to size and rested upon the supports, then clipped down to prevent uplift.

6 CUT OUT FOR SERVICES

If your installed Dura Riser flooring solution has reached the next project stage, our experienced team are on hand to assist and ensure the structural integrity of your riser solution isn’t compromised when the mechanical and electrical services are added.

The Dura Riser system can be installed without delay - offering immediate riser protection and enabling the site to be fully operational instantly. Our experienced team can help ensure that your M&E requirements are factored into the build at the specification stage to help save you time and money.

VALUE ADDED SERVICES:

Dura Composites offers a structural design engineering service, both as a stand-alone design or as part of a larger integrated design scheme. Our Dura Riser design package includes layout drawings with secondary supports, and the option of FEA simulations and service cut out reports. All covered under Dura Composites Public Liability Insurance.

With over 20 years’ combined experience, our Riser Installation Team are fully equipped and trained to install our bespoke patent pending riser safety solutions on high-rise new builds and refurbishments.

www.duracomposites.com
**Commercial Road, London**

27 Commercial Road, London E1 1LD

Dura Composites products were selected for 27 Commercial Road by Ardmore, one of the largest family-owned construction groups in the UK. Ardmore are responsible for delivering hundreds of major projects and specialise in London-based multiphase regeneration schemes, high-rise developments, luxury residential projects and bespoke hotels.

Commenting on the installation of the Dura Riser, Danut Bojan, Construction Manager at Ardmore Construction said:

“The Cast-in Dura Boxes and Dura Riser were easy to install on this project and were delivered to site in numbered kit format already made to size, so it was simple for us to fit each one as the concrete was poured.

The durable anti-slip grating prevents objects and debris falling through and has a strong, anti-slip surface, so follow on trades will benefit from a great safety solution that’s easy to work with when it comes to installing the services. From our point of view, it was great that hot works permits weren’t required and that the Dura team gave us all the advice and support we needed to make the risers safe in an efficient and cost-effective way.”

**Elephant Park, London**

Elephant & Castle, Central London SE17

Elephant Park is a new mixed-use development in Elephant & Castle, London SE17 and is one of London’s largest regeneration schemes. The project is being completed in multiple phases and is a partnership between Lendlease and Southwalk Council.

Dura Composites products were selected for this phase of Elephant Park by AJ Morrisroe & Sons, specialists in civil engineering, groundwork and superstructure RC frame construction.

Commenting on the installation of Dura Riser, James Wibberley, project Engineer at Morrisroe said;

“The Dura Riser proved ideal for the project as they were delivered to site ready-made for quick installation. Dura Riser negates the requirement for heavy lifting equipment and significantly reduces installation costs, as service holes can be cut in situ without the need for post fixing or hot works permits. The team at Dura Composites offer superb technical and CAD support, and we look forward to working with them on future phases of Elephant Park and on other projects.”
Embassy Gardens, London

Embassy Gardens is a 15-acre mixed-use development in Nine Elms, London. The development includes nine apartment buildings along with office, retail and community spaces. The project is a joint venture between EcoWorld and Ballymore, and the master plan was developed by Terry Farrell and Partners. Phase 1 is now complete, with Phases 2 and 3 under construction.

Building Services Company Briggs and Forrester were appointed as the M&E contractor and chose Dura Composites for the complex job of installing secondary supports to allow cut outs to be made to the various GRP grating riser platforms already in situ. Prior to Dura Composites surveying the site and making their recommendations, no provision had been made for the service supports needed for mechanical and electrical services to pass through on various floor levels whilst still maintaining the integrity of the riser. The Dura Riser Team carried out the required work quickly, proficiently and to a high standard and in accordance with all required Health and Safety criteria.

Paul Petrilli, Quantity Surveyor at Briggs & Forrester Engineering Services Ltd;

“Due to the nature and intricacy of the requirements to stabilise and re-enforce the platform steel in our services riser on all ten levels, we had to investigate the market to find an appropriate specialist that we could trust, to ensure the works were carried out correctly and properly.

The comprehensive and detailed proposal we received from Dura Composites which identified the weak points in the platform structure and how to overcome them was both commercially and structurally viable, leading Dura Composites to be our preferred bidder during the tender process.

Once the contract was awarded and the Scope of Works was finalised Dura Composites mobilised within days, kept us continuously informed of their progress, and also identified any Health and Safety risks during the installation.

Once the works were completed, they also identified how the additional structural supports would be monitored and maintained. In the view of the proficiency of their installed works, Dura Composites are now a valued part of our Supply Chain and I wouldn’t hesitate to recommend them for Riser Installation works”.

