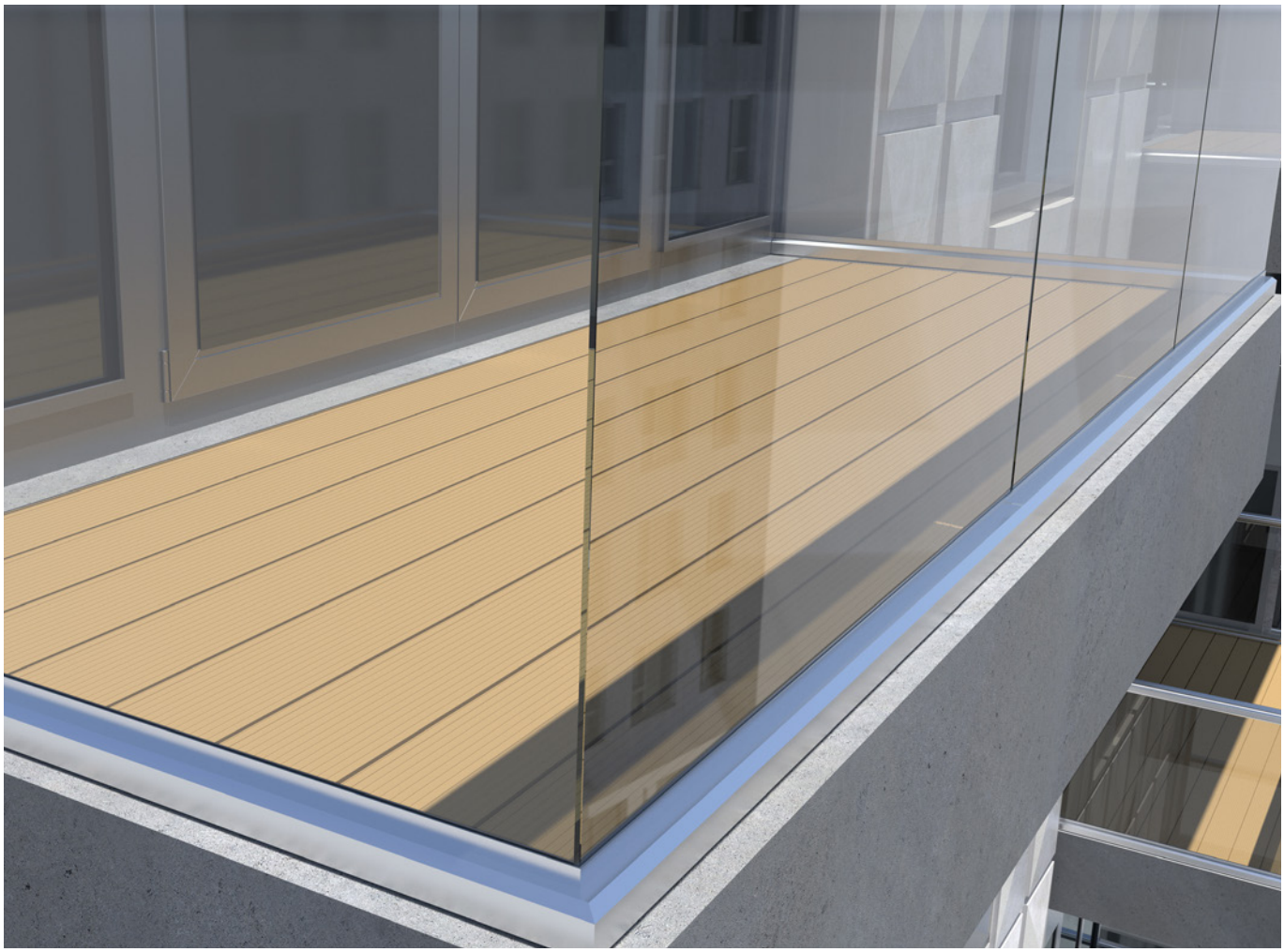
Decking

Technical Installation Manual

Dura Deck® Aluminium Positive-Drain



Dura Deck® Aluminium 18mm Positive-Drain is a patent-pending aluminium decking system designed for high-rise balconies and public areas that require a Class A2 fl-s1 Fire Rating.

This Technical Manual contains guidance relating to the installation of your new decking and additional technical information regarding the product specification. To ensure you get the best results from your Dura Deck® Aluminium boards, we recommend working with a professional contractor with previous decking installation experience.

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™
» for High-Rise Balconies & Terraces

Tel: 01255 443110 | www.duracomposites.com

THE QUEEN'S AWARDS FOR ENTERPRISE: INNOVATION 2020

dura™ composites

Contents

Reference Guide

This quick Reference Guide refers to Dura Deck® Aluminium (Patent Application No. GB 22 01050.8), a range of interlocking aluminium A2 fl-s1 fire-rated decking boards manufactured by Dura Composites.

1. Compliance:
a) Aluminium: Meets specifications and guidelines for aluminium structures as recommended by AA ADM 1 and required by International Building Code (IBC).
b) Outdoor Exposure: Meets durability requirements of AAMA 2603.02.

2. Design:
Dura Deck Aluminium Positive-Drain is an 18mm decking profile with an A2 fl s1 fire rating featuring a unique design particularly suited for use with 'slide-on' cassette balconies, minimising the need for on-site finishing.

3. Materials:
6063-T6 Series grade Aluminium.

4. Finish Type:
Powder coating - Cedar RAL1019, Anthracite RAL7043, Mist RAL7001.

Available In 3 Colours

Anthracite

Cedar

Mist

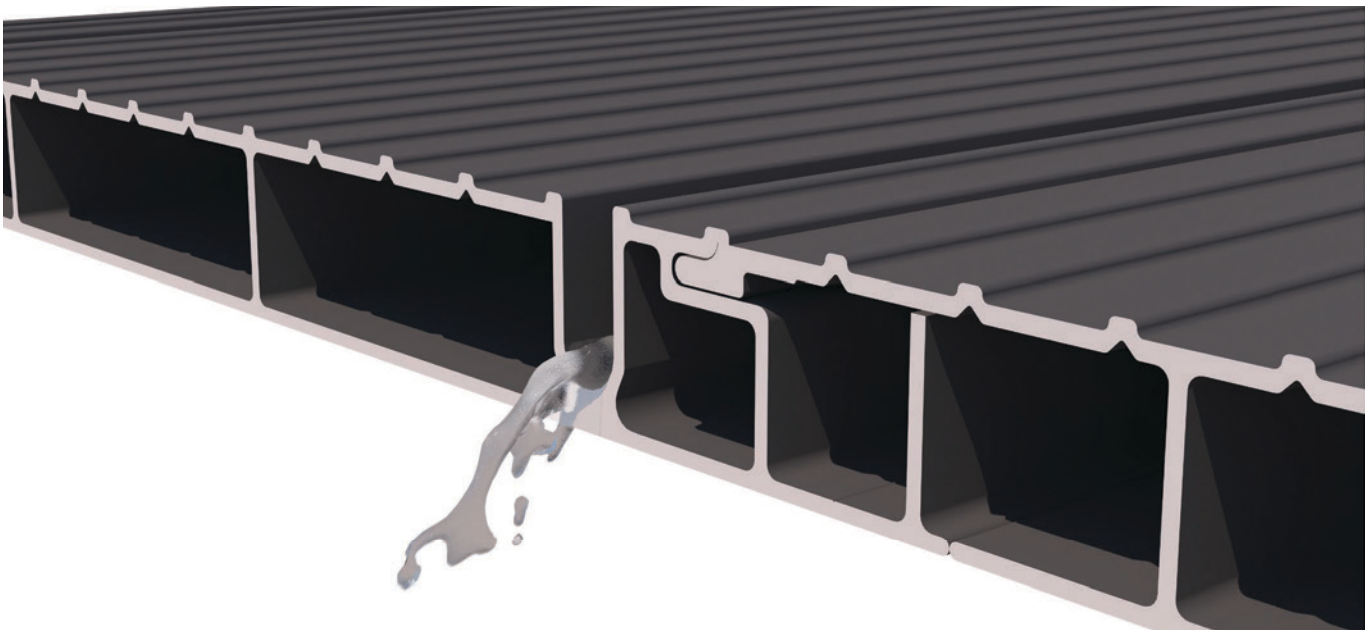
5. Hidden Fastener System:
Integral, no pre-drilling required.

