Technical Installation Manual Dura Deck® Range



Strong and durable, Dura Deck® looks and feels just like natural wood. Our unique formula provides long lasting composite timber decking that is environmentally friendly, easy to install and requires minimal maintenance compared with traditional timber. To ensure you get the best results from your Dura Deck®, we recommend working with a professional contractor with previous decking installation experience.

Please ensure that you activate your product warranty after purchase by completing the online form at www.duracomposites.com/warranty within 30 days.

If you require any further information or support, please visit www.duracomposites.com or call us on +44(0)1255 440298 where one of our knowledgeable staff will be happy to help.

Unlocking the Power of Composites™

>>> for Outdoor Decking Areas

Tel: 01255 440298 | www.duracomposites.com

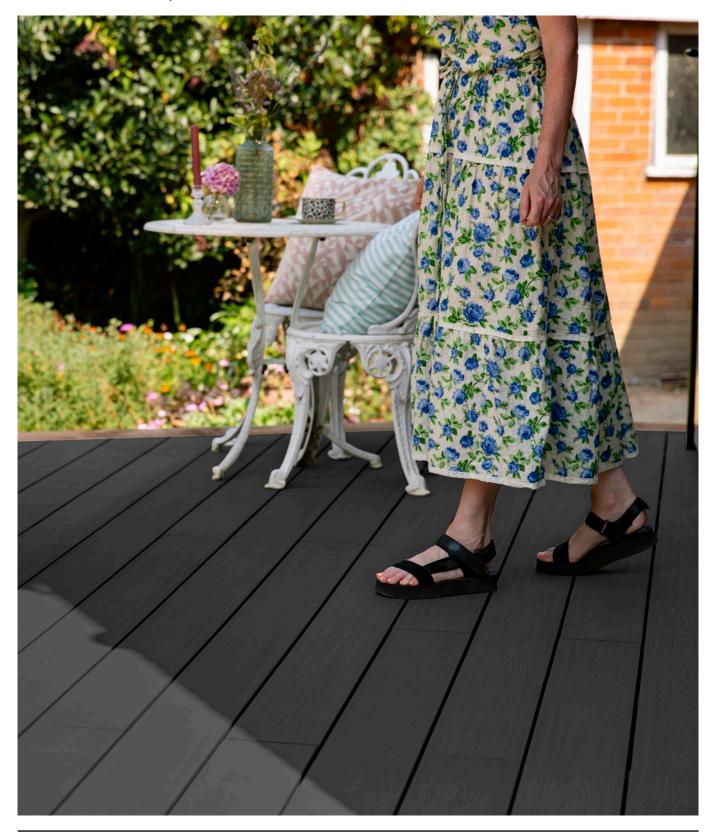




Contents

I. Produ	ict Range Selector	
••••••••••	Dura Deck® Ranges	3
	Choosing The Right Dura Deck® Range	4
2. Mater	rials	
••••••	Dura Deck® Boards	6
	Finishing Options	6
	Fixing Screws & Bearer Systems	7
	Aluminium Pedestals & Bearers	8
3. Prepa	ıration	
	Safety	9
	Tools Required	9
	Choosing the Location & Deck Size	10
	Measuring the Area	10
	Deck Design	10
	Planning the Deck Location	11
	Deck Direction	11
	Troubleshooting	11
	Site Preparation	12
4. Install	lation Steps	
	The Sub-Frame	13
	Using Dura Aluminium Pedestals & Bearers	14
	Substructure Installation	15
	Aluminium Bearer Selection	16
	Aluminium Pedestals	17
	Decking Installation	18
	Troubleshooting	20
	Optional Steps	21
	Deck Trim Options	22
5. Data		
	Technical Specifications	24
	Eco Load & Deflection Specifications	26
	Resist Load & Deflection Specifications	27

Gap Guides	28
Maximum Spans	30
Information	
Maintenance & Cleaning	31
Safety Data	3.3



6. Additional

Product Range Selector



Dura Deck® Ranges

The Dura Deck range of composite decking is a low maintenance, eco-friendly alternative to traditional wood decking and comes in two ranges to suit every budget and project scenario.

Dura Deck Flip is our premium composite decking choice. It features our most beautiful surface ever and is designed to achieve the most natural wood-look on the market. With one colour on each side of the board, you can experiment with both colours in your deck design or 'flip' your deck at a later date for a whole new look. The decking is produced via a co-extrusion process where a 360 degree outer armour is used to protect the core of the deck from the elements. As a result, Dura Deck Flip is fire resistant to Class C, colour fade resistant, strength load resistant, stain resistant and also highly slip resistant – making it perfect for a range of applications.

Dura Deck Eco has a more traditional appearance and features grooves on one side and wood grain on the reverse. Available in Teak, Charcoal and Stone, the boards come in two widths 146mm and 295mm) and their manufacturing process results in some of the lowest water absorption rates in the industry thus minimising the risk of over-expansion. The double width board of the 295 can allow installs to be completed in half the time, saving labour and cost.

Both Dura Deck Flip and Dura Deck Eco feature recycled hardwood content and are available as FSC® 100%.

The following pages will help you select the most suitable Dura Deck range for your project requirements.

Features

- Natural Wood Look and Feel
- Concealed Fixings
- Doesn't Rot, Splinter or Warp
- UV Colour Stable
- Recycled Content
- Anti Slip Surface
- Water Resistant

Benefits

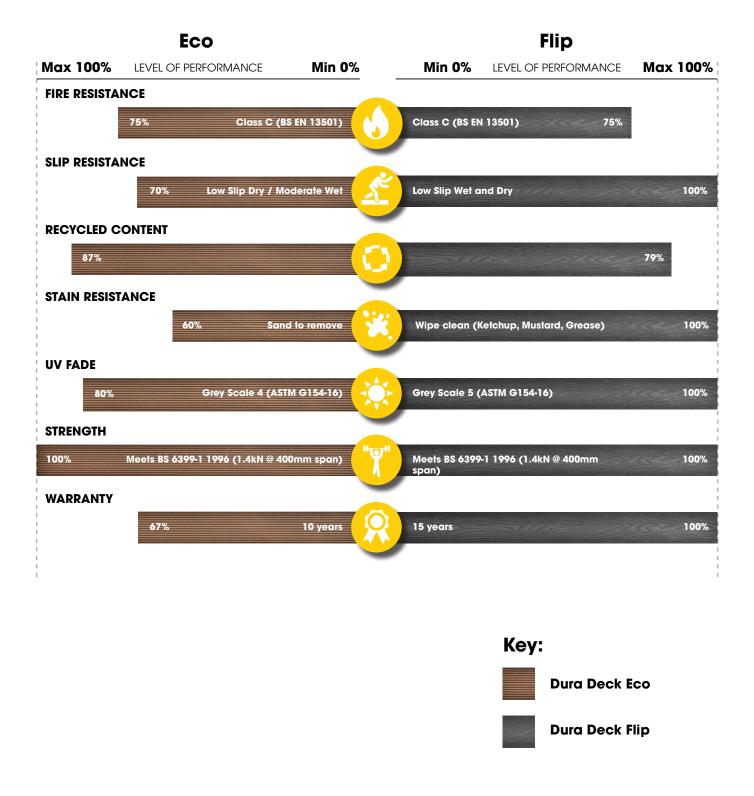
- Ideal Wood Replacement
- Barefoot Friendly
- Minimum 10 Year Warranty
- Looks Fresh For Years
- Environmentally Friendly
- Prevents Slips, Trips and Falls
- Rain and Swim Area Friendly



