



## **Installation of Hardwood Decking**

A competent professional installer should be consulted in order to survey each particular site, assess the conditions and take responsibility for the installation. We recommend that you provide them with a copy of this document.

Woodtrend do provide an installation service but we also act as consultants for architects, contractors and designers. No job is too big or too small! Our installations vary from small garden installations to the most exclusive at One Hyde Park in London where we installed all four penthouse terraces and all the balconies for the whole development.

### **Choice of Timber**

There is a wide choice of species available. Ipe Decking is normally used Air Dried ( AD )and Cumaru, Garapa, Balau and Massaranduba recommended to be used Kiln Dried. (KD )

Sizes sold are as at the time of manufacturing, the wider the board the more variance one has. We do not recommend Air dried boards for decking wider than 145mm. Many markets with a hot climate prefer narrower decking boards 90mm to 110mm because the shrinkage on narrow decking is less and this results in less variation of the gaps between the boards.

### **Ground and Side Ventilation**

This is crucial. There must be adequate air circulation and a good run off/ water drainage underneath the deck. This prevents condensation on the underside of the decking board which can result in cupping and warping of the boards. In wet areas or over water, additional clearance is recommended.

### **Sub-frames**

A strong and solid sub-frame with joists every 400mm is recommended. The Sub-frame must be strong and rigid to avoid any movement of the frame. If the frame moves, the decking will move with it and will ultimately go out of alignment during or after installation. Hardwood joists must be used if the decking frame is built directly on a base or if there is any potential for the joists to lie in water. Hardwoods do not rot!

### **Screws and fasteners**

Several different options are available for hidden deck fasteners and for fastening techniques. We recommend following the fastener manufacturers' recommendations but to check our tips in this document for a better installation. (Hardwood Clip or EBTY.)

If top down fixing is preferred then two stainless steel screws into the face of every board at each joist intersection is required to hold the boards firm. Recommended 15mm in from the edge of the board.

Countersunk drilling and plugging is one option often used to hide the screws in top down fixing. Stainless steel screws only to be used.

Pre- drilling is generally necessary as these are dense timbers. Have sufficient drill bits available!

### **Spacing**

Wood is a natural product which is affected by the environment. Air Dried decking will shrink after manufacture and this results in varying widths in the deck boards as well as the spacing between the decking boards. The degree of shrinkage depends of the climate and site conditions. If the decking is installed in the humid and wet season then one should expect shrinkage in the dry season and allow for this accordingly. If the decking is installed in the dry season then the boards will have shrunk during the acclimatisation period prior to installation and one can expect the boards to swell again in the humid/wet season. Note: Kiln dried decking can also shrink but generally much less than Air Dried decking.

Air dried decking should generally be installed with 3mm (About 1/8") spaces between boards. This space will allow for air circulation, allow room for expansion and/or shrinkage and provide for the adequate spacing as the boards become fully seasoned and the seasons change. Expansion is generally very slight but should be allowed for to prevent gaps closing completely or even buckling. If Kiln dried decking is used the spacing should be adjusted to about 5 or 7mm depending on the specie or to allow for more expansion in the wet season.

Approximate shrinkage, depending on the species, for Air Dried Decking is about 4mm on 90mm decking and about 7mm on 140mm decking.

Many installers lay out the boards and let the decking acclimatize on site for a week before installation – they will judge the expected shrinkage and/or contraction to be expected in the climatic conditions and adjust their spacing accordingly.

### **Appearance and grading**

A competent professional installer will take good care in the design of the deck and the selection and trimming of the decking boards during installation. Always allow for about 10% extra when ordering your decking to cater for this.

Select the best face of each decking board for appearance. Slight hit and miss can easily be sanded out and sticker marks in air dried decking will fade out after installation and these should not be trimmed out or rejected. Seasoning checks on the face are allowed but deep cracks, open knots and other structural defects should be trimmed out.

### **Fixing the decking to the joists**

Match the widths at the butt joints for each row – see below.

End trim for a clean square end and trim out visual/structural defects and always trim to the centre of the nearest joist. Always seal after trimming – see below.

Reference Row - The first row of boards needs to be fixed in such a way that it becomes the reference for the next rows of boards installed next to it. This means it needs either top down fixings drilled and plugged or hidden side screws on both sides at each joist along a plumb line marked on the joists or a straight reference edge. The boards need wrenching (or clamping) into a straight row along the plumb line and fixed securely joist by joist.

When each row following the reference row is fixed it must be fixed snugly next to the previous row ensuring that an even and consistent gap (see Spacing above) is maintained. Hardwoods are hard to hold in place in exterior service and sometimes (during installation or later during snagging) one has to reinforce the difficult bowed decking boards after wedging them straight with a top down fixing, countersunk stainless screw and plugged to conceal the screw.

Each board of decking must have one hidden deck fastener per joist intersection (screwed in with a 45 degree angle through the hidden deck fastener as per the manufacturer's instructions). Or two top down fixings per joist intersection if installing without hidden fasteners. Where there is a butt joint over the joist there is not sufficient space for two hidden deck fasteners and to overcome this we fix one of the pieces with a screw at 45 degrees directly into the decking board groove. Never leave decking board without a screw at the butt joint.

### **Butt Joints**

During installation sort widths per row of decking to ensure you use pieces which match in width at the butt joints to keep the visual appearance as uniform as possible. Joints should only be done over joists and each end screwed securely into the joist. There is generally very little shrinkage on the lengths so butt joints should be as tight as possible. Do not forget to end seal at the butt joints. Some installers like to ease the ends with the same round as the edge of the decking in order to accentuate the butt joint and at the same time hide any slight width variance.

### **End Sealer**

Decking should be sealed after trimming on site to help prevent splitting and checking on the ends of boards. We recommend that boards are end-sealed immediately after cutting during installation. A clear, water resistant wax or penetrating decking oil should be used.

### **Finishing Options**

In order to inhibit surface checking and discoloration, decking can be finished with decking oil but many users prefer to leave the decking to grey naturally. Left untreated, most hardwoods including Ipe will weather to a natural silver grey colour. If you decide to finish the decking it should be treated with a penetrating sealer (decking oil) in dry conditions in accordance with the oil manufacturers instruction. It is important to understand that treating only one side of the decking material creates an unequal moisture transfer and may result in some slight cupping. If cupping does occur is usually settles after the wood has seasoned and the moisture equalises again.

It should be noted that oils can only inhibit early bleaching/weathering – they cannot stop it.

Bleached weathered timber may also show small checking which also expand and contract according to the exterior weather conditions.

*Please note that the above are our recommendations without liability and we repeat that a competent professional installer should be consulted in order to survey each particular site to correctly, check the decking moisture content prior to installation, assess the conditions and take responsibility for the installation.*

*Updated 19 May 2014.*