## Technical Installation Manual Aluminium Decking Substrate



The substructure or subframe forms the skeleton of your deck. Your bearers will run in the opposite (90° or 45°) direction to your chosen deck boards, so it's important to have settled on a decking design before you begin your installation.

Consider the thickness of your decking boards too before starting. If your deck is adjoining your house then it should be built as level to the bottom of the access door as possible.

If you require any further information or support, please call us on +44 (0) 1255 443 110 or email info@duracomposites.com where one of our knowledgeable staff will be happy to help.

### Unlocking the Power of Composites<sup>™</sup> ≫ for High Rise Balconies & Terraces



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# **Product Range**



## The Sub-Frame

The Dura Pedestal and Bearer system has been developed to be fully compatible with the latest developments in fire safety legislation to help improve building safety. Both components achieve a Class A2 fire rating to EN13501-1 flooring standards with their anthracite powder coated finish and an A1 rated mill finish is also available by special order.



#### Aluminium Substructure System

Aluminium Bearers are the simplest and most durable sub-frame option. They have a long life expectancy and are uniform, making installation relatively simple. When Dura Bearers and Dura Pedestals are combined, they are able to overcome a huge slope range and can be used in areas with gradients of up to 10°Degrees – which is equivalent to a 1:6 fall! Each pedestal can be slid onto the bearer in a matter of seconds. When the bearer is fixed into the first and last pedestal of the run at the right height, it creates the required fall at a pre-set angle, so there's no need to adjust each individual pedestal.

For all sub-frames, please note the following:

- A sub-frame allowing a minimum of 25mm air space between the Dura Deck boards and the ground or substrate is essential to allow sufficient air flow to prevent the build-up of moisture.
- The finished deck must have a gradient of 1 in 100 (1%) which is equivalent to 10mm of fall for every 1m of deck to encourage water to run off, avoiding slip related injuries and eradicating long term moisture penetration due to standing water.
- The maximum span beneath supporting bearers depends on the bearer material choice and specification. Please refer to material supplier.
- If possible, try to make the width of the deck divisible by the width of the chosen board to avoid the need to trim and finishing board along its length.

### Work out approximately how many boards width your deck will be, then round it up or down to the nearest board.

## Aluminium Pedestals & Bearers

Our extensive range of Aluminium Pedestals and Bearers are flexible to fit your installation. Any combination is possible and our expert team is always happy to help explore your solutions with you.

A2 Bearer Options										
Description /Options	Height (mm)	Width (mm)	Length (mm)	Weight per Length (mm)	Max Centres Between (mm)					
Aluminium Bearer 25mm (Anthracite Painted Finish)	25	48	3660	3.4	400					
Aluminium Bearer 50mm (Anthracite Painted Finish)	50	48	3660	3.5	600					
Aluminium Bearer 75mm (Anthracite Painted Finish)	75	48	3660	6.1	1300					



A2 Pedestal Options										
Description (Ontions	Heights achieved with 25mm Bearer		Heights ac 50mm	hieved with Bearer	Heights achieved with 75mm Bearer					
	Min Height (mm)	Max Height (mm)	Min Height (mm)	Max Height (mm)	Min Height (mm)	Max Height (mm)				
Aluminium Pedestal 25.5mm	28	38	53	63	78	88				
Aluminium Pedestal 36.5mm	38	53.5	53	83.5	78	103.5				
Aluminium Pedestal 50.5mm	53	65.5	53	88	78	113				
Aluminium Pedestal 85.5mm	88	100.5	88	123	113	148				
Aluminium Pedestal 117.5mm	120	132.5	120	155	145	180				
Aluminium Pedestal 152.5mm	155	167.5	155	190	180	215				
Aluminium Pedestal 187.5mm	190	202.5	190	225	215	250				
Aluminium Pedestal 222.5mm	225	237.5	225	260	250	285				



25.5mm High



36.5mm High



152.5mm High



50.5mm High



187.5mm High



85.5mm High



222.5mm High

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117.5mm High

## Aluminium Pedestal Pads

This Aluminium Pedestal Pad can be used in conjunction with our Dura Pedestals for added protection when using waterproofing membrane or roof felt. Lightweight and easy to install, it features drainage holes to prevent water stagnation and can be easily removed and re-used as required.





# Preparation

Dura Aluminium Decking Substrate has been designed for simplicity and ease of installation. However, to ensure long-term performance, any installation **MUST** be carried out in accordance with these instructions including the use of all fixings or accessories to ensure your warranty is valid.

In order to activate your warranty, you must complete the online form at www.duracomposites.com/warranty within 30 days of

your invoice date. Dura Composites also recommends that all deck designs be approved by a licensed architect or engineer before any installation takes place to ensure compliance with local building codes.

