

# The Outdoordeck Company

## Tech Spec Sheet: The Grad 'Hidden Fix' Deck System



The Outdoor Deck Company are based in West London and work nationwide, concentrating exclusively on exterior hard landscaping. We specialise in the supply and installation of timber and composite decks, contemporary cladding, seating and timber structures. The Outdoor Deck Company offer technical design consultancy, material supply, in-house installation teams, or usually a 'turn-key' combination of all three of these services.

The people at The Outdoor Deck Company have a long and well respected track record of over 20 years in exterior floors, all over the UK. During this time we have become familiar with all manner of materials, all sorts of technical challenges, and just about every 'raised floor' installation system. As a direct consequence of this practical, first hand experience, we now focus our efforts exclusively on carefully selected products and solutions that we know offer the best combination of price, prestige and practicality.

In addition to recognising the four core materials (timber, composite, porcelain or concrete) which dominate the exterior flooring business, we also cater for the growing trend towards 'hybrid' hard-landscaping, where architects and designers are looking to combine mixed materials in their layouts. To facilitate this the materials and installation systems we supply have been chosen to work together technically and aesthetically.

Currently we import and supply the Grad 'Hidden Fix' Timber Decking System.

## The Grad 'Hidden Fix' Decking System



*“Within just ten years of creating the Grad clip system, we had already installed over one million square metres of decking – and have never known any of it to fail...”*

WILFRED ANDRES – Inventor of Grad

There will always be projects where nothing but the feel and aesthetic of premium wooden decking will suffice, and there will always be clients who demand the crisp, clean lines of a precision installed, clear grade deck. To date, the time/cost economics of meeting those quality demands has been prohibitive on many sites, but Alfresco Floors have chosen to supply the Grad decking system because it combines an exceptionally efficient installation system with very high-end levels of finish.

Grad is a truly 'invisible fixings' system, with the clips completely hidden under boards and not on show between the boards, as with other products. We supply the Grad system as either component parts, or as a fully integrated system of pedestals, support rails and specially milled boards.

Until now, hidden fix decking has usually involved clips which are individually fitted all along the edge of each board, but the unique 'clip grip' design at the heart of the Grad system means that decks can now be installed at least twice as fast as traditional methods. Another advantage of the Grad clips is that they grip deep into the heart of each board (and not just along part of the edge) so once locked in place the boards are impossible to dislodge. However, when necessary, any board can be easily and quickly removed using our special tool, without any marking or damage to the face of the material (an all too common problem with other clip based solutions).

The Grad system can either be fitted onto conventional timber joists, or mounted onto the bespoke support rail system – where finished build-ups of pedestal, joist, clip and deckboard start at around 60mm (at least 30mm lower than a timber frame construction). Without pedestals, the Grad system can be installed with build-ups of just 35mm, which opens up a wealth of innovative design opportunities on many new build roof terrace and balcony projects.

The Grad system offers a choice of fully FSC certificated 'clip ready' timber deck boards – these are available in Thermo-Pine, Thermo-Ash, Kebony and Accoya. Grad timber deck boards are smooth with a very slightly convex surface – this prevents 'cupping' of the timber and eliminates the 'water pooling' which flat timber boards encourage. The Grad system also includes two composite boards, both in an organic plank design – one coloured as 'new' timber, one as a 'weathered grey' finish.

Designed and manufactured in France, Grad have been constantly refining and improving the materials and technology behind their clip grip system since 1988. As exclusive importers, we are confident that the Grad technology offers the very best combination of quality, durability, strength, accuracy and economy that you will find in any decking system now available anywhere in the UK.

## The Grad Installation Procedure (using Thermo-Ash)



Grad rails are available in four heights and are manufactured with the board securing clips already precision fitted.



Full sized rails are simply cut to length on site and then laid out in the approximate positions required.



Pedestals go under each rail, typically at 500mm centres, but dependent on rail depth and the anticipated live loads.



Rails are lined up with a reference board and then adjusted into their final position, typically at 350mm-450mm centres.



Grad boards are milled with unique grooves underneath and are convex to speed water run-off and prevent cupping.