6. Screw Hardware:
Dependant on substrate. Please consult your Dura Composites representative.

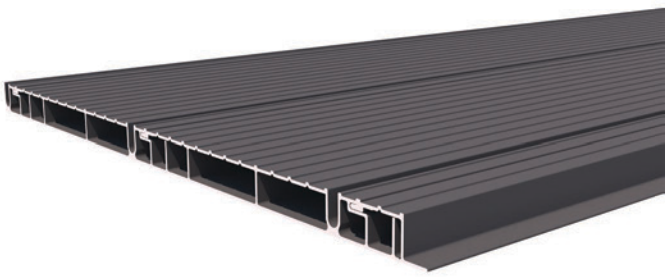
7. Load Strength:
2Kn Point Load
5Kn UDL per m^2

8. Max Span in mm:
Spans up to 1050mm centre-to-centre at 2kN point load (L/200).

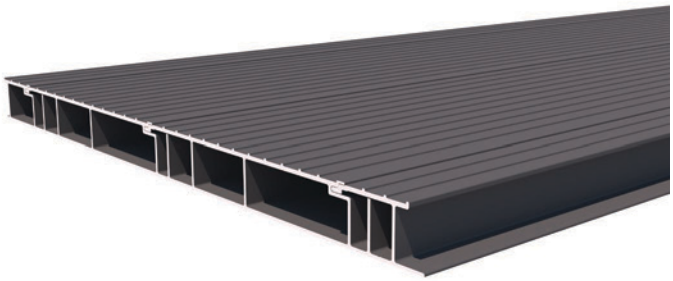
9. Drainage:
a) Fall/Pitch: 1:80 downward pitch recommended.
b) Overhang: (50 mm) overhang beyond header joist on drainage end, to prevent possible backsplash.



10. Available Lengths:
18mm Positive Drain: 5800mm extruded lengths.
27mm Positive Drain: 3660mm extruded lengths.



Positive Drain 18mm



Positive Drain 27mm

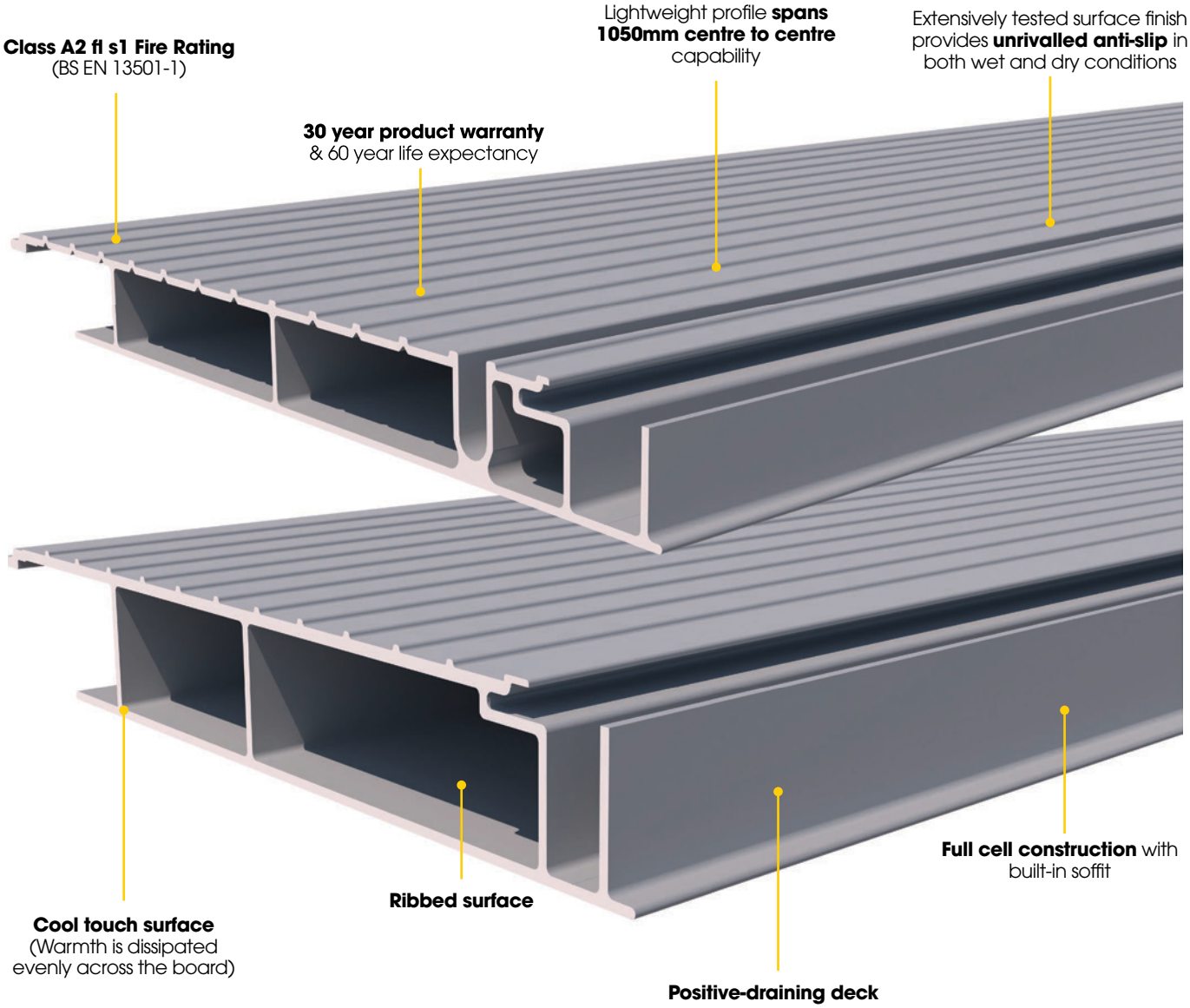
Materials

2

Decking Boards

Please read this Technical Installation Manual in its entirety before you start your project. You should follow these steps closely to ensure the durability and safety of your Dura Deck® Aluminium 18mm Positive-Drain decking.

Before you start, please take an inventory of your decking components and verify that you have all the items you will need to complete your decking project. Lay out the system prior to assembly, to confirm the order of installation.

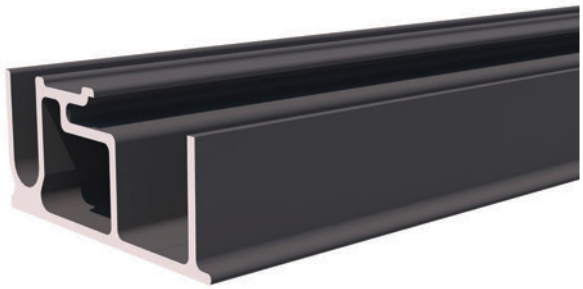


Trims

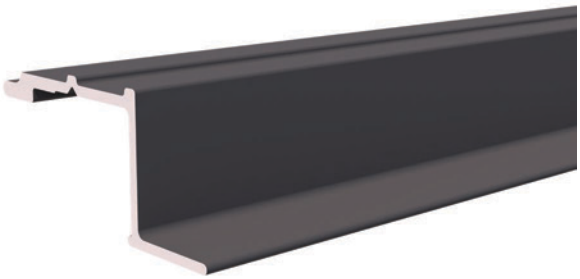
Dura Deck® Aluminium 18mm Positive-Drain has a range of intelligently designed trims and accessories so you can be sure of a simple and efficient way to start, install and finish your aluminium decking balcony or terrace design.