## Safety

- Keep members of the public away from the work area until the job has been completed and tools have been stored safely.
- Refer to the operator's manuals for safety guides for all power tools being used.
- When handling Dura Aluminium, always wear gloves with additional eye protection and work in a well-ventilated area.
- 100% of the finished product can be recycled repeatedly, meaning it need never end up in landfill. If unsure, always contact your local governing body/council for more information.
- Wear eye protection when pressure washing or scrubbing.
- Dura Aluminium is NOT intended for use as columns, support posts, beams, joist stringers or other primary load bearing members unless approved by Dura Composites before any installation takes place in case of safety issues.

Please be sure that your proposed design meets any relevant local building codes and regulations before you begin the installation.

### Tools Required

Dura Aluminium Decking Substrate can be installed in environments using a number of standard tools. The list of tools and supplies you may need includes the following:



\* IMPORTANT: Only use a drill or drill driver on a low setting. Hammer settings or impact drivers are not compatible with the screw types used for Dura Aluminium Decking Substrate installations and must not be used.

## Substructure Solution



## Using Dura Aluminium Pedestals and Dura Bearers

Aluminium Bearers are the simplest and most durable sub frame option. They have a long life expectancy and are uniform, making installation simple.

Aluminium Bearers are designed for installation directly onto hard surfaces, such as concrete or paving and also onto soft surfaces such as soil, sand or grass, provided the area has been compacted and bricks, pavers or concrete slabs are placed beneath the bearers at suitable intervals.

The Dura Pedestal fire-rated pedestal and bearer system has been developed to be fully compatible with the latest developments in fire safety legislation and to improve building safety.

Dura Pedestal achieves a Class A2 fire rating to EN13501-1 standards with its standard anthracite powder coated finish and an A1 rated mill finish is also available by special order.

When combined with our Dura Deck Aluminium decking and our aluminium Dura Bearers, it produces a fully Class A2 fire-rated flooring system, that is ideal for use on balconies and roof terraces, where stringent fire safety measures are of paramount importance.

There are multiple options within the Dura Pedestal range, from a simple 28mm bearer/pedestal to provide decking support in height-restricted areas with low thresholds, to the tallest 222.5mm pedestal which offers 35mm of adjustment to suit even the most demanding of raised flooring projects.

For more information on the Dura Composites system, please visit <u>www.duracomposites.com/composite-decking/</u> <u>aluminium-pedestals-and-bearers</u>



## Aluminium Bearer Calculation

To determine how many bearers you will require, you can follow the method below.

Begin by measuring the proposed deck area(s) - width length and height (from the ground). Based on the square meterage of the area(s) multiply this by 4 and add 10% for wastage, to determine the total linear meters of the deck bearers required. Divide the total linear meters of the bearers by the individual length of the bearer (3600mm for aluminium) which will give you the total quantity of bearers required; you should always round the number up to ensure you have an adequate number of bearers.

Example  $30m^2$  deck area: ( $30m^2 \times 4$ ) x 1.1 = 132 liner meters of bearer 132Lm / 3.6m (length of bearer) = 37 bearers (rounded up)



## Aluminium Bearer Selection

You now need to decide on the type of bearer profile you require (25 x 48mm, 50mm x 48mm or 75mm x 48mm) as this will determine the required structure support.

The allowable deck height and the ground conditions will also determine which support system would best suit your build, either:

100x100mm posts to be cemented into soft ground, and attached to the aluminium bearers or; adjustable support pedestals placed on hard flat ground.

You will also need to take into consideration how often the bearer profiles require supporting. For further assistance, please call us on 01255 443110 and one of our team will be happy to help.

Once you have decided on your chosen bearer, you should set them in place according to your chosen decking product:

400mm Centre - Centre for Dura Deck Flip

850mm Centre - Centre for Dura Deck Aluminium Free-Drain

1050mm Centre - Centre for Dura Deck Aluminium Positive-Drain 18mm

1400mm Centre - Centre for Dura Deck Aluminium Positive-Drain 27mm







## Aluminium Pedestals

Aluminium Dura Pedestals have an A2 fire-rating and a unique patent pending design which helps overcome even the most complex of installation challenges. Available in 7 different variants, the anthracite coloured pedestals are designed to work seamlessly with our aluminium Dura Bearers to provide the most economical A2 rated support system on the market. Unlike plastic pedestals, the Dura Pedestals have a single unit construction, with no fiddly separate components (such as bearer holders, slope correctors or spacers) to unpack and assemble.

The tripod design features enhanced stability to mitigate the risk of rolling and can be butted right up to the wall or edge without the need for cuts. If your project requires a fall, or if your substructure is not level, each pedestal includes handy visual notches at 5mm intervals so you can easily secure your bearers at your desired height.