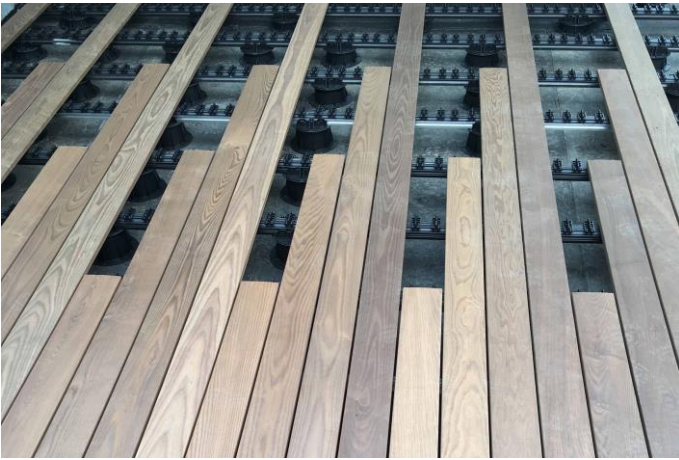
Rails arrive with all the clips precision fitted. Just a firm hand pressure will then instantly lock the boards down.



Once locked in place it is impossible to remove the boards without tools, a key feature where wind up-lift is as an issue.



A few boards will lock the whole system in place so that final height adjustments can be made to the pedestals below.



Full length boards are cut and offset to suit the design requirements. They simply butt joint together over a clip.



The precision rails and invisible fixing clips create quick, accurate decks with no clips or screws visible from above.

## Grad Deck Board Specifications (all timber FSC sourced)

**Thermo-Pine:**  
11 Kgs per SqM

4800mm long boards, PAR to 26mm x 118mm  
(minimum build-up on peds is 67mm)

**Thermo-Ash:**  
12.6 Kgs per SqM

3600mm long boards, PAR to 21mm x 118mm  
(minimum build-up on peds is 62mm)

**Kebony:**  
15.7 Kgs per SqM

4800mm long boards, PAR to 23mm x 118mm  
(minimum build-up on peds is 64mm)

**Accoya:**  
11 Kgs per SqM

4800mm long boards, PAR to 21mm x 118mm  
(minimum build-up on peds is 62mm)

**Composite:**  
31.8 Kgs per SqM

3600mm long boards, 24mm x 145mm  
(minimum build-up on peds is 65mm)

## Grad Deck Board Options (all timber FSC sourced)



**Thermo-Pine**  
120 x 26mm Boards  
Build-Up from 67mm  
min. 25 Year Warranty



**Thermo-Ash**  
120 x 21mm Boards  
Build-Up from 62mm  
min. 25 Year Warranty



**Kebony**  
120 x 23mm Boards  
Build-Up from 64mm  
min. 30 Year Warranty



## Accoya

120 x 21mm Boards  
Build-Up from 62mm  
min. 50 Year Warranty



Composites 145 x  
24mm Boards  
Build-Up from 65mm  
min. 15 Year Warranty



Cladding  
(This is Thermo-Ash)

# Grad Timber Treatments

All the natural wood boards we have selected for the Grad system have distinct advantages over traditional softwood or the tropical timber alternatives. The different treatment processes involved are all sustainable and environmentally friendly - and they create finished boards that have exceptional levels of dimensional stability, are easy to clean and maintain, have improved compression strength, and are extremely resistant to rot or decay – some with ‘rot free’ warranties of up to 50 years.

## Thermo Treated Timber

First developed in the 1930's, the thermal modification of timber is now a computer controlled kiln based process that preserves wood in its most natural and flawless state, using just heat and water - no nasty chemicals at all. Our raw softwood (all from managed forests) is dry heated to around 130c to remove all the moisture, then steam heated to over 200c and held at that temperature for several hours. Finally, it is water spray cooled to ensure a final moisture content of just 5%. All this careful and precise attention triggers three important changes in the resulting timber:

Firstly, caramelisation of Lignin in the wood causes colour change throughout each plank, creating the rich browns of more tropical timber to appear. Secondly, the actual cellular structure of the wood is physically altered to significantly reduce all moisture induced movement. Finally, the rot resistance of the timber is dramatically improved, because the sugar content burns away - this eliminates the food source for all the mould, fungus or biological decay which would normally cause deterioration.