Choosing The Right Dura Deck® Range

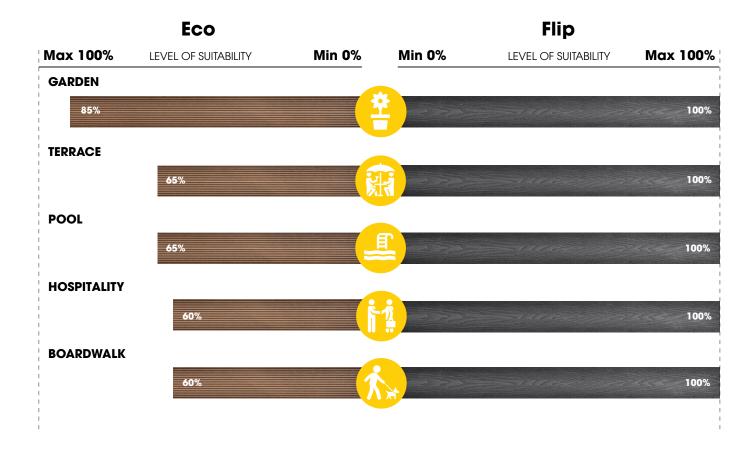
Performance Benefits Selector

Comparison graph to show performance benefits for Dura Deck Eco vs. Flip.



Application Suitability Selector

Comparison graph to show suitable applications for Dura Deck Eco vs. Flip.





Materials



Dura Deck® Boards

With so many colours, plank widths and finishing options available, Dura Deck is able to meet the needs of almost any landscaping application.



Dura Deck® Eco

Eco 146: Width: 146mm Depth: 25mm Length: 3660mm

Eco 295: Width: 295mm Depth: 25mm Length: 3660mm



Dura Deck® Flip

Flip 150: Width: 150mm Depth: 25mm Length: 3660mm

Finishing Options



Eco 146 & 295 Fascia Board

Width: 230mm Depth: 9mm Length: 3660mm



Flip 150 Fascia Board

Width: 180mm Depth: 10mm Length: 3660mm



Colour Coded End Caps

End Caps available for Eco 146,

Eco 295, Flip 150

Fixings, Screws & Bearer Systems

Dura Composites' innovative subsurface fixing systems means no nails and screws need to go through the deck itself, creating a smart, uniform and barefoot friendly deck. Our unrivalled range of fixings cater for a wide range of installations in different environments. Our expert team and helpful video, which can be found on our website, can provide further guidance on appropriate use of these fixing solutions and screw types.

Universal Fixings



6mm Gap Fixing Clip DDFX208

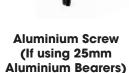


Start/Stop Clip DDFX209



Black Screw (If using C16 Timber Bearers) 25mm: DDFX007

50mm: DDFX006



30mm: DDAS206 38mm: DDAS207

Additional Fixings



Central Fixing Clip DDFX207



Double ClipProduct Specific



Half ClipProduct Specific

Bearer Systems



Aluminium
Substructure System
Further explained on the next page



C16 Treated Timber



Adjustable Pedestal
Further explained on the
next page

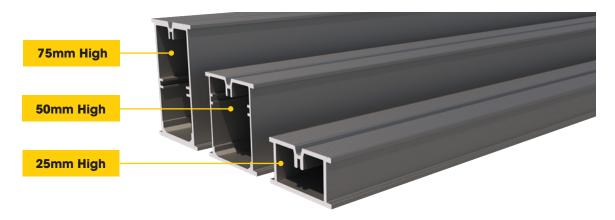


Pedestal Screw 19mm: DDAS205

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 /Options	Heights ac 25mm			chieved 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



50.5mm High



85.5mm High



117.5mm High



152.5mm High



187.5mm High



222.5mm High

Preparation



Dura Deck Eco & Flip 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 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 children away from the work area until the job has been completed and ensure tools have been stored safely.
- Refer to the operator's manuals for safety guides for all power tools being used.
- When handling Dura Deck composite timber, always wear gloves with additional eye protection and work in a well-ventilated area.
- Do not burn composite timber off cuts. Dispose of them safely as refuse or speak to your Dura Composites representative for help and advice.
- Wear eye protection when pressure washing or scrubbing.
- Dura Deck is NOT intended for use as columns, support posts, beams, joist stringers or other primary load bearing members.

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

Tools Required

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



Measuring Tape



Spirit Level



Sawhorse/Bench



Combination Square



* 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.

Choosing the location and size of your deck

First you will need to:

- Choose where you wish to install your deck.
- Measure your area to get your dimensions.
- Choose which decking boards you want to use.
- Decide on the orientation of your deck (i.e. the direction the boards will run). Please be aware that very large or raised decks may require planning permission. Raised decks should not be built with the deck level more than 600mm above ground level without specialist advice.

Measuring the Area

Once you have decided on the location of your deck, you should measure the length and width of the total area. Using a string line and pegs into the ground is a great way to measure and visualise your deck. Break down the area into smaller rectangles if you intend to build an unusual shape. Please refer our online tools to assist with this process.

Deck Design

Now that you know the size of your deck, next you must decide which deck board(s) you plan to use and which direction you wish the boards to run in each area. Once you have decided this, you can determine the length and quantity of bearers required. (We recommend our Dura Deck Aluminium Support System to achieve ultimate longevity).

You should avoid installing heavy objects such as hot tubs or large planters on your Dura Deck decking area or balcony unless the underlying support bearer system has been suitably designed by a structural engineer and arranged to absorb any elevated direct load from above. For advice on your planned deck design, please consult your Dura Composites representative.