Our Starter Trim creates a solid foundation to start your deck securely and our Finishing Trim is a simple and neat way to terminate the deck.

Trims for 18mm Positive Drain



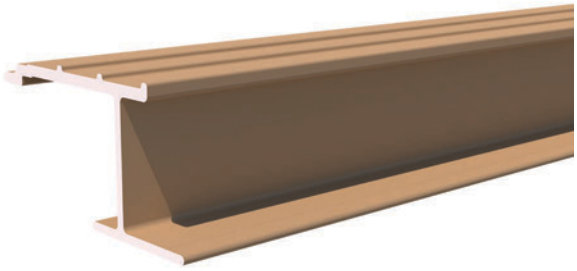
Starter Trim



Finishing Trim

Trims for 27mm Positive Drain

Starter Trim



Finishing Trim

Safety

Our decking solutions have 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 by a qualified professional with previous experience of working in landscaping and building environments. All installations must include the use of approved Dura Composites fixings or accessories, to ensure your warranty is valid.

To ensure safety during installation please:

- 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.
- Dispose of excess material safely as refuse.
- 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. If in doubt, please consult your Dura Composites representative.

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

Tools Required

Dura Deck® Aluminium 18mm Positive-Drain can be installed in environments using a number of standard tools. The list of tools and supplies you may need includes:

Measuring Tape

Drive Power Drill

Hacksaw

Circular Saw with carbide blade

12" Blade - 96 Tooth

10" Blade - 80 Tooth

7 ½" Blade - 60 Tooth

Suitable screws to affix decking to your chosen substructure

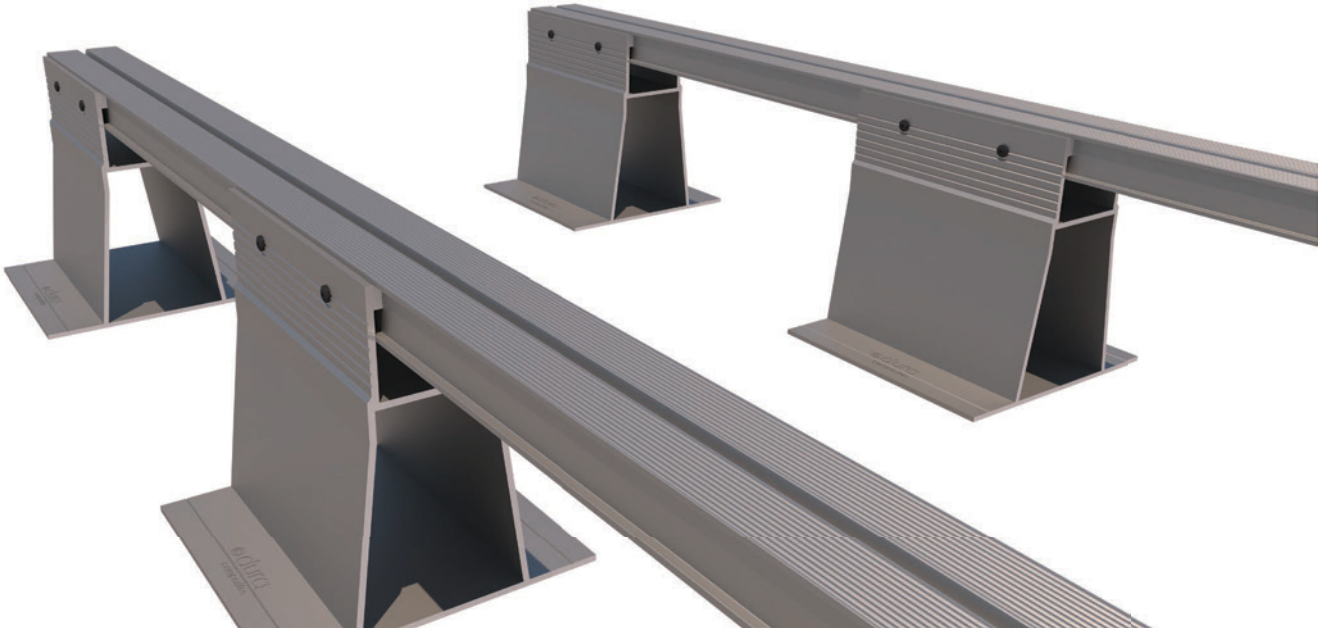
IMPORTANT: Only use a drill or drill driver on a low setting. Hammer settings or impact drivers are not compatible with the screw types used for Dura Deck installations and must not be used.

Substructure

3

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 fl s1 fire rating to BS EN 13501-1 flooring standards with their anthracite powder coated finish. An A1 rated mill finish is also available by special order.



Our Aluminium Bearers are the simplest and most durable sub-frame option. They have a long life expectancy and are uniform, making installation 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! Thanks to its patented design, 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 correct 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:

- Work out approximately how many boards width your deck will be, then round it up or down to the nearest board.
- 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 minimising the collection of 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 boards along their length.

Using Dura Aluminium Pedestals and Dura Bearers

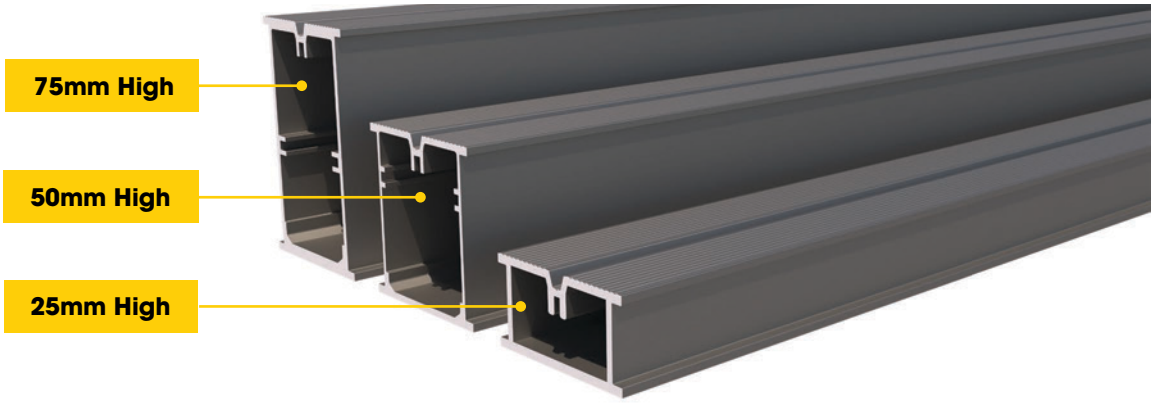
Dura Bearers offer a simple and long-life decking substructure solution for gardens, balconies and large commercial projects. Unlike timber subframes, which can twist, rot or warp over time, Dura Bearers are made from 6063 grade aluminium (T6) and have a greater strength-to-size ratio than traditional materials.

Available in three sizes (25mm, 50mm and 75mm), Dura Bearers can be installed directly onto hard surfaces, such as concrete or paving, as well as 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).

When combined with our Dura Pedestal range as a complete A2 fl s1 fire rated system, they can be used on sloping or uneven ground with gradients of up to 10° Degrees - which is equivalent to an amazing 1:6 fall!

For more information on the Dura Composites system, please visit **www.duracomposites.com/decking/decking-sub-structure/**

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	600
Aluminium Bearer 50mm (Anthracite Painted Finish)	50	48	3660	3.5	850
Aluminium Bearer 75mm (Anthracite Painted Finish)	75	48	3660	6.1	1500



Substructure Installation

Dura Pedestal's anti-glare anthracite colour powder-coated finish achieves a Class A2 fire rating in accordance with EN13501-1. When combined with our Dura Deck® Aluminium decking and aluminium Dura Bearers, a fully Class A2 fire-rated flooring system can be achieved. Dura Pedestals and Bearers are also suitable for use with our composite timber decking and GRP grating ranges, so you can get everything you need from one source, with fewer components to buy, unbox and install.