Shard Place, London

Shard Place is in the third phase of the £3.5 billion redevelopment of the estate next to London Bridge station, known as Shard Quarter. When completed in late 2020, Shard Place will provide a range of flats alongside amenities including a cinema, spa, and private roof garden. The building will appear to ‘float’ nine metres above ground providing 13,000 sq ft of public space and 12,000 sq ft of retail space.

Reinforced concrete frame and groundwork specialists Getjar were appointed as the formwork contractor by the principal contractor Mace and chased the Dura Riser install team to take on some of the complex install challenges for the service risers. Prior to the appointment of Dura Composites, Getjar had been installing GRP into a number of voids, but selected Dura to provide specialist installation support to address the service cut outs required for the M&E phase of construction. Dura’s unrivalled expertise and full install capabilities meant they could deliver a bespoke solution for a large triangular shaped riser on all 26 storeys that required the use of galvanised steel supports and bracing in conjunction with Dura Riser to allow for cut outs to be performed whilst maintaining the integrity of the riser.

Paul McNamara, Contracts Manager at MH Getjar Ltd;

“We have found Dura Composites to be extremely knowledgeable, informative, accommodating and professional throughout our engagement with them on this and a number of other projects. Their design service is quick and offers good advice and an efficient scheme, which is then followed up by a professional installation team who are flexible to the changing needs of site conditions on a daily basis and most importantly are willing to work with us to deal with variations and challenges along the way.

Our end clients are also complimentary of the services Dura Composites offers from a management and Health and Safety perspective.

It’s pleasing to see a forward-looking and innovative company who are investing in Research and Development to provide a service tailored to the construction industry for everyone’s benefit by reducing installation time and material costs”.
Dura Riser Flooring - Case Study

Victoria Square, Woking

Woking, Surrey, GU21 6DG

The Victoria Square development in Woking town centre is on track for phased completion in 2020 and is one of the South East of England’s largest and most ambitious building and engineering projects.

Construction giant Sir Robert McAlpine is spearheading the multi million pound transformation, which is a joint venture between Woking Borough Council and shopping centre owner and investor, Moyallen Group.

At 34 and 32 storeys high, the two residential towers will feature over 400 high specification apartments in a prime location. The built-to-rent apartments will benefit from full concierge facilities, an external garden, and an amenity space for residents.

The 23 storey third tower will be home to the town’s newest hotel. The 189 room flagship Hilton Hotel will include senior and junior suites, a new lobby bar, all-day dining restaurant, stylish sky bar, conference facilities and an on-site café.

The new development will be anchored by 125,000 sq ft of commercial space featuring the new Marks & Spencer food and clothing store across 50,000 sq ft, multi-storey car park, a medical centre and two public plazas.

Dura Composites have played two critical roles during various phases of the build to date, firstly providing safety flooring using our RiseSecure framework system and 38mm and 50mm grating for void protection during the build itself, working with Getjar Ltd.

The team were then commissioned by M&E contractor Briggs and Forrester following the finalising of the service layout to provide safe support for the service cutouts, thanks to the ability of our Dura Grating to be easily cut on site without the need for hot works permits.

www.duracomposites.com
Dura Riser Flooring - Case Study

135 Bishopsgate, London

135 Bishopsgate is an office redevelopment in the City of London EC2. First completed in 1988, the building was wholly occupied by RBS until June 2017 until British Land began implementing its plans for redevelopment.

It is one of a trio of buildings that form a 900 ft continuous frontage along Bishopsgate. Originally designed by Skidmore, Owings & Merrill (SOM), 135 Bishopsgate was granted planning permission in August 2017 for a refurbishment to the interior of the building, improving the connectivity with the street, and installing terraces and green spaces on the upper levels. The project significantly expands the current retail provision and provides over 280,000 sq ft of workspace, and will host London’s first Eataly food market, making it a hotspot for retail, leisure and commercial services.

The project’s principal contractor is Sir Robert McAlpine who are delivering 3 schemes for British Land on its Broadgate Campus site. Working on the build at 135 Bishopsgate are Gratte Brothers, one of the UK’s leading independent building services companies.

Gratte Brothers chose Dura Composites for the important job of providing void safety flooring during the refurbishment. Following the installation of the Dura Riser grating and framework, Dura Composites were also commissioned to refurbish AHU platforms on the roof of the building and within the building (also using the versatile Dura Riser framework and 45mm Mini Mesh grating).