Tip: We advise that the decking boards are stored on site at least 72 hours before installation, to allow the composite to acclimatise. When the boards arrive, lay them on a ground sheet and keep them covered.



Planning the location of your deck

If you are going to build your decking next to your house, make sure it's below the damp proof course and that you don't cover any air bricks. You will also need to make sure that you have incorporated a fall in the framework that runs away from the house to aid water run off.

Deck Direction

It's important to decide on the direction you wish to install your decking boards as early as possible, as this will limit cutting and wastage and will help you to be as accurate as possible when ordering the materials you need.

Horizontal

Use the length of the boards to emphasise width. It is most common, and easiest, to lay your deck 90 degrees to the direction of the bearer sub-frame. Our unique design enables the same 400mm centre-to-centre span of to be used whether you plan to install Dura Deck residentially or commercially.

Diagonal

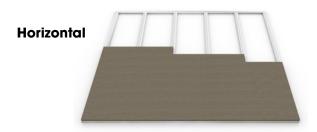
You can lay diagonally at a 45 degree angle to the bearer, however please note that the deck span will be reduced and therefore your subframe spans should be set accordingly (see page 30). If you are looking to maximise the slip resistance of your deck, it's better to orientate the boards at right angles (90°) to the majority of the footfall so that you get more grip underfoot. Full slip resistance data for each of our Dura Deck ranges is readily available in our literature.

Standard board lengths are 3.66 metres long. Also, bear in mind that the extra gapping required for larger boards may impact the overall look of the deck.

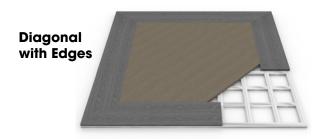
Tip: Cutting across a board is much easier than cutting along its length. Bearers run at 90° to the deck boards. Keep this in mind – the fewer cuts, the easier & faster the install.

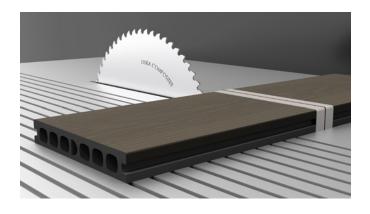
Trouble Shooting

When cutting Dura Deck Resist across its width or length, if the blade catches the outer protective armour it may cause it to rip it unevenly, causing "tear out" - this can ruin the look of your project, however, it can easily be prevented. Firstly, always ensure you cut the Dura Deck Resist board face down, so the blade won't mark the surface during cutting. Tear out occurs when the blade exits the top side of the board and catches the protective armour - to prevent this simply apply masking tape to the top side of the board prior to cutting (see image opposite). Once the board has been cut to size, remove the masking tape to reveal a cleanly cut edge.









Site Preparation

Before work commences, it is recommended that the site be compacted with a compactor plate (available at most hire outlets and hardware stores) to reduce setting.

The site must be free draining or have a gradient of 1 in 100 (1%) which is equivalent to 10mm of fall for every 1m of deck to allow water to run off otherwise there is a high risk of damp and mould build up beneath. If the area you have chosen is covered in grass, you can either remove the turf or cover it with a weed barrier (as long as its edges are tucked deep into the soil using an edging spade). If your deck is to be set at ground level, then removal of 100mm of top soil is recommended, replaced with equivalent 100mm of compacted gravel/hardcore or crushed concrete. This provides a very solid but free draining site on which to build the sub-frame. Never install Dura Deck directly onto a solid surface without supporting bearers. A minimum 22mm airflow and drainage gap beneath the deck is crucial to its longevity. The subframe is discussed further in the next section.



The Sub-Frame

Dura Deck can be installed on any existing structurally sound sub-frame, provided the necessary spans are adhered to as per manufacturer guidelines. See span tables on page 30. The main options are an Aluminium Substructure System (preferred) or C16 treated timber.



Aluminium Substructure System



C16 Treated Timber

For all sub-frames, please note the following:

- A sub-frame allowing a minimum of 22mm 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.
- Some wooden frames use a post and beam style construction. With this arrangement, the support posts sit in or on concrete footings or slabs. Please refer to the Span Table on page 30 to select appropriate spacings for bearers depending on the type of Dura Deck used.
- 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. For example, 10 boards of Dura Deck Type 146, allowing 6mm gaps in between each board is 1514mm. 10 boards of Dura Deck Type 295, plus 6mm gaps in between each board is 3004mm.

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

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 25.5mm bearer/joist cradle 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 www.duracomposites.com/composite-decking/aluminium-pedestals-and-bearers/



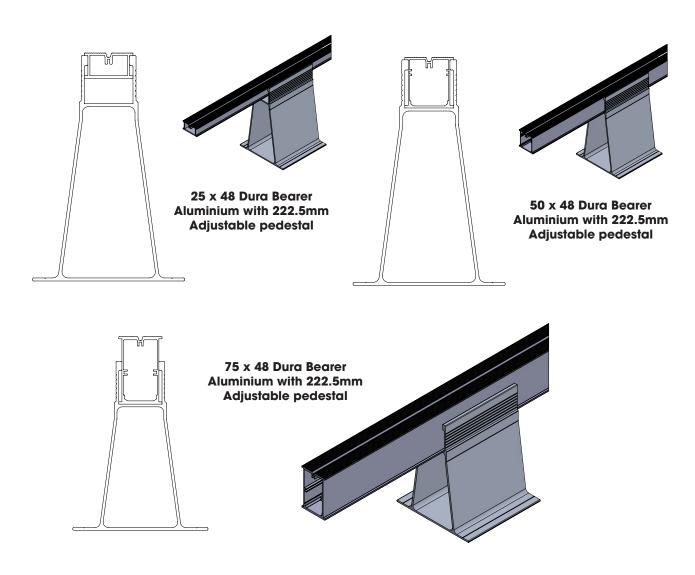


Substructure Installation

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 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: $(30m^2 \times 4) \times 1.1 = 132$ 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 423601 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 Eco 146 and Flip 150 (Fig 1.1)

550mm Centre - Centre for Dura Deck Eco 295 (Fig 1.2)