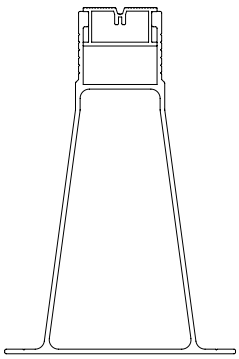
Dura Pedestals are available in 8 heights from 25.5mm to 222.5mm high and offer unrivalled choice for height variances when combined with our 25mm x 48mm, 50mm x 48mm and 75mm x 48mm aluminium Dura Bearers. Use any Dura Bearer with any Dura Pedestal to create 24 different combinations. Installation is faster, easier and more stable than with fiddly plastic pedestals. A precise height can be created (which can be as small as a 10mm adjustment when installing any bearer option in combination with the 25.5mm pedestal).

To determine how many bearers (aluminium or timber) you will require, you can follow the method below.

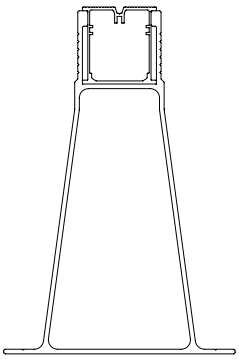
Begin by measuring the proposed deck area(s) - width length and height (from the ground). Based on the square meterage of the area(s) multiply this by 4 and add 10% for wastage, to determine the total linear metres of the deck bearers required. Divide the total linear metres of the bearers by the individual 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 x 4) x 1.1 = 132 linear metres of bearer
132Lm / 3.6m (length of bearer) = 37 bearers (rounded up)

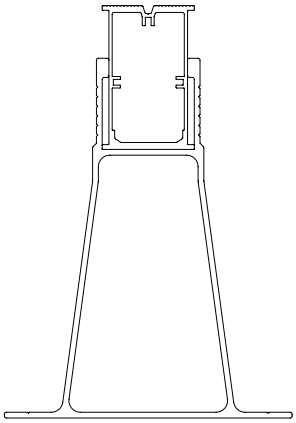
25 x 48 Dura Bearer Aluminium & 222.5mm Adjustable Pedestal



50 x 48 Dura Bearer Aluminium & 222.5mm Adjustable Pedestal



75 x 48 Dura Bearer Aluminium & 222.5mm Adjustable Pedestal



Aluminium Bearer Selection

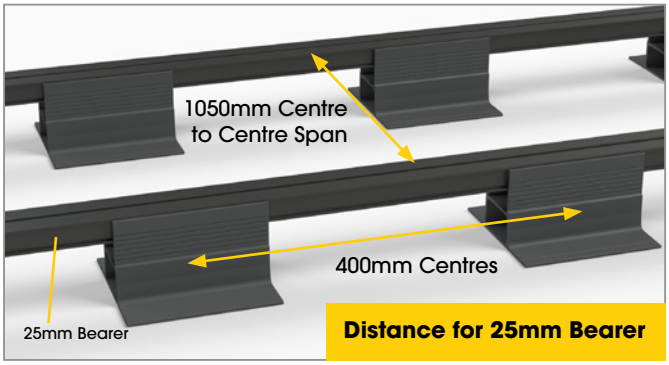
You now need to decide on the type of bearer profile you require (25 x 48mm, 50mm x 48mm or 75mm x 48mm) as this will determine the required structure support.

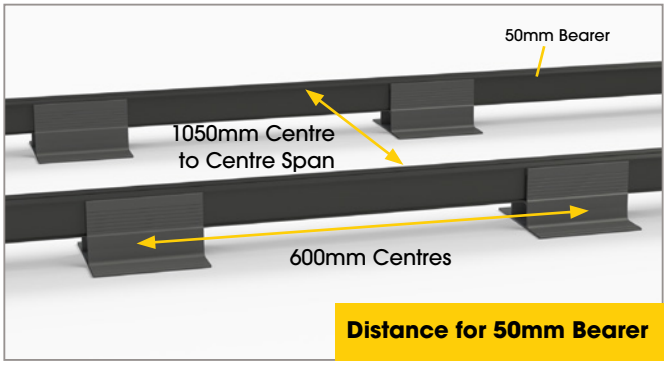
The allowable deck height and the ground conditions will also determine which support system would best suit your build, either:

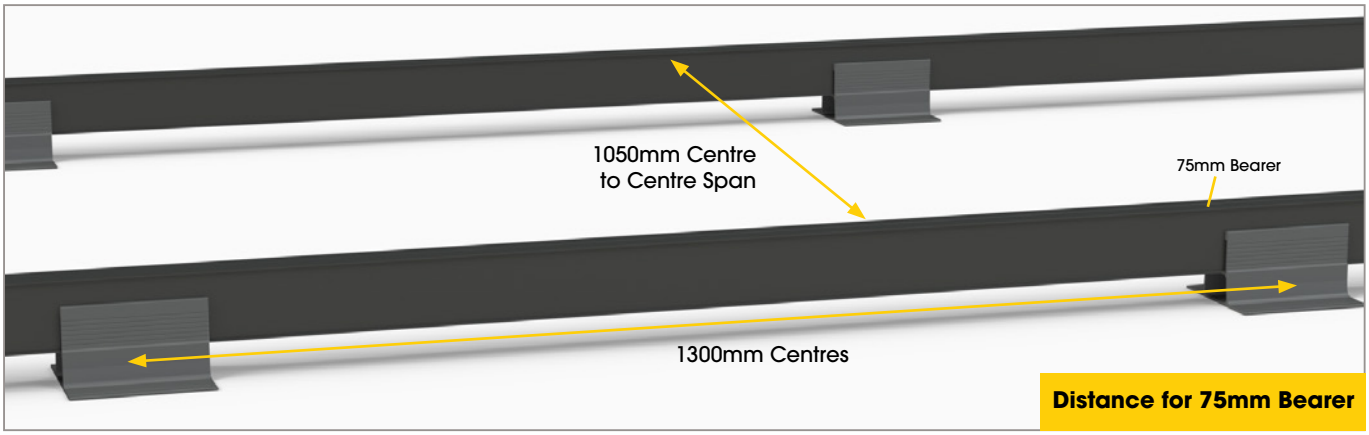
- 100 x 100mm posts to be cemented into soft ground, and attached to the aluminium bearers or;
- adjustable support pedestals placed on hard, flat ground.

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 as per the example below:







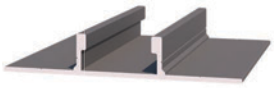
Aluminium Pedestals Selection

Aluminium Dura Pedestals have an A2 fire-rating and a unique patented design which helps overcome even the most complex of installation challenges. Available in 8 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.

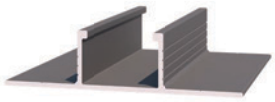
Unlike plastic pedestals, the Dura Pedestals have a single unit construction, with no fiddly separate components (such as bearer holders, slope correctors or spacers) to unpack and assemble. The tripod design features enhanced stability to mitigate the risk of rolling and can be butted right up to the 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.