Our thermo-treated timbers are much lighter to handle than hardwoods, much less destructive to any tools required during the installation, they create non-toxic sawdust, and they have a low thermal conductivity - so no hot deck boards. After exposure to moisture and sunlight (and without any UV protectant oil) thermo-treated timbers will naturally weather down to a soft platinum-grey colour.

## Kebonised Timber

Developed in Norway (and researched for over a decade before launch) kebonisation is an environmentally friendly process which enhances the properties of sustainable softwoods by injecting them with a toxin free formula which includes Furfuryl Alcohol, a waste by-product of sugar cane. The wood is subjected to both vacuum and pressure to ensure complete absorption of the treatment and then dried, before being cured at high temperature. The resulting timber is sustainable, durable and requires no maintenance beyond normal cleaning. Kebony's environmental credentials have been endorsed with the receipt of the Nordic region's eco-label, the Swan. It's also received Norway's national environmental prize, the 'Glass Bear'. The process permanently modifies the wood cell walls giving Kebony premium hardwood characteristics and a rich brown colour. Our Accoya boards are made from knot free Radiata Pine. Left to weather in the Sun (without UV protectant oils) Kebony eventually develops a natural silver-grey patina.

## Accoya Treated Timber

Using knot free, sustainably-sourced Radiata Pine, Accoya is created by a non-toxic acetylation process that permanently modifies the wood to its core. The result is an environmentally friendly light toned wood with the durability and dimensional stability that matches or exceeds the performance of nature's most durable hardwoods - such as Oak, Teak, Iroko and Sapele. Accoya wood is sourced from sustainable FSC accredited forests in New Zealand and has class-leading environmental credentials. The process creates timber with unparalleled levels of rot resistance and durability and comes with performance warranties of up to 60 years. Every batch of Accoya wood is tested after production to ensure that this durability can be guaranteed.

## Composite Boards

Composite deck boards for our Grad system are formed by a co-extrusion process which bonds together two different materials. The inner core is a strong, structural material of 55% timber and 45% plastic additives. On the outside there is a more resistant, textured wood grained surface which is 45% timber and 55% plastic additives. These extra wide boards (145mm) are made slip and stain resistant, and over time they will gently weather down to a uniformly paler shade of their original colour. Strength and flex characteristics comply with EN 15534 for Wood-Polymer Composites.

## Grad Technical Reference Information

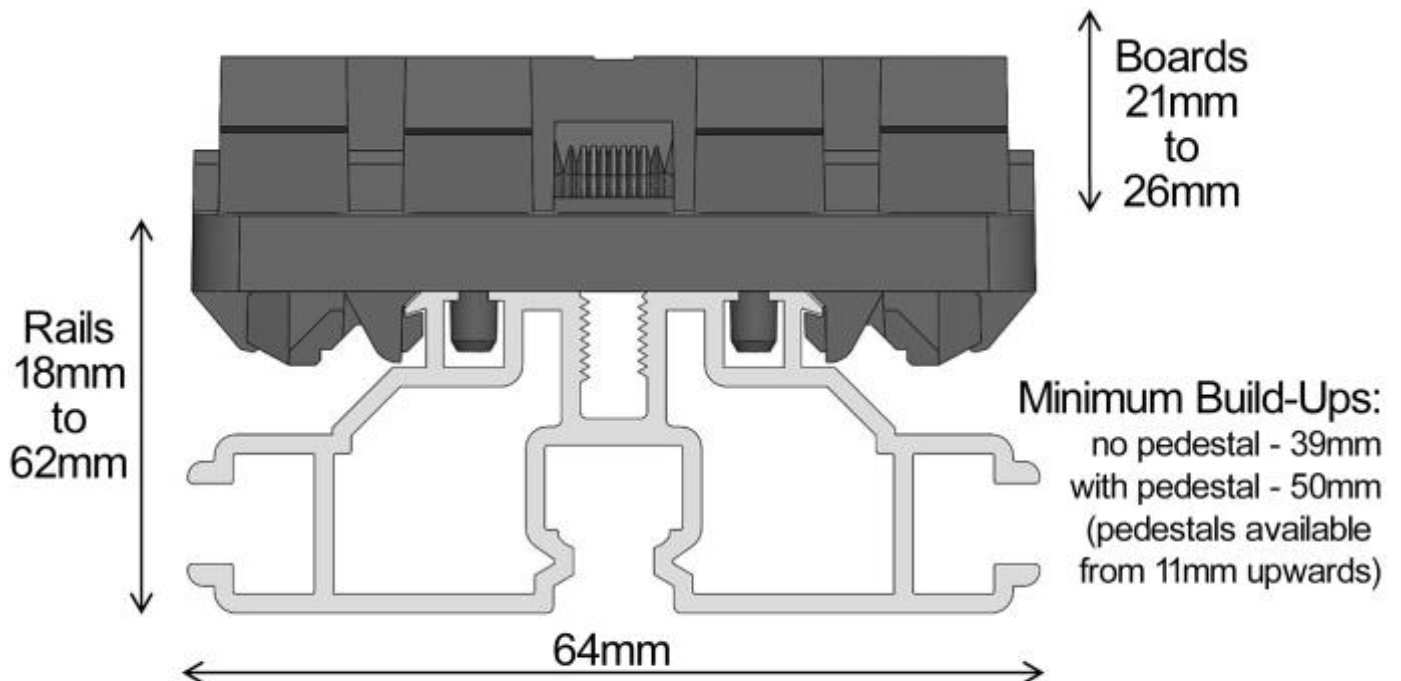
Our Grad 'hidden fix' decking is specifically designed to fit into the smallest build-up heights of any system now available in the UK. To calculate the combined build-up heights, you first need to establish the board, the rail and the pedestals required.