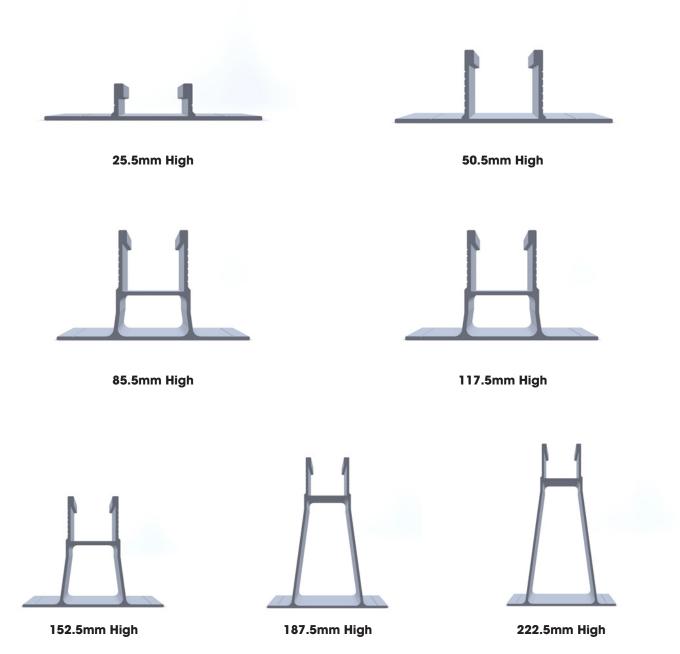


Aluminium Pedestals

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.

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



Decking Installation



A: Parallel to Wall

Mark boards to be cut to size using non-permanent marker/ pencil. Screw Start/Stop Clips to bearers ensuring 6mm gap to wall and consistent alignment. Start the deck against the house or wall and work outwards. Use one Start/Stop Clip per bearer and attach using Dura Composites Deck Screws. Make sure that the clips hold the deck board securely.



B: Using Standard Fixing Clip

Position the standard fixing clip into the side channel of the board and screw down. Make sure they 'pinch'. Push the next board into place and repeat. Ensure you check the alignment of the boards each time.



C: Overhang

Should your design detail require the decking planks to overhang (cantilever) the last joist, this is possible with a maximum dimension of 50mm over the last supporting joist.

D: Centre Clips

For installations where extremely high deck temperatures may occur, where temperatures differ from board to board or where butt joint gaps must be consistent. The Centre Clip is designed to equalise the expansion and contraction of the deck to provide similar gaps at each end. The Centre Clip should be secured onto the joists closest to the centre of the board and should replace the standard fixing clip for this fixing position only. The Centre Clip grips the board tightly at this point ensuring little or no movement at the centre of the board and therefore forcing equal expansion either side of the Centre Clip. The net effect is that butt joint gaps will be more consistent despite high and fluctuating temperatures.

E.1: Laying the second to last board – when the decking area isn't framed on either side

If the decking area isn't framed by a wall or house on both sides, secure standard clips on both sides and slide the second to last board into position. Make sure you leave an adequate gap of 6mm between any abutting board.

E.2: Laying the second to last board – when the decking area is framed on either side

If the decking area is framed by a wall or house on both sides and prevents sliding a board into position you will need to fix the final board. Insert fixing clips into the grooves of the board and slide them down the length of the board into position with a screwdriver.

F: Butt Joint

A Butt-Joint of a board should only ever lay across a bearer and we recommend the use of double bearers for extra support where possible, or an optional double clip.

Make sure you leave a sufficient gap between boards to allow for expansion and contraction as temperatures change. Refer to the gap table on pages 28-29 for further information.





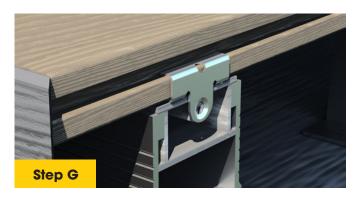






G: Transverse from Wall

Use one start/stop clip at the ends of the bearers ensuring consistent alignment. Where the boards meet on the first bearer against a wall, use a half clip per board and fix using Dura Composites deck screws.



H: Finishing Option - Fascia

When using fascia to finish a decking area, screw boards into bearers or substrate structure at 200mm – 400mm intervals, using 25mm elongated holes for to allow for contraction and expansion. Do not screw directly into the face of the hollow deck boards (see page 22).



I: Fixed Structures/Posts

Where boards meet an adjoining fixed structure/post, please refer to the gap table (pages 28-29) or leave a 6mm gap, whichever is the larger.



Trouble Shooting

When placing screws into the hidden fixings, you must ensure that you do not over-tighten the screw as this will prevent the boards from naturally expanding and contracting. If screws are not correctly seated this will INVALIDATE THE WARRANTY.

Tip: Tighten screws using a low speed, high torque setting on a cordless drill driver. Establish the best torque setting to prevent the screw driving through the hidden fixing clip on an isolated section of joist material. Once the correct setting has been found use this setting on the fixing clips.

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.

Please note: screws should NEVER be driven into the face of Dura Deck hollow boards. To screw into Dura Deck solid boards, they MUST first be predrilled.

Only Dura Composites sub-surface fixing clips and decking screws should be used to install Dura Deck. Installation using any other fixing methods will INVALIDATE THE WARRANTY.



Correctly Seated Flush Screw



Incorrectly Seated/ Overtightened Screw

Optional Steps

Centre Clips

All composite decking expands in warmer weather and contracts in cooler weather, and for installations where extremely high deck temperatures may occur (for example in south-facing gardens or in areas with glass balustrading), our Centre Clips should be used.

The Centre Clip is designed to equalise and control the expansion and contraction of the decking boards to provide similar gaps at each end. If you need two deck boards to meet end to end (if your deck is longer than 3.66m for example) this will create a "butt" joint. Double bearers should always be used for extra support when butt-jointing.

The Centre Clip should be secured onto the joists closest to the centre of the board and should replace the standard fixing clip for this fixing position only. The Centre Clip grips the board to ensure little or no movement at the centre of the board and therefore forces equal expansion either side of the Centre Clip, meaning that your butt-joint gaps are more consistent.

A visual example is the correct location of the Centre Clip in an example scenario is shown below:

Tip: Fix the Centre Clip in the most central point of each board of the decking area, with the teeth of the clip fitted into the groove of each board length.

Breaker Boards

You may wish to use a breaker board to reduce the visual impact of a large deck and the size of butt joints for long boards. Install a Dura Deck board at 90 degrees to the direction of the deck. The bearers will need to be adjusted to suit so that each side of the breaker board is supported by a bearer.

Finishing Options

End Caps. Place colour coded end caps to finish deck. See page 23 for details.