Registered Design No. EU 007 827 746
Patent No. GB 2 589 392

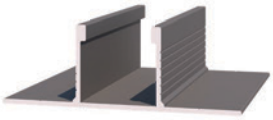
A2 Pedestal Options						
Description /Options	**Heights achieved with 25mm Bearer**		**Heights achieved with 50mm Bearer**		**Heights achieved with 75mm Bearer**	
	Min Height (mm)	**Max Height (mm)**	**Min Height (mm)**	**Max Height (mm)**	**Min Height (mm)**	**Max Height (mm)**
Aluminium Pedestal 25.5mm	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



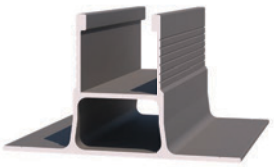
25.5mm High



36.5mm High



50.5mm High



85.5mm High

117.5mm High

152.5mm High

187.5mm High

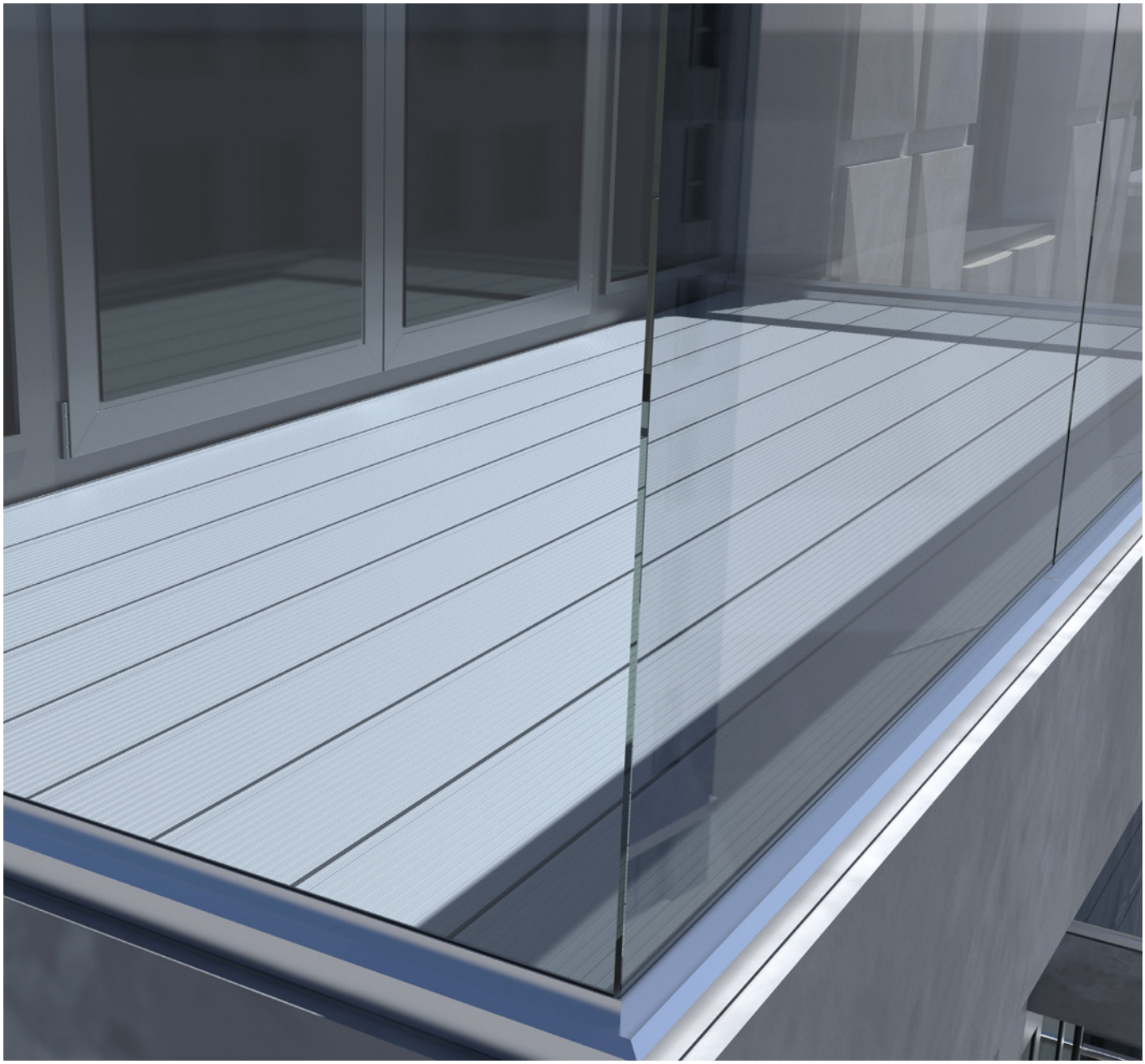
222.5mm High

Install Steps

4

In this section, you will find installation information for the below scenarios. If you have any additional install questions, please contact your Dura Composites Representative.

- Installing on Steel Balconies (page 12)
- Installing on Concrete/Parapet Balconies (page 16)



Installing on Steel Balconies

Ensure that all joists are thoroughly cleared of debris and dirt prior to commencing installation (Figure 1). To facilitate effective drainage, verify that you have factored in a compliant fall or pitch, directing liquid away from any location where the end of a board aligns with a wall. This critical step promotes optimal water runoff, preventing potential issues associated with water pooling.

Figure 1

Determine the appropriate side to start the installation of your Dura Deck Aluminium 18mm Positive Drain decking (ideally this should have been predetermined during the design and quoting process).

Figure 2

Step 1:
Position the starter trim and attach it to the joist with the appropriate screws for your substrate, screwing into every joist (typically 1000mm apart) as shown in Figure 2. Ensure this is properly aligned, because each subsequent decking plank will follow this alignment. For further information on suitable screws for your individual substrate, please contact your Dura Composites representative.

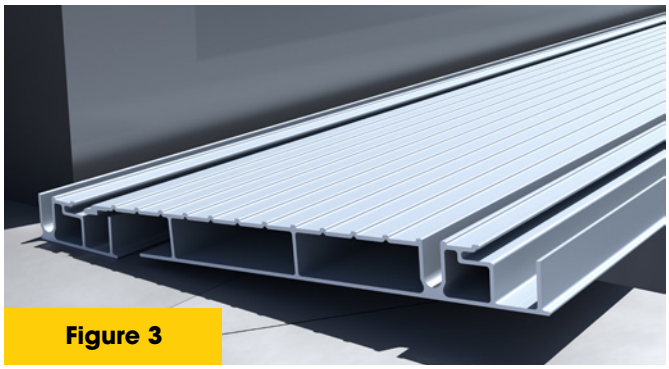


Figure 3

Step 2:
Once the starter trim is secure, install your main decking boards by sliding the tongue of board into the groove of the start trim (Figure 3).

Figure 3a

Step 3:
When the main board is secure and aligned, put screws into the screw channel on the main board, screwing into every joist (again, typically every 1000mm) as shown in Figure 3a.

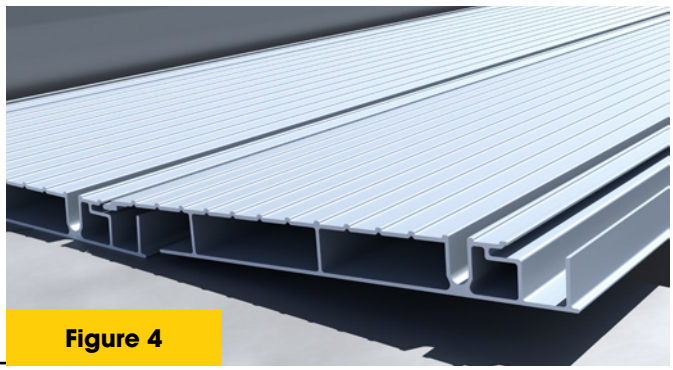


Figure 4

Step 4:
Add the next decking board by positioning it at an angle so that boards interlock as shown in Figure 4.

Step 5
Ensure screws are securely positioned (Figure 5).

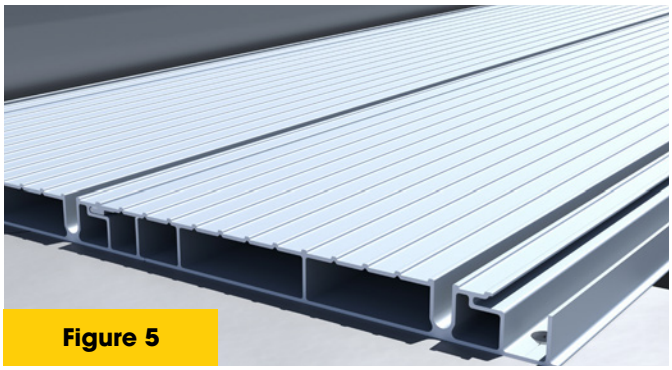


Figure 5

Step 6
Measure the distance travelled on each side every 1000mm to make sure that the boards remain square to the starting board (Figure 6).