Grad deck boards come 21mm, 23mm, 25mm and 26mm high.

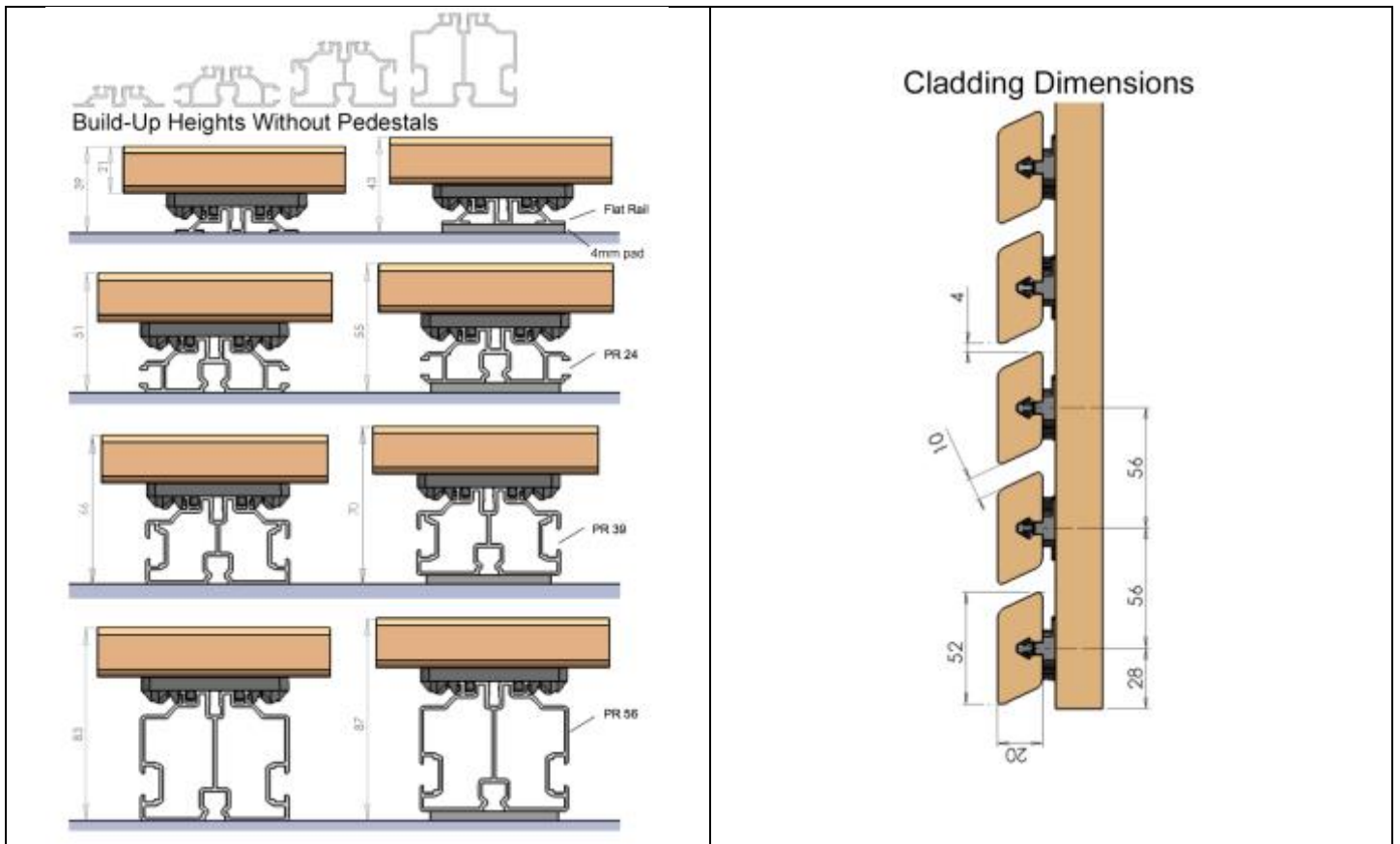
Grad rails are available at heights of 18mm, 30mm, 45mm and 62mm (the choice will be largely dependent on the live load requirement, but this is also affected by the centres of the pedestal supports).