Deck Trim Options

Dura Composites Fascia Board

To complete your deck, use Dura Composites Fascia Board to cover the edges of your deck and the sub frame. If your deck design includes stairs, you can use Dura Composites Fascia Board (or Dura Deck Solid Boards) for the step risers.

Dura Composites Fascia Board is made from the same materials as Dura Deck, ensuring the same colour fade resistance and longevity as the deck boards themselves.

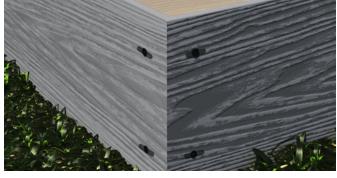


Unlike Dura Deck, Fascia Board can be fixed through the surface of the Fascia using Dura Deck Screws, directly into the edge of the decking boards, into the sub frame and/or the concrete pads. When screwing fascia boards into position **always** drill elongated pilot holes to avoid splitting.

Note that screws can be inserted into the side of the Dura Deck boards but not into the ends of the boards, (again by pre-drilling elongated pilot holes). Insert 2 screws along the Fascia Board at intervals of between 200mm and 400mm. Dura Composites Fascia Boards measure 230mm x 9mm (Type 146, 295) or 140mm x 10mm (Type 150).



Always drill elongated pilot holes if screwing into the edge of the decking and then screw into the wider points of bearers.



Screw into the concrete slabs/brick.

Dura Composites End Caps

In some instances, Dura Composites End Caps can be used to cover the board ends and provide a sleek look. Dura Composites End Caps are available in matching colours and simply slot into place. For longevity and to prevent insect nesting, they should be glued into place with a suitable adhesive, such as Aro-Bond 811 HV which Dura can supply.



Gapping Spaces for Butt Joints

If your deck is longer than 3.66 metres, butt joints will be required. These joints should be staggered, as shown in the drawing below, to hide any minor gapping imperfections (or a breaker board can be used). Always ensure boards start and end on a bearer. See pages 28-29 for gapping requirements for butt joints. For best results allow deck boards to acclimatise to the install site for 72 hours and also remember that deck boards laid in the sun without protection will have expanded prior to install whereas boards in the shade will not have expanded. Try to store and pick the boards consistently especially during the summer months when maximum expansion occurs.



Data



Technical Specifications

Definition

Range of decking products produced from Wood Polymer Composite (WPC) which is manufactured by an extrusion process using a mix of recycled plastics and hardwood wastes with various bespoke additives.

Applications

WPC is an immensely versatile material which combines the traditional appearance of natural timber with the durability and resilience of an engineered composite. Given it can be produced in a virtually unlimited range of colours and huge range of profile sections, the engineer can create a product or component suitable for many applications.

Benefits

Natural wood appearance and feel; lightweight; low maintenance; no warping, rotting or splintering; UV stable; fire resistant; environmentally friendly; slip resistant and universal/ concealed fixings. WPC products compete very favourably on a life cycle cost basis versus traditional materials due to their limited maintenance needs and long life span.

Raw Materials

WPC is manufactured using a composition comprising high density polyethylene, hardwood waste plus a number of specialist additives such as coupling agents, inhibitors and stabilisers. The exact composition used for Dura Composites products is confidential. It is this highly developed, precise composition that enables the composite to deliver such strength and durability.

Product

Dura Deck comprises a range of low maintenance composite timber decking products that provide a comfortable walking surface for leisure, domestic or marine walkways. The boards are designed for a minimum 25 year service life and most products feature a sub-surface fixing system that means no trip hazards. The materials will not warp, rot or splinter like natural wood and due to the fact that it is available in widths up to 295mm it makes for very rapid installation. The range of bespoke fixing systems ensure consistent gapping to suit permanent or removable requirements. The range can be supplemented with balustrading and pergolas, produced from the same eco-friendly materials to suit specific project needs.

Colours

A range of colours and widths are available to suit most project needs. Dura Deck Eco (146 & 295) is available in Teak, Charcoal and Stone; Dura Deck Flip (150) is available in 3 colour combinations: Weathered Cedar/Pebble Grey, IPE/Mahogany and Larch/Red Cedar.

Board Options	Planks per Pallet
Eco 146	132
Eco 295	66
Flip 150	126

Delivery:

All types of Dura Deck boards arrive at their delivery location pre-packaged onto pallets. See the table below to see how may boards are included per pallet.

Fire Resistance Dura Deck® Ranges

The Dura Deck range of composite decking is a low maintenance, eco-friendly alternative to traditional wood decking and comes in two ranges to suit every budget and project scenario.

Dura Deck Flip is our premium composite decking choice. It features our most beautiful surface ever and is designed to achieve the most natural wood-look on the market. With one colour on each side of the board, you can experiment with both colours in your deck design or 'flip' your deck at a later date for a whole new look. The decking is produced via a co-extrusion process where a 360 degree outer armour is used to protect the core of the deck from the elements. As a result, Dura Deck Flip Resist is fire resistant to Class Cfl-s1 in accordance with BS EN 13501. It is colour fade resistant, strength load resistant, stain resistant and also highly slip resistant – making it perfect for a range of applications. A Class B fire rated option is also available on request as special order.

Dura Deck Eco has a more traditional appearance and features grooves on one side and wood grain on the reverse. Available in Teak, Charcoal and Stone, the boards come in two widths 146mm and 295mm) and their manufacturing process results in some of the lowest water absorption rates in the industry thus minimising the risk of overexpansion. The double width board of the 295 can allow installs to be completed in half the time, saving labour and cost. It is fire resistant Class CfI-s1 in accordance with BS EN 13501.

The following pages will help you select the most suitable Dura Deck range for your project requirements.

Anti-Slip Resistance

The 4s rubber slider test imitates the heel of a shoe or foot to determine the level of slip resistance. The 4s slider test method is specially designed to replicate everyday footwear across a surface.

The 4s slider test should not be confused with the pendulum 5s slider or TRL (Transport Road Laboratory) test, which is designed for testing slip resistance on a roading surface. The results gained from a 5s slider test are significantly higher than the 4s slider test. The 4s slider test can be relied upon in a court of law where a personal injury claim may have been made.

This test measures the floors slip resistance values against the recommended health and safety minimum value of '36' and proves to insurance companies, slip accident claimants (genuine or fraudulent), and personal injury lawyers, that a safe floor environment has been provided.