The Gratte Brothers project team at 135 Bishopsgate secured an International Safety Award with Merit from the British Safety Council in 2019, in recognition of their commitment to safety and further proving the safe credentials of the materials carefully selected for this project.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Installation Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPX02157</td>
<td>M10 Zinc Plated Throughbolt - 40mm</td>
<td>Angle to Concrete; 500mm Centres</td>
</tr>
<tr>
<td>PX02080</td>
<td>M10 Zinc Plated Hex Head Concrete Screw - 80mm</td>
<td>G Bracket to Concrete; 2 per Bracket</td>
</tr>
<tr>
<td>BPX02166</td>
<td>M10 BZP Hex Head Set Screw 30mm, Nyloc, Nut, 2 Washers</td>
<td>Channel to G Bracket / Back to Back Channel Fixings</td>
</tr>
</tbody>
</table>

### Installation Options & Fixing

A wide range of fixing solutions are available to cater for the huge number of applications that our Dura Grating is suited to. These are as follows:

#### Dura Riser Framework Fixings

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Installation Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPX02166</td>
<td>M6 Pre-Galvanised Extra Large Dome Washer</td>
<td>All Grating; 1000mm Centres</td>
</tr>
<tr>
<td>BFX03002</td>
<td>5.5mm BZP Hex Head Self Drilling Tek Screw - 70mm</td>
<td>For 38-55mm Grating; 1000mm Centres</td>
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</tbody>
</table>

#### Dura Riser Grating to Concrete Substructure Fixings

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Installation Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPX02154</td>
<td>M6 Phillips Head Tapcon Counter Sunk Screw - 70mm</td>
<td>For 38-45mm Grating; 1000mm Centres</td>
</tr>
</tbody>
</table>

#### Dura Riser Panel to Panel Joining Bars

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Installation Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRP0500</td>
<td>Pre-Galv Channel Slotted 42 x 42 x 5.5mm - 350mm</td>
<td>Used at 500mm Centres</td>
</tr>
<tr>
<td>BPX03005</td>
<td>M8 BZP Hex Head Set Screw Fully Threaded - 50mm</td>
<td>2 per Joining Bar Assembly</td>
</tr>
<tr>
<td>BPX03006</td>
<td>M8 BZP Hex Head Set Screw Fully Threaded - 70mm</td>
<td>2 per Joining Bar Assembly</td>
</tr>
<tr>
<td>BPX03041</td>
<td>M8 Nylon Captive Channel Nut</td>
<td>2 per Joining Bar Assembly</td>
</tr>
</tbody>
</table>
Cost Saving GRP Access Solutions for the Construction Industry

Flexible, Lightweight & Non-Conductive Access Structures

Access platforms and structures are an important provision for keeping maintenance and engineering workers safe, and allow them to work in comfort around equipment without the risk of falling or injury.

The Construction Design and Management (CDM) Regulations of 2015 require designers to eliminate or reduce risks to those involved in maintenance as far as is reasonably practical and to design safe structures in accordance with the Eliminate-Reduce-Inform-Control (ERIC) framework. Core principles of ERIC include:

- Eliminating the need for maintenance as part of the design by using materials with suitable durability; or if that is not possible,
- Designing the structure so that future maintenance is reduced
- Designing the structure so that when maintenance is required it can be carried out safely

Dura Composites offers a range of Access Structures made from our non-corrosive, non-conductive and lightweight GRP which provide exceptional strength, toughness and consistency, making them a logical and cost-effective alternative to steel, aluminium, wood or other conventional materials.

Access Structures which can be produced from Dura Composites GRP profiles include:

- Fixed access ladders (also known as a hooped ladder)
- Ship’s staircases and companionway ladders
- Access gantries
- Stepovers (also known as Up and Overs)
- Edge protection with handrails
- Fixed platforms
- Mobile Platforms
- Air Handling Unit inspection platforms
- Water equipment and electrical plant access platforms

Dura Composites’ fabrications can be delivered to site in complete form, or in manageable sections for final assembly on location. If open mesh walkways and treads are required, these can be selected from our anti-slip gritted GRP Dura Grating range in line with your load bearing and span requirements.
From Concept to Reality:
The Dura Composites Method

Concept Design
We utilise our multi-disciplined team to produce innovative concept solutions that solve customer issues.

Design Optimisation
If you need it smaller, stronger or lighter, we can make it happen using verification and analysis tools such as Finite Element Analysis (FEA).

Fabrication Drawings
To turn designs into reality once the detailed 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.