Figure 6

Step 7
Continue to add each board to complete the required decking area. If the last board isn't the size you need to complete the installation, you may need to cut (or rip) it down lengthways, before affixing to the previous board. For best results, make an offset cut.

Make sure that the Dura Deck Aluminium board is adequately supported and that you leave room to add your finishing trim.

Figure 7

Step 8
Lay the trim along the edge of the decking, tucking it under the profile as shown in Figure 8.

Figure 8

Step 9
Screw through the edge of the Trim into the substructure as shown in Figure 9.

Figure 9

Step 10
Our optional extra Closing Trim provides a neat finish to the end of your deck and can be installed as shown in Figures 10, 11 12 and 13.

Once all decking components have been laid and fixed, your Dura Deck Aluminium decking area is now complete and can be enjoyed immediately.

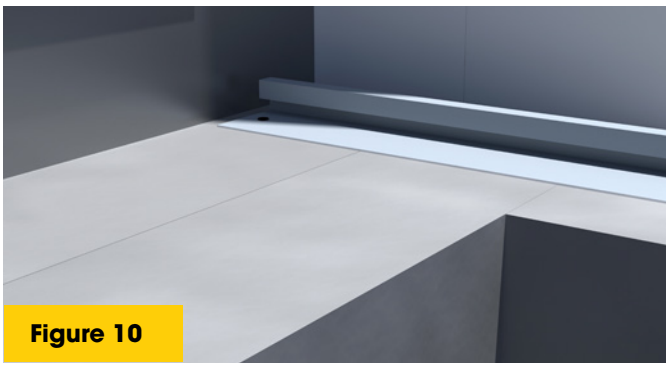


Figure 10

Figure 11

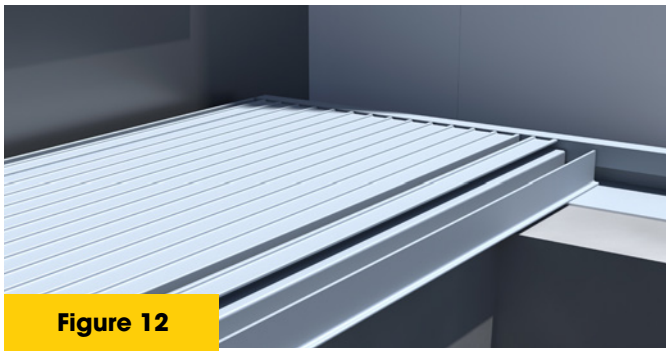


Figure 12

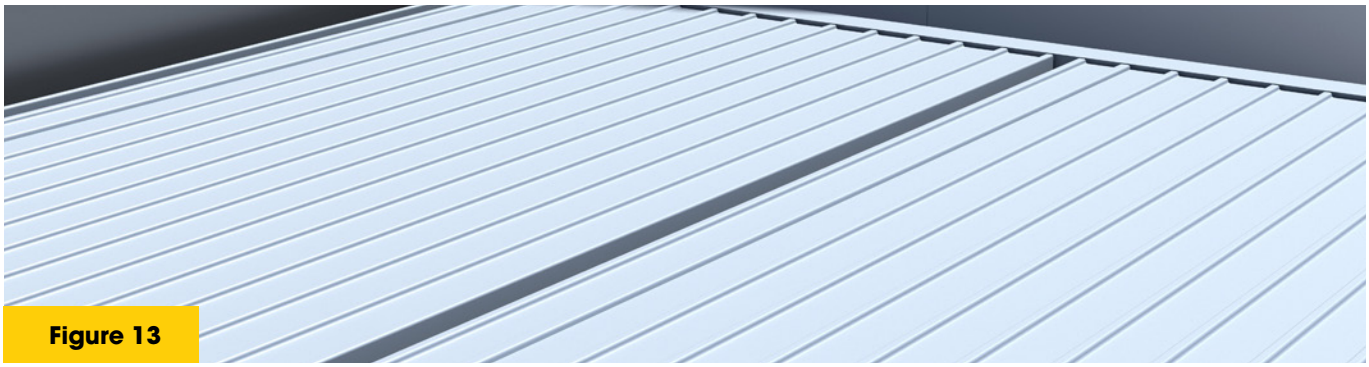


Figure 13

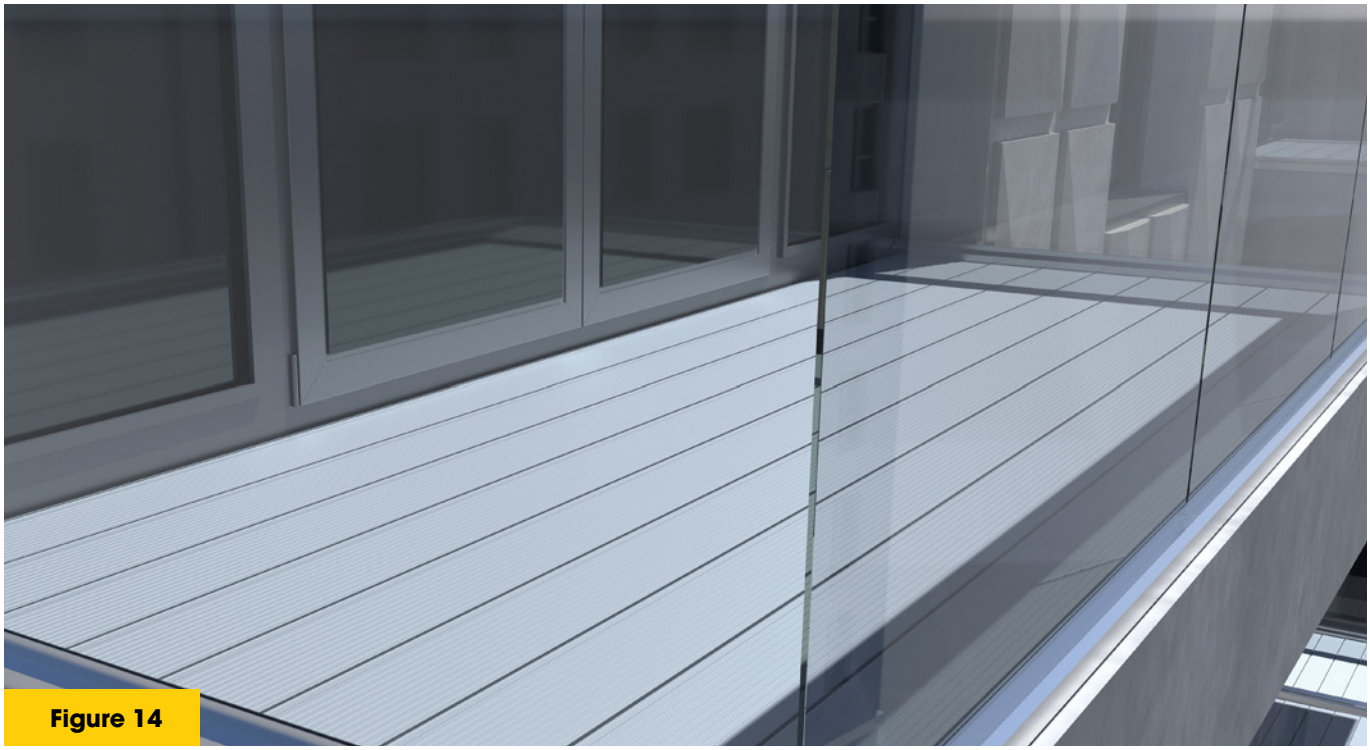
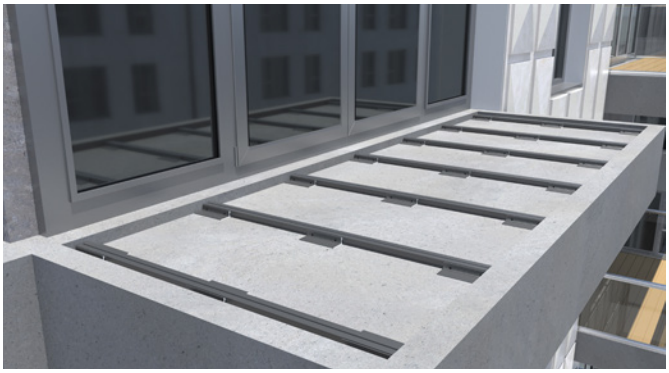
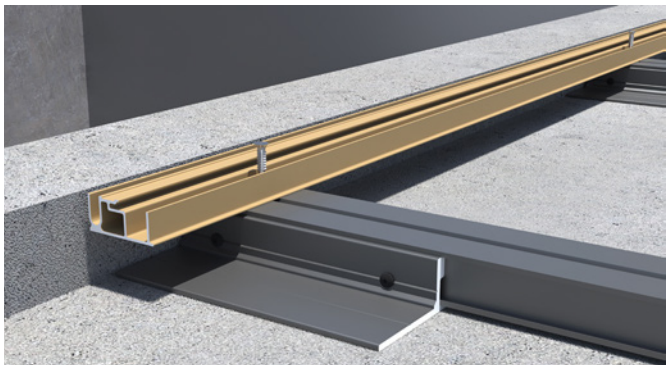