Eco 146

Slip Resistance Values - BS 7976*		Type 146	Type 146 Type 146		Type 295	
Direction	Condition	Grooves	Woodgrain	Large Grooves	Woodgrain	
Longitudinal	Dry	39	44	39	3 9	
Transverse	Dry	63	51	a 74	5 2	
Diagonal	Dry	5 2	46	51	5 3	
Longitudinal	Wet	<u>32</u>	<u>32</u>	_ 32	_ 28	
Transverse	Wet	45	44	38	3 9	
Diagonal	Wet	3 7	38	3 9	a 36	

*(4S Rubber Slider)

Pendulum Test Values (PTVs)

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

Flip 150

Slip Resistance V	Type 150	
Direction	Condition	Woodgrain
Longitudinal	Dry	4 0
Transverse	Dry	46
Diagonal	Dry	42
Longitudinal	Wet	38
Transverse	Wet	3 6
Diagonal	Wet	3 7

*(4S Rubber Slider)

Pendulum Test Values (PTVs)

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

Dura Deck® Eco Load and Deflection Specification

Product Comparison Table

	1.4kN at 400mm Span 0.5% Deflection, against BS 6399-1: 1996	Fire Resistance Class C	Water Absorption (less than 0.5%)	Minimal UV Colour Fade (Min. Grey Scale 4)	100% FSC® Available	Woodgrain Surface
Dura Deck™ Eco	✓	~	~	V	V	V
Other WPC Decking Manufacturers	×	×	×	×	V	V
Soft Wood Decking	×	×	N/A	×	V	V
Hard Wood Decking	×	V	N/A	×	V	✓

Dura Deck® Eco Profiles

Product	Board Type	Board Thickness	Board Length	Board Width	Max Span	Weight / Lin m	Weight per length	Boards per Pallet
Eco 146	Hollow	25mm	3660mm	146mm	400mm	3.05Kg	11.16Kg	132 Pcs
Eco 146	Solid	25mm	3660mm	146mm	400mm	4.81Kg	17.60Kg	90 Pcs
Eco 295	Hollow	23mm	3660mm	295mm	550mm	6.56Kg	24.01Kg	66 Pcs
Eco 295	Solid	23mm	3660mm	295mm	550mm	8.97Kg	32.83Kg	42 Pcs
Eco Fascia	Solid	9mm	3660mm	230mm	Infill only	2.88Kg	10.54Kg	100 Pcs

Material Specifications

Test item	Test parameter	Dura Deck Eco Test Results
Linear Thermal Expansion (Lengthwa	ys)Test method: ISO 11359-2:1999 Method A Rate of temperature: 3 °C/min	44.8×10-6 K-1
Water Absorption	Test method: EN 317:1993	0.50%
Density	Test method: ASTM D792-13 Method B	1.317 g/cm ³
UV Light Ageing Test	Test method: ASTM G154-16 & ASTM D2244-16 UV Exposure cycle: Exposure duration: 100	00h ΔE*ab = Grey Scale 4
Tensile Strength	Test method: ASTM D638-14	23.2 Mpa
Flexural Strength	Test method: reference to ASTM D7032-17 Section 4.4 and ASTM D4761-13 Section 8	33.7 Mpa
Low Temperature Effect (-29 ±2°C)	Test method: ASTM D7032-17 Section 4.5.1 and ASTM D4761-13 Section 8	45.4 Mpa
High Temperature Effect (52 ±2°C)	Test method: ASTM D7032-17 Section 4.5.1 and ASTM D4761-13 Section 8	27.4 Mpa
Moisture Effect (85%RH)	Test method: ASTM D7032-17 Section 4.5.2 and ASTM D4761-13 Section 8	34.4 Mpa
Freeze-Thaw Effect	Test method: ASTM D7032-17 Section 4.7 and ASTM D4761-13 Section 8	Flexural Strength after freeze-thaw resistance
	Freeze-thaw exposure cycle: ① Submerge underwater for 24h ② -29°C, 24h ③ 23±2°C,	33.7 Mpa
	24h Step ①~3 as one cycle, total three cycles	
Flexural Stiffness	Test method: reference to ASTM D7032-17 Section 4.4 and ASTM D4761-13 Section 8	Flexural Stiffness: 4637 Mpa
Resistance to Indentation	Test method: EN 15534-1:2014 Section 7.5	Brinell hardness: 104 Mpa
Charpy Impact Strength	Test method: EN ISO 179-1:2010	4.4 kJ/m²
Flammability Resistance	Test method: EN13501-1 (EN ISO 9239-1) and (EN ISO 11925-2)	Cfl-S1 - As Standard

Dura Deck® Flip Load and Deflection Specification

Product Comparison Table

	1.4kN at 400mm Span 0.5% Deflection, against BS 6399-1: 1996	Fire Resistance Class C	Low Slip Potential Wet and Dry	Water Absorption (less than 0.2%)	Minimal UV Colour Fade (Min 5.7 / 1000 hrs)	100% FSC® Available	Woodgrain Surface	Wipe Clean Stains
Dura Deck™ Flip	V	V	V	V	v	V	V	V
Other Co-extruded Compo	osites x	×	V	×	×	×	V	V
Soft Wood Decking	x	×	×	×	×	V	V	×
Hard Wood Decking	×	×	×	×	×	✓	V	×

Dura Deck® Flip Profiles

Product	Board Type	Board Thickness	Board Length	Board Width	Max Span	Weight / Lin m	Weight per length	Boards per Pallet
Flip 150	Hollow	25mm	3660mm	150mm	400mm	3.10Kg	11.35Kg	126 Pcs
Flip 150	Solid	25mm	3660mm	150mm	400mm	4.94Kg	18.08Kg	100 Pcs
Flip Fascia	Solid	10mm	3660mm	180mm	Infill only	2.19Kg	8.56Kg	100 Pcs