Dura Pedestals are available in 7 heights from 25.5mm to 222.5mm high and offer unrivalled choice for height variances when combined with our 25mm x 48mm, 50mm x 48mm and 75mm x 48mm aluminium Dura Bearers. Use any Dura Bearer with any Dura Pedestal to create 42 different combinations. Installation is faster, easier and more stable than with fiddly plastic pedestals. A precise height can be created (which can be as small as a 10 mm adjustment when installing any bearer option in combination with the 25.5mm pedestal).

#### Registered Design No. EU 007 827 746 Patent Application No. GB 2005553.9



### Substructure Installation

#### Step 1:

Determine your overall height build-up and then reduce your measurements by the thickness of your chosen decking board (e.g. Dura Deck Flip = 25mm).









Choose your bearer and pedestal combination.

#### Step 3:

Slide the first of your chosen height Pedestals along the Bearer.

#### Step 4:

Now add additional Pedestals and space appropriately along the Bearer at:

400mm Centre – Centre for 25mm Dura Bearer 600mm Centre - Centre for 50mm Dura Bearer 1300mm Centre - Centre for 75mm Dura Bearer



#### Step 5:

Once you have obtained your required height, screw through the first Pedestal (2 screws either side of each Pedestal) into the Bearer to fix using 4.8 x 19mm screws (DDAS205).



Fix the first and last Pedestal into place to achieve the required fall for your decking. The other Pedestals will then self-adjust and can be fixed into place (working from front to back).

#### Step 7:

Add additional Bearers (with Pedestals slid on) at the required centre spacings defined by your chosen decking product e.g.

#### 400mm Centres:

Centre for Dura Deck Flip **850mm Centres:** Centre for Dura Deck Aluminium Free-Drain **1050mm Centres:** Centre for Dura Deck Aluminium Positive-Drain 18mm **1400mm Centres:** 

Centre for Dura Deck Aluminium Positive-Drain 27mm

#### Step 8:

Repeat all other previous steps until all Bearers and Pedestals are in place and the bearers have been correctly secured into the Pedestals at the required heights as per step (6).











#### Step 9:

When all Bearers and Pedestals are in place at the correct Centre spacings to suit your decking product specification, lay your decking boards across the Bearers in line with the spacing defined by the gap guide in our decking technical installation manuals.



#### Step 10:

Complete your decking install as per the technical manual, ensuring that if using composite timber decking, make sure start/stop clips have been used and the fixing clip has been fixed onto into their correct position on every Bearer using the correct specified Self-drilling Dura screws for each decking and bearer option (30mm screws (DDAS206) for 25x48 bearer and 38mm screws (DDAS207) for 50/75x48 bearer).







# **Additional Info**

## Maintenance & Recycling

#### Material

6063 Grade Aluminium (T6)

#### **Pressure Washing**

Pressure washers up to 1500psi may be used to maintain the cleanliness of your aluminium substructure if this is required or indeed practical. In order to prevent any damage, always keep the pressure nozzle at least 15cm (6 inches) from the surface and avoid concentrated spraying in one area for more than 3 seconds. Use of a pressure washer in this manner will not shorten the lifespan of the material.

#### **Marks for Cutting**

Always use a non-permanent marker such as baby powder/dust-off marking chalk tor plumb line wherever possible.

#### Disposal

Dura Deck Aluminium is a great choice if you're looking for sustainable solutions. 100% of the finished product can be recycled repeatedly, meaning it need never end up in landfill. If unsure, always contact your local governing body/ council for more information.

#### Warranty

10 year warranty on painted surface finish. 60 year expected service life.

#### Finish

Anthracite powder coated finish as standard to blend in seamlessly with any decking project. Mill finish available by special order.

#### Proven A2 Fire Performance

Dura Pedestals and Dura Bearers have been tested in accordance with the requirements of EN 13501-1: Fire classification of construction products and building elements by an accredited body, satisfying current fire legislation – with testing carried out in an environment that replicate that of an actual flooring installation. For copies of the fire testing certificates, please consult your Dura Composites representative.

Dura Deck Aluminium bearers have been tested by a UKAS accredited certification body which provides independent third-party certification fire services. Our aluminium Dura Pedestals have also been tested by an independent laboratory and all test certificates are available on request. It is the responsibility of the client and contractor to ensure that your planned design is fully compliant with the latest Building Regulations. For further guidance on fire safety, please refer to the latest online government documentation, and for complex or high risk projects, please ensure that you consult a competent fire safety specialist.

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Due to our policy of continual improvement we reserve the right to change specifications at all times without prior notice.

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