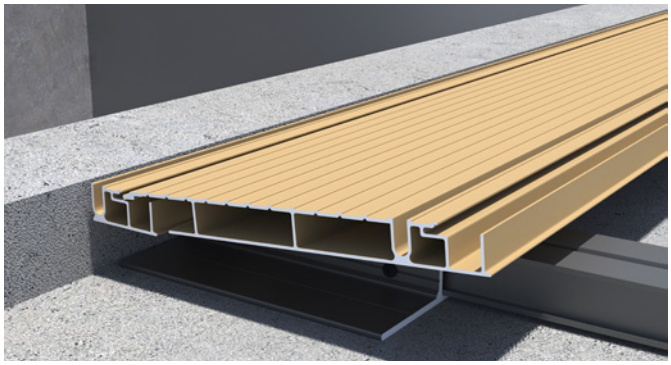
Figure 14

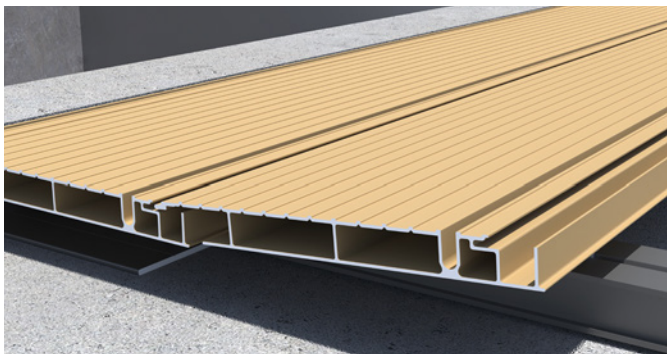
Installing on Balconies

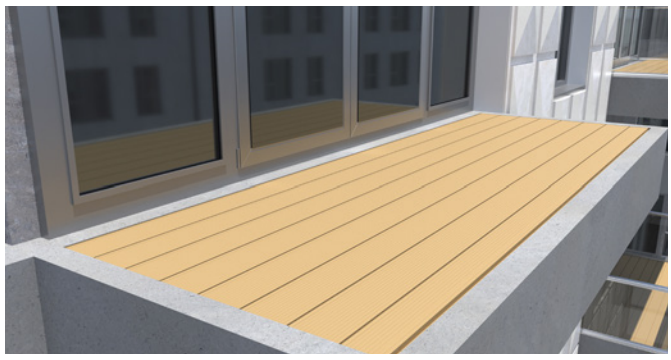
For information on how to install our aluminium substructure within a parapet balcony scenario, please consult our supporting Technical Installation Manual.

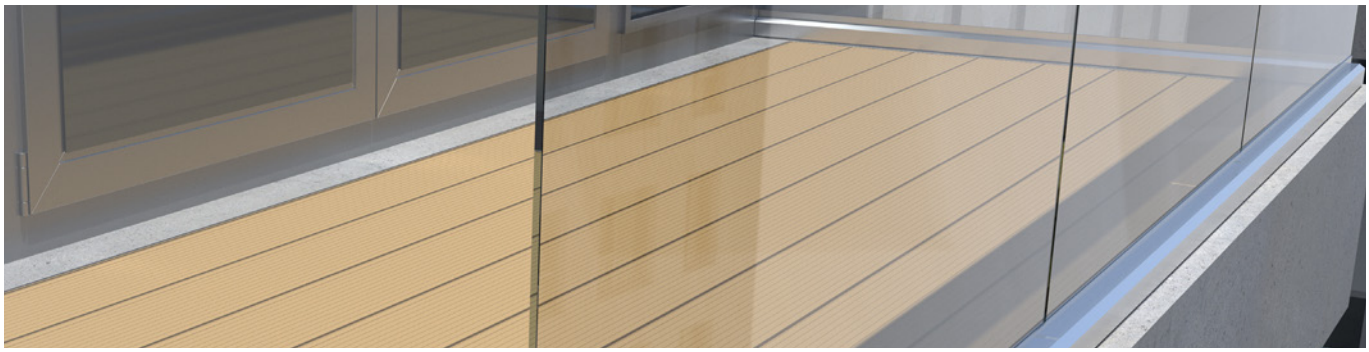












Data

Technical Specifications & Slip Resistance

Material
6063-T6 Series grade Aluminium.

Building/Project Suitability
- All Public & Private Buildings requiring A2 Fire Rated Decking
- Recessed Galvanised Steel Balconies
- Projected Galvanised Steel Balconies
- Recessed Concrete Balconies
- Roof Top Terraces
- Pub & Hotel Deck Areas
- Smoking Areas, Terraces
- Commercial Walkways
- Glide On Cassette Balconies

Dimensions

Product	Length (mm)	Height (mm)	Width (mm)	Weight (kg)
Board	5800	18	150	8.31
Starter Trim	5800	18	41	2.67
Finishing Trim	5800	18	40	1.35

Maximum Span, Centre – Centre Support
1050m span based on the more stringent 2.0kN point load @ 0.5% deflection (L/200) required by current building regulations.

Finish
Powder coating - Cedar RAL1019, Anthracite RAL7043, Mist RAL7001.

Fixing Method
Hidden Bi-Metallic Self Drilling Screws.

Recyclability
Durable and long lasting, our aluminium decking is 100% recyclable at the end of its use, making it an eco-friendly option.

Warranty
Dura Deck Aluminium 18mm Positive-Drain – 30 year warranty. 60 year life expectancy.