Material Specifications

Test item	Test parameter	Dura Deck Resist Test Results				
Tensile Strength	Test method: ASTM D638-14	28.3 MPa				
Flexural Strength (MOR)	Test method: ASTM D7032-17 Section 4.4 and ASTM D4761-19	35.1 MPa				
Flexural Stiffness (MOE)	Test method: ASTM D7032-17 Section 4.4 and ASTM D4761-19	2894 MPa				
Low Temperature Effect (-29 ±2°C)	Test method: ASTM D7032-17 Section 4.5.1 and ASTM D4761-13 Section 8	50.3 MPa				
High Temperature Effect (52 ±2°C)	Test method ASTM D7032-17 Section 4.5.1 and ASTM D4761-13 Section 8	125.1 MPa				
Moisture Effect 85%RH	Test method: ASTM D7032-17 Section 4.5.2 and ASTM D4761-13 Section 8	36.0 MPa				
Freeze-Thaw Effect	Test method: ASTM D7032-17 Section 4.7 and ASTM D4761-13 Section 8	36.1 MPa				
	Freeze-thaw exposure cycle: (1) Submerge underwater for 24h (2) -29°C, 24h (3) 23±2°C,					
	24h Step ①~③ as one cycle, total three cycles					
Resistance to Indentation	Test method: EN 15534-1:2014 Section 7.5	Brinell hardness: 89 MPa				
Charpy Impact Strength	Test method: EN ISO 179-1:2010	10.5 kJ/m²				
Water Absorption	Test method: EN 317:1993	0.25% (24 Hours)				
Water Absorption	Test method: EN 15534-1:2014 + A1:2017 Section 8.3.1 EN317:1993	1.48% (28 Days)				
Density	Test method: ASTM D792-13 Method B	1.25 g/cm3				
UV Light Ageing Test	Test method: ASTM G154-16 & ASTM D2244-16 UV Exposure cycle: Duration = 1000h	ΔE* = 0.58				
Linear Thermal Expansion (Lengthways)	Test method: ISO 11359-2:1999 Method A. Rate of temperature: 3°/min	No Data				
Flammability Resistance	Test method: EN13501-1 (EN ISO 9239-1 and EN ISO 11925-2)	Cfl-S1 - As Standard				

Gap Guides

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

Dura Deck® Eco Recommended Gap Tables (Europe)

Installation Air	Dura Deck Eco Expansion Gap Guide (mm)								
Temp (°C)	3660mm Board		3000mm Board		2000mm Board		1000mm Board		
	Hollow	Solid	Hollow	Solid	Hollow	Solid	Hollow	Solid	
-10	7.4	9.3	6.2	7.7	4.1	5.1	2.1	2.6	
-5	6.8	8.5	5.7	7.1	3.8	4.7	2.0	2.4	
0	6.2	7.8	5.2	6.5	3.4	4.3	2.0	2.2	
5	5.6	7.0	4.7	5.8	3.1	3.9	2.0	2.0	
10	5.0	6.3	4.2	5.2	2.8	3.5	2.0	2.0	
15	4.4	5.5	3.7	4.6	2.4	3.1	2.0	2.0	
20	3.8	4.8	3.2	4.0	2.1	2.6	2.0	2.0	
25	3.2	4.0	2.7	3.3	2.0	2.2	2.0	2.0	
30	2.6	3.3	2.2	2.7	2.0	2.0	2.0	2.0	
35	2.0	2.5	2.0	2.1	2.0	2.0	2.0	2.0	

^{*}Assuming worst case scenario of Eco range installed at -10°C and reaching +35°C

Dura Deck® Eco Recommended Gap Tables (Middle East)

Installation Air	Dura Deck Eco Expansion Gap Guide (mm)								
Temp (°C)	3660mm Board		3000mm Board		2000mm Board		1000mm Board		
	Hollow	Solid	Hollow	Solid	Hollow	Solid	Hollow	Solid	
10	5.0	6.3	4.2	5.2	2.8	3.5	2.0	2.0	
15	4.4	5.5	3.7	4.6	2.4	3.1	2.0	2.0	
20	3.8	4.8	3.2	4.0	2.1	2.6	2.0	2.0	
25	3.2	4.0	2.7	3.3	2.0	2.2	2.0	2.0	
30	2.6	3.3	2.2	2.7	2.0	2.0	2.0	2.0	
35	2.0	2.5	2.0	2.1	2.0	2.0	2.0	2.0	
40	2.0	2.5	2.0	2.1	2.0	2.0	2.0	2.0	
45	2.0	2.5	2.0	2.1	2.0	2.0	2.0	2.0	
50	2.0	2.5	2.0	2.1	2.0	2.0	2.0	2.0	
55	2.0	2.5	2.0	2.1	2.0	2.0	2.0	2.0	

^{*}Assuming worst case scenario of Eco range installed at +10°C and reaching +55°C

Dura Deck® Flip Recommended Gap Tables (Europe)

Installation Air	Dura Deck Resist Expansion Gap Guide (mm)								
Temp (°C)	3660mm	3660mm Board		3000mm Board		2000mm Board		1000mm Board	
	Hollow	Solid	Hollow	Solid	Hollow	Solid	Hollow	Solid	
-10	5.9	7.4	4.9	6.1	3.3	4.1	2.0	2.0	
-5	5.5	6.8	4.6	5.7	3.0	3.8	2.0	2.0	
0	5.0	6.3	4.2	5.2	2.8	3.5	2.0	2.0	
5	4.6	5.8	3.8	4.8	2.6	3.2	2.0	2.0	
10	4.2	5.2	3.5	4.3	2.3	2.9	2.0	2.0	
15	3.7	4.7	3.1	3.9	2.1	2.6	2.0	2.0	
20	3.3	4.1	2.8	3.4	2.0	2.3	2.0	2.0	
25	2.9	3.6	2.4	3.0	2.0	2.0	2.0	2.0	
30	2.4	3.0	2.0	2.5	2.0	2.0	2.0	2.0	
35	2.0	2.5	2.0	2.1	2.0	2.0	2.0	2.0	

^{*}Assuming worst case scenario of Flip range installed at -10°C and reaching +35°C

Dura Deck® Flip Recommended Gap Tables (Middle East)

Installation Air	Dura Deck Resist Expansion Gap Guide (mm)								
Temp (°C)	3660mm Board		3000mm Board		2000mm Board		1000mm Board		
	Hollow	Solid	Hollow	Solid	Hollow	Solid	Hollow	Solid	
10	4.2	5.2	3.5	4.3	2.3	2.9	2.0	2.0	
15	3.7	4.7	3.1	3.9	2.1	2.6	2.0	2.0	
20	3.3	4.1	2.8	3.4	2.0	2.3	2.0	2.0	
25	2.9	3.6	2.4	3.0	2.0	2.0	2.0	2.0	
30	2.4	3.0	2.0	2.5	2.0	2.0	2.0	2.0	
35	2.0	2.5	2.0	2.1	2.0	2.0	2.0	2.0	
40	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
45	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
50	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
55	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	

^{*}Assuming worst case scenario of Flip range installed at +10°C and reaching +55°C

Maximum Spans

Using state-of-the-art product design, proprietary product formulas and precise manufacturing techniques, Dura has been able to achieve an additional 60% extra strength versus similar designs from competitors. This added strength helps prevent long term failure cause by permanent deflection (otherwise known as 'sag'). Our unique design enables the same span to be used whether you plan to install Dura Deck residentially or commercially.