Fixed height Buzon pedestals start at 11mm and height adjustable Buzon pedestals start at 25mm. If you require slope correction, the minimum pedestal height available is 21mm.

Calculations of the minimum build-up heights below assume a 21mm board, Accoya or Thermo-Ash.



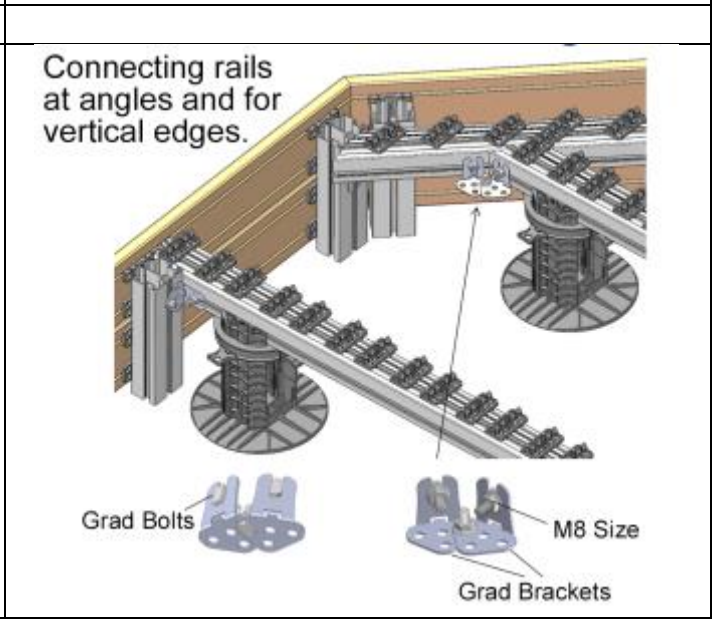




	Pedestal Spacing for Loading Requirements (mm)	
	Domestic	Commercial
Flat Rail	N/A	N/A
PR 24	400	300
PR 39	600	400
PR 56	1000	550

Typical rail centres 4500mm for domestic and 3500mm for commercial installations

Adjust Pedestal Centres for Loading Requirements



There are currently three standard profile designs for the Grad cladding boards and they come in two different thicknesses - 20mm and 26mm. The 52mm wide boards come in both rectangular and shadow-gap profiles, the 65mm wide boards just come in a rectangular profile, the 72mm wide boards just come in a shadow-gap profile while the largest option, our 150mm wide boards, come in a shiplap profile. The standard timber option for all these Grad cladding boards is either Thermo-Ash or Thermo-Pine, but other timbers or bespoke board profiles can be specified for larger orders.



The Grad decking system is distributed nationally across the UK by The Outdoor Deck Company  
 For more information email [sales@outdoordeck.co.uk](mailto:sales@outdoordeck.co.uk) or call us on 020 8977 0820