



Deck Planks Specification and Installation Guidelines



DECK TYPE 146 INSTALLATION GUIDE Material Composition

Deck 146 is produced by extruding a unique composition of reclaimed wood, high density polyethylene and a number of engineered stabilisers such as UV inhibitors and mould preventers. This creates our unique products, which can be used internally or more commonly outdoors. Deck 146 provides outstanding weatherproof performance and endurance even in extreme weather conditions.

The combination of high strength and beautiful wood appearance is created as a result of achieving the optimal ratio of wood fibre to plastic resin combined with exacting temperature and speed control during the manufacturing process.

Deck 146 has been put subjected to rigorous testing both in the laboratory and in practical outdoor exposure tests in 3 continents. The testing has taken place since 2007 and has been carried out in tropical conditions across a wide range of extreme temperatures and humidities. These tests have provided outstanding results and allow us to supply a product which performs in all weather conditions retaining optimum strength whilst looking like real timber but with all of the benefits of being an engineered material.

Installation & Fixing Guide Lines

Our product has been designed for its simplicity and ease of installation however to ensure long term performance we recommend that a professional trade person carries out the installation in accordance with our guidelines. This is more likely to ensure a high quality, professional finish. Most installers will find this process very similar to the installation of a real wood deck. However, there may be a few key areas where care must be taken with specific aspects.

Please remember that the installation method recommended by GRP Grating Systems may not cover every installation scenario that you may encounter. That is why a professional should be used in order to adapt the methodology for specific situations. Each installation is unique in its performance requirements, and therefore the installation is the sole responsibility of the installer. GRP Grating Systems recommends that all designs be reviewed by a licensed architect, engineer or local building official before installation. Make sure your plans meet local building codes before you begin the installation.

Site Preparation

The site must be free draining or of a gradient of 1 in 40 to allow water "run off". If the area you have chosen is 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 at ground level then the removal of 100mm of soil is recommended. Replace the topsoil with 100mm of compacted gravel or hardcore. This provides a very solid but free draining site on to which you can build the sub-frame. On any over site it is essential that you lay a weed barrier. It is advisable to cover the top of the weed barrier with a light stopping layer of pea shingle. You could use strategically positioned patio slabs instead of compacted gravel or hardcore, but we do not recommend this as they tend to settle causing problems with your deck later.

Sub Frame

The sub frame can be Timber, GRP or Steel whichever method is preferred

The maximum span between supporting joists depend on the specific Deck product

You should refer to the Load & Deflection Data Table below to determine the maximum span

Most decks (other than ground level) use a post and beam construction. The support posts (normally placed at no more than 1800mm) centres sit in or on concrete footings, the later using a metal connector / shoe.

Style Of Deck

It is essential to plan your deck in advance and this is best done on paper. You cannot simply make up a bearer frame of any size and then expect the deck boards to fit with the required gaps between them without having to reduce the width of boards to fit.

Carefully decide on the location and the use of your deck. Decide on whether you want a sunny or shaded location and importantly whether privacy is a requirement. Decks in permanent shade could be affected by damp and consequent algae growth.

Be aware that very large decks and 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. When installing posts or levelling take special care not to damaged underground pipes or drainage and do not obstruct manhole covers or other services.

GRP Deck Pedestrian Load Span Chart Plus Load & Deflection Data (Europe)

Plank (mm)	90° Span	45° Span	30° Span	Concentrated Line Load Kg/m @ 1% deflection	UDL Kg/M2 @ 1% Deflection
Type 295	600mm	550mm	500mm	287	2296
Type 225	750mm	700mm	650mm	298	2490
Type 146	400mm	350mm	300mm	289	2312

Gapping - Allowing For Expansion (And Contraction)

Deck 146 planks will expand and contract with changes in temperature. Expansion and contraction are most significant where extreme temperature changes occur. Fastening the deck planks according to the gapping requirements noted in the table below accommodates for this movement.

Changes in length are most significant during the installation process, and should be accounted for if working in extreme temperatures. A good example would be if cutting your planks during a hot afternoon, letting them sit outside overnight in the cool air and then installing them the next morning. Chances are, you will notice a certain amount of contraction. The best way to minimize this problem is to fasten your planks as soon after cutting as possible.