Material Specifications

Item	Method	Test Requirements	Test Results	Pass or Fail
Dry Adhesion	ISO 2409	Cross-cut test: GT=0.	GT=0.	Pass
Boiling Water Test	Qualicoat ISO 2409	No blistering in excess of 2 (S2) according to ISO 4628-2. There shall not be any defects or detachment. Some colour change is acceptable. Cross-Cut Test: GT=0.	No blistering and detachment on the surface. Cross-Cut Test: GT=0.	Pass
Acetic Acid Salt Spray Test	Qualicoat ISO 9227	No blistering in excess of 2 (S2) according to ISO 4628-2. An infiltration of maximum 16mm2 is allowed over a scratch length of 10cm but the length of any single infiltration shall not exceed 4mm.	No blistering on the surface. Over a scratch length of 10cm an infiltration of maximum is 3mm^2 and the length of and single infiltration is 1mm.	Pass

Anti-Slip Test Results

Sample	Direction	Condition	PTV
Anthracite	Principal	Dry	68
	45 Degrees	Dry	67
	75 Degrees	Dry	68
	Principal	Wet	62
	45 Degrees	Wet	61
	75 Degrees	Wet	61

Sample	Direction	Condition	PTV
Mist	Principal	Dry	71
	45 Degrees	Dry	68
	75 Degrees	Dry	69
	Principal	Wet	58
	45 Degrees	Wet	58
	75 Degrees	Wet	58

Sample	Direction	Condition	PTV
Cedar	Principal	Dry	69
	45 Degrees	Dry	66
	75 Degrees	Dry	66
	Principal	Wet	56
	45 Degrees	Wet	57
	75 Degrees	Wet	56

*(4S Rubber Slider) Pendulum Test Values (PTVs)

- Low Slip Potential (36+ PTV)
- Moderate Slip Potential (25-35 PTV)
- High Slip Potential (0-24 PTV)

Fire Performance

British Standards and European codes use different grading systems to class fire performance of materials, resulting in confusion for the industry. Dura Deck Aluminium products are designed to cut through the noise.

Some competitors may reach Class A2 when tested specifically with certain fire rated barriers but fail when following the install guide (due to lack of airflow). Our test was conducted with a void to replicate a site install, rather than being fixed to a fire rated barrier. Engineered to resist the ignition of fire the Dura Deck Aluminium range has been rigorously tested for consumer peace of mind. Dura Deck Aluminium achieves A2fl,s1 in accordance of BS EN 13501.

Customers can have confidence that Dura Deck Aluminium has been certified and tested by a recognised UKAS accredited body, satisfying current fire legislation; with testing carried out in an environment to closely resemble that of an actual installation for the avoidance of doubt. For buildings above 11 metres including dwelling houses or domestic properties, a minimum fire rating specification is required by law. This applies to both protected areas such as stairwells or other refuge points, and unprotected areas such as property boundaries or the boundaries with adjacent buildings.

The standard to which External Flooring/Decking materials must comply is known as EN BS 13501 and is the latest iteration of fire standards and improves on previous tests such as BS476 which were limited in both scope and classification.

Current guidance regarding dwelling houses and other buildings above 11 metres require a minimum classification of Class A2,s1. Dura Deck Aluminium has successfully achieved the superior classification of A2,s1 – in recognition of its lower smoke volume. This attribute, combined with its limited combustibility to flame spread mean that should the building be under attack from fire, firefighters' visibility would be less impeded, leaving them able to expediently deal with extinguishing the fire.

For more information or for technical advice, please contact us on +44 1255 443110.

Gap Guides

The tables below must be used to ensure the correct amount of space is left between each board during the installation process.

Dura Deck® Aluminium Recommended Gap Tables (Europe)

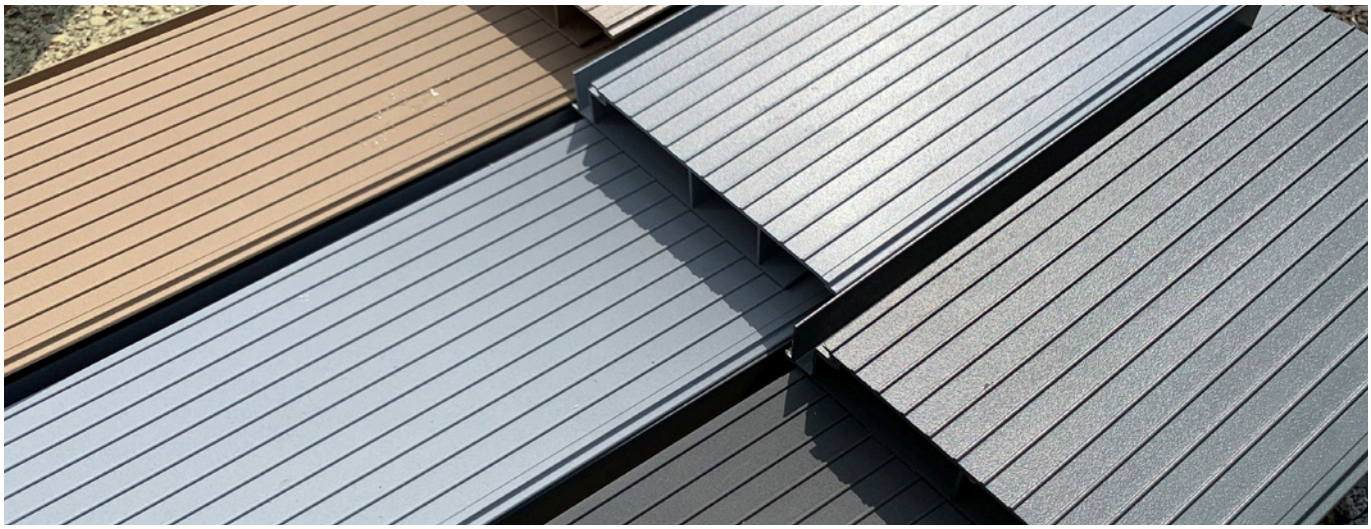
Installation Air Temp (°C)	Dura Deck Aluminium Expansion Gap Guide (mm)			
	3660mm Board	3000mm Board	2000mm Board	1000mm Board
-10	3.6	3.0	2.0	1.0
-5	3.2	2.6	1.8	1.0
0	2.8	2.3	1.5	1.0
5	2.4	2.0	1.3	1.0
10	2.0	1.7	1.1	1.0
15	1.6	1.3	1.0	1.0
20	1.2	1.0	1.0	1.0
25	1.0	1.0	1.0	1.0
30	1.0	1.0	1.0	1.0
35	1.0	1.0	1.0	1.0

*Assuming worst case scenario of aluminium range installed at -10°C and reaching +35°C

Dura Deck® Aluminium Recommended Gap Tables (Middle East)

Installation Air Temp (°C)	Dura Deck Aluminium Expansion Gap Guide (mm)			
	3660mm Board	3000mm Board	2000mm Board	1000mm Board
10	3.6	3.0	2.0	2.0
15	3.2	2.6	1.8	1.8
20	2.8	2.3	1.5	1.5
25	2.4	2.0	1.3	1.3
30	2.0	1.7	1.1	1.1
35	1.6	1.3	1.0	1.0
40	1.2	1.0	1.0	1.0
45	1.0	1.0	1.0	1.0
50	1.0	1.0	1.0	1.0
55	1.0	1.0	1.0	1.0

*Assuming worst case scenario of aluminium range installed at +10°C and reaching +55°C



Additional Info 6

Maintenance and Cleaning

Dura Deck® Aluminium 18mm Positive-Drain resists staining, fading or rotting, so will only require minimal cleaning throughout its life cycle. The best method to clean an aluminium deck is to wash it using a solution of warm water and non-abrasive, pH neutral detergent.

General Dirt and Debris
Spray with a hose to remove surface debris. Mop spilt oil/grease/food/drink as soon as possible. Use warm, soapy water and a soft bristled brush to clear dirt and/or debris from contours. Pressure wash to remove stubborn stains.

Household Cleaners
The powder coated finish requires a basic cleaning regime. Strong and abrasive household cleaners are harmful to powder coating and must not be used for cleaning purposes under any circumstances. Acidic, alkaline or alcohol-based cleaning products should also not be used. Stick to a non-abrasive, pH neutral detergent for best results.

Pressure Washing
Pressure washers up to 1500psi may be used to maintain the cleanliness of your Dura Deck Aluminium 18mm Positive-Drain. 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 18mm Positive-Drain is a great choice if you're looking for sustainable solutions. 100% of the finished product can be recycled repeatedly, meaning it need never ends up in landfill. If unsure, always contact your local governing body/council for more information.

September 2025

Head Office

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

Tel: +44 (0)1255 443110
Email: info@duracomposites.com

www.duracomposites.com

dura™ composites

Unlocking the Power of Composites™
» for High-Rise Balconies & Terraces