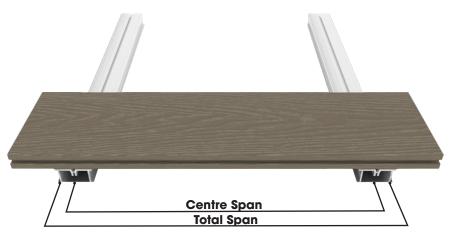
Span Tables





Product	Standard 90° Maximum Centre Span	Diagonal 45° Maximum Centre Span			
Eco 146	400	300			
Eco 295	550	450			
Resist 150	400	300			

Span Guide



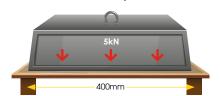
Load Performance Explained

Point Load



Exceeds 1.4kN load at 0.5% deflection (2mm @ 400mm span)

UDL (Uniformly Distributed Load)



Exceeds 5kN load at 0.5% deflection (2mm @ 400mm span)

Long Term Strength



Resists long term deflection (under self weight)

Additional Info



Maintenance and Cleaning Information

Dura Deck requires no oiling, sanding or staining throughout its lifetime, however you may need to clean your deck occasionally to keep it looking at its best. Here are the solutions to common cleaning issues.

General

General Dirt and Debris

Spray with a hose to remove surface debris. Use warm soapy water and a soft bristled brush to clear dirt and/or debris from grooves/contours. Pressure wash to remove more stubborn stains.

Oil/Grease/Food/Drink

Remove stain and mop as soon as possible; wash down with a hose, warm soapy water, and a soft bristled brush. Pressure wash for more stubborn stains. For Eco 146 & 295 grooved face only – any surface stain that has been absorbed can be also easily removed with light, progressive sanding using coarse grit (22-60 grit) sandpaper. Do not sand more than 0.5mm into the surface.

Tannins from Spillages/Water Spots

Tannins will naturally be released from long lying material/vegetation, wine spillage etc. This should be washed down with a hose and brushed off using a soft bristled brush and soapy water. Pressure wash for more stubborn stains. For Eco 146 & 295 grooved face only – any surface stain that has been absorbed can be removed through light sanding with a coarse sandpaper (22-60 grit). Do not sand over 0.5mm into the surface.

Static Build-Up

The build-up of static electricity on a flat surface can affect any vinyl walking surfaces. This phenomenon most often occurs in dry climates, where hot dry winds and dust-born particles can create static electricity on the surface of decking. This static is the same as when a person were to drag their feet on a dry day or rub a balloon on fur or wool. In most cases, brushing/hosing down the decking surface will dissipate the static charge, however if this continues the deck can be grounded. Consult with an electrician to determine the best methods for this.

Marking For Cutting

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

Tannins from Dura Deck® Products

All wood based products will release Tannins including Dura Deck. This will naturally stabilise after approximately 12 weeks, depending on the temperature, UV and exposure to rain.

Rust Stains and Engrained Dirt

Cleaning products containing Oxalic or Phosphoric acid can be used. Do not bleach, as this will lighten the product. With any cleaning product, test it on a small inconspicuous area first, following manufacturer's instructions.

Ice & Snow

Use a plastic shovel or broom to remove snow. Use rock salt or calcium chloride to melt frozen precipitation/ice.

Cleaning Techniques

Once you have completed the install of your Dura Decking, we advise that the decking is either washed down thoroughly with a yard broom or pressure washed to ensure that a good clean surface is ready for you to enjoy.

Basic Cleaning

Spray with hose to remove surface debris. Use warm soapy water and a soft bristled brush to clear dirt and/or debris from grooves/contours.

Pressure Washing

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

Sanding

For Eco 146 & 295 grooved face only - sanding should be used only when basic cleaning or pressure washing fail to remove stubborn stains. Sanding should only be used for very stubborn scuffs and/or marks. Always use coarse grade Emery paper (22-60 grit). Sanding should be carried out lightly and progressively harder if necessary to a maximum of 0.5mm surface depth.

Most marks blend naturally after 12 weeks weathering. Please do not sand Dura Deck Flip 150 as this may reduce the effectiveness of the 360° outer armour.

Product Disposal

For both domestic and commercial use you should safely dispose of any offcuts as per local laws. Do not burn. Treat as construction waste. If unsure always consult your local governing body/ council.



Safety Data

This section provides data for protection against substances hazardous to health.

Material Identification

Chemical Name: Wood Polymer Composite
Common Name: WPC, Composite Timber

Product Identification: **Dura Deck Eco & Dura Deck Flip**Uses: Residential/Commercial decking areas

Composition

High Density polyethylene, Hardwood waste materials from industry, coupling agents, UV stabilisers, mould inhibitors. Components are extruded through die, heated and cured. Polypropylene wrap for Dura Deck Resist range.

Hazard Identification

None by contact. Dust produced by cutting or grinding can penetrate pores and skin causing itching. Avoid breathing dust, skin contact or dust inhalation when cutting. People with a condition that could be aggravated by dust should avoid cutting or grinding.

First Aid procedure: Skin - shower with water and soap. Eyes - flush with sterile eye wash solution.

Product Appearance

Solid or hollow profile sections cut to specified lengths. Some sharp edges, top surface sanded for anti-slip finish. Wood odour. Not soluble in water.

UV Fade

Eco 146

Latest technology deployed to ensure the colour fade over time is minor, providing a deck that always looks like new.

Flip

Protected by the outer armour, the Flip range is even more colour stable than Eco and other co-extruded WPC decking boards on the market.

Fire Fighting Measures

Standard extinguishing equipment, water, foam, A, B or C fire extinguishers. Produces black smoke while burning, carbon particles. Use air respirator.

Waste Disposal

Product is not considered a hazardous waste. Abide by local laws and procedures.

Handling/Cutting

Wear masks and goggles when cutting or grinding. Cover exposed parts of the body. Wear gloves when moving or lifting. Use standard wood working equipment & tools for cutting. Avoid direct fire source.

Product Warranty

Dura Deck Eco - 10 year limited warranty, further details available on request. Dura Deck Resist - 15 year limited warranty, further details available on request.

ptember 2021

Head Office

Dura Composites Ltd

Dura House, Telford Road Clacton On Sea Essex, CO15 4LP United Kingdom Tel: +44 (0)1255 440298 Email: info@duracomposites.com

www.duracomposites.com



Unlocking the Power of Composites™
>>> for Outdoor Decking Areas