Built-in Sustainability
It’s not just the initial outlay costs that you should consider when deciding on a material for your project. It’s important to consider the whole lifecycle of the material and all its associated costs, including installation, how long it will last and what kind of maintenance (if any) will require to keep it functioning and looking its best.

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 and have a design life in excess of 60 years and 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.
Fan Filter Maintenance - Case Study

For this project, Dura Composites’ client Capri Mechanical Ltd required an access platform to be erected along the side of an air handling unit (AHU) in order to safely access a set of fan filters at the top of the unit.

Access to the side of the unit was also required for periodic inspection, cleaning and maintenance, but this posed a challenge due to restricted access. Based on a sketch from the client, Dura Composites’ in-house CAD team devised a clever, safe and robust structure that “hugged” the unit and positioned supporting legs on the outside corners.

An access ladder with a step over was also constructed to allow entry from the roof onto the platform.

Critical Electrical Equipment Inspections - Case Study

The gas-insulated switchgear (GIS) at this windfarm protects the wind turbines from overloads and short circuits and is a critical piece of machinery. Instruments located on top of the switchgear must be regularly inspected and maintained, and safe access for on-site personnel is paramount – but site limitations in this instance presented complex challenges which Dura Composites were able to solve.

The shape and size of the unit made it impossible to use usual design methods, so following a consultation with their design team, Dura Composites’ engineers were able to perform an analysis which resulted in the selection of a single heavy-duty handrail and beam to connect two end frames and support the floor panels.

The finished design had several conflicts with the usual standards used to build plant access platforms, but with their significant design, fabrication and installation expertise, Dura Composites was confident that it would meet the client’s exacting requirements.

A design Risk Assessment was conducted to identify and mitigate residual risk, and the design was altered to incorporate a self-closing door before being presented for approval.

With approval granted, fabrication could commence, with the Dura install team cutting the flooring panels in situ to allow them to fit around the tricky format of the switchgear.

The finished platform was delivered and installed as planned. We’d like to commend your installation team for a proactive approach and professional attitude.”

Andrew Gaft MSc MIET MAPM
Project Manager, J. Murphy & Sons Limited

Air Handling Unit Platform

Jamestown Road, London NW1

For this project, Dura Composites’ client, Capri Mechanical Ltd, required an access platform to be erected along the side of an air handling unit (AHU) in order to safely access a set of fan filters at the top of the unit.

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Switchgear Unit Access

European Offshore Wind Deployment Centre, Aberdeen

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Andrew Gaft MSc MIET MAPM
Project Manager, J. Murphy & Sons Limited
Health and Safety

Fully Certified and Accredited

We have a highly experienced workforce that embraces a “can-do” attitude. We are ISO 9001 certified – a quality management system that helps us continually monitor and manage quality in order to achieve, as well as benchmark, consistently high performance and service.

The Dura Composites GRP Riser Installation team is committed to maintaining health and safety standards across all of its working environments. We invest in specialist health and safety training for all our staff, and our GRP installation operatives are IPAF and PASMA qualified. We are pleased to have gained a SMSTS Worksafe certificate which means that we have met the SSIP core criteria recognised by the HSE and other SSIP accreditation schemes. All installation teams are supervised by an SSSTS trained supervisor, and all operatives carry CSCS cards, so you can be confident that Dura Composites is committed to safe working practices on site.

BIM Objects

Free BIM Objects for Architects, Designers and Specifiers

Dura Composites is committed to providing architects, engineers and contractors with the information that they need to create data-rich digital buildings, leveraging Building Information Modelling (BIM).

Available free from the National Building Specification (NBS) National BIM Library, Dura Composites BIM Objects allow specifiers to see up-to-date, accurate data and to easily incorporate them into their overall design.

Authors 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.

Get Double Points When Booking Dura’s CPD!

The Dura Composites CPD is part of the RIBA Core Curriculum in the category of Design, Construction and Technology.

The RIBA Core Curriculum has been created to ensure that key architectural skills are covered in learning activities. Chartered members are obliged to undertake a minimum of 20 of their yearly 35 hours CPD from this curriculum, with two hours of CPD time in each of ten key topics. RIBA certified CPD presentations, such as Dura Composites’ CPD earn double CPD points for those attending!

Why not book our FREE approved RIBA CPD today and upskill your project teams on designing for riser void safety?

www.ribacpd.com/dura-composites-ltd/17218/overview/
Other applications for Dura Grating:

- Industrial Flooring
- Walkways
- Platforms
- Assembly Lines
- Wash Bays
- Work Stations
- Stairs
- Protective Screening
- Offshore Platforms