Gapping Requirements

Allow 5mm minimum gap where the planking meets any adjoining structure or post

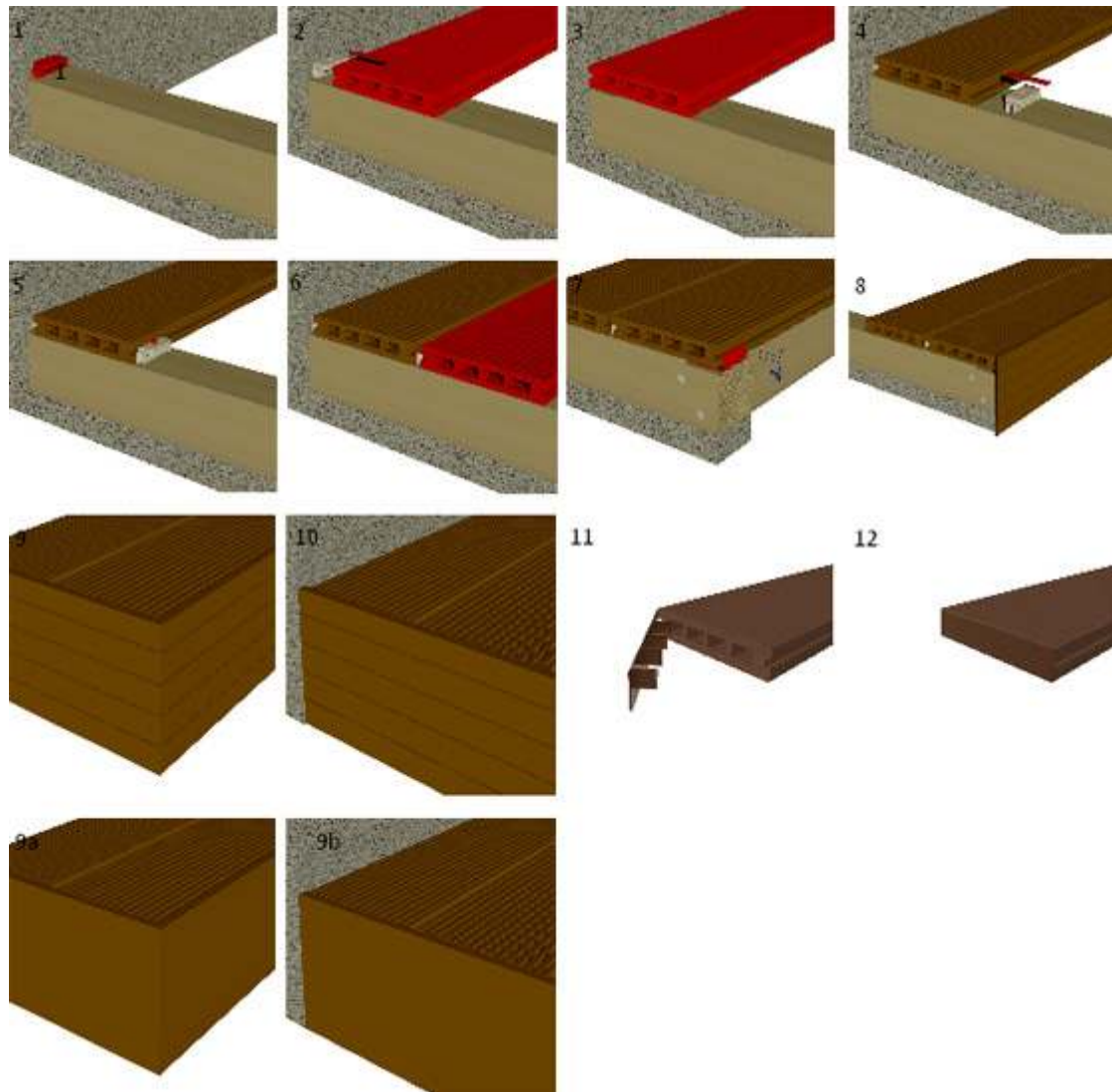
Follow these butt joint gapping guidelines for all Deck 146 planks

Plank Length	Butt Joint Gapping Requirements		
	Standard (Europe) 40°C Temp Range	Extreme (Middle East) 60°C Temp Range	Super Extreme 80°C Temp Range
1m	1.5 mm	2.25 mm	3.0 mm
2m	3.0 mm	4.5 mm	6.0 mm
3m	4.5 mm	7.75 mm	9.0 mm
4m	6.0 mm	10.0 mm	12.0 mm

Laying The Deck

Once you have decided on the substructure layout/deck plan & are happy that all the levels and steps are carefully worked out, the decking process can begin. The installation process and use of fixings for our Deck products is similar throughout the range. Key things to remember are to stagger your joints, leave enough clearance for expansion (as table), always support the end of a plank on a bearer, if mitreing planks make sure there is sufficient support running underneath.

Deck Laying Process



We recommend that if you are unsure ...ASK. 0844 8842616

DECK 146 FIXING SYSTEMS

Below Surface Fixings

Due to the excellent concealed fixing system, no screws or nails need to be used through the decking surface. The result is a decking without screw or nail heads working loose on the walking surface. Therefore dangers of injury when walking barefoot are eliminated. The Below Surface fixings also automatically space the correct gap between each board for that uniform appearance.

Standard Plastic Hold Down Clips



The standard fixing clip provides vertical screw fixing and allows individual decking boards to be removed for access at any time.

Start And End Hold Down Clips



This clip is designed to secure the start or end boards without unsightly screws through the walking surface.

Composite Timber End Caps



End caps can be used to seal board edges in areas where decking edges are exposed. Fitting End Caps provides a pleasing and attractive finish. Suitable glues can be supplied for permanent fixture.