

# Bowens

# Installation Guidelines

## BEFORE YOUR DECK FAILS – READ THIS

A major factor that has influenced this situation is the trend for wide boards to be specified. A natural consequence associated with the greater use of wide decking is a higher rate of board movement, that is, shrinkage/expansion, depending on the time of year. It is also fashionable to use timbers of Australian origin, (the likes of; Spotted Gum, Ironbark Silvertop Ash) unfortunately, compared to Merbau, they have relatively high shrinkage/expansion rates.

All this means the installation fundamentals (below) are more the important for the good long term performance of the decking product.

### DECK GAP

Plan to leave a sufficient gap that will allow the boards to move, particularly in winter, so they will not come together. A consequence of this occurrence is severe cupping. Keep the following in mind, boards of 130 millimetres in width will expand by about half a millimetre for every 1% increase in moisture content that the boards will grow by during winter. Usually the growth (in moisture content) is about 4% to 6%, so the increase in board width can be about 2 to 3 millimetres. Keeping in mind the adjacent board is experiencing the same conditions, hence the need for a gap suggested below. Species that have a relatively high content of the lighter coloured sapwood, particularly Spotted Gum, will have some boards that will expand more. As a rule I suggest the following gap allowance when planning your deck; board width 130 millimetres at least 6 to 7 millimetres, boards up to 90 millimetres in width allow 5 millimetres gap.

### BOARD PREPARATION

I believe an oil based preservative (I suggest Cutek) be applied on all surfaces prior to installation, including the trimmed ends. This process acts as a sealer and helps slow down moisture loss or gain. Applying the preservative to the cut ends is particularly important because that is where most moisture is gained or lost in the decking product. A second coat should be applied after installation to the exposed surfaces. At that stage a coloured tint can be added if desired. This process gives the decking more stability and should be undertaken even if tinted appearance is not required. Cutek for instance, will slowly diffuse into the wood and 'grey off' in time and will be not seen on the surface of the boards. A common mistake I see is the first coat, usually a decking stain is applied to the exposed boards after installation. This means the underneath surfaces can lose or gain moisture at quicker rate than the top surfaces, accelerating the possibility of board distortion. The tint will help to prevent the 'greying off', but regular coatings will need to be applied if the tinted finish is desired, going forward. Natural Cutek will not prevent the wood losing its natural finish.

### VENTILATION

Regularly readers of my articles should know by now how much importance I place on this necessity. Decking is no different to flooring it must have fresh air underneath the deck. Many people mistakenly think the gaps between the boards will service the deck, it does not work that way. Allowance should be made to ensure air can easily service the sub-deck cavity. A problem I often see is the deck perimeters are a concrete slab or a swimming pool. This means a cross flow of ventilation is not possible and the possibility of mechanical ventilation should be investigated.

I am available for advice if this is the case. The usual consequence of no or lack of ventilation is damp sub-deck micro climate, causing the bottom of the boards to gain moisture and unsightly cupping.

### **INSTALL A MEMBRANE OVER THE JOISTS**

Another important facet of decking construction overlooked. This process not only helps to stop dry rot, but also means the wood remains dry and the joists will hold fixing nails/screws in place. Although treated pine will not rot, being a softwood will become too soft and consequently make it too easy for the fixing pins to move when the decking experiences climatic changes and naturally expands or contracts. These days custom U shaped products are on the market or just use plain malthoid.

### **PRE-DRILLING**

Drill a pilot or countersink hole, then drill the holes to facilitate the decking screws. This will help to harness the stress the decking will experience when there are the usual seasonal movement changes in the overall deck. These 2 operations should prevent the boards from cracking or splitting. If using a decking nail ensure the board ends are pre-drilled as well.

### **TYPE OF FIXING PIN THAT SHOULD BE USED**

Always use a properly designed decking nail or screw. If using a nail it should be at least 65 millimetres long for a 19 mm thick decking product. Unfortunately I believe many of the decking screws on the market to be an inadequate gauge, particularly when the joist is a treated softwood or a laminated LVL product. In my opinion the screw gauge should be at least 10g or for a wide board perhaps 14g. The fixing pins should be hot dipped galvanized or stainless steel particularly if the deck is close to salt water.

My final comment is on the type of decking product to use. Above I made comment about the relatively high shrinkage/expansion rates of Australian timbers. This is not to say they should not be used, but it means the above procedures should be employed, particularly if a wide board is specified. The problem product I come across the most is 135x19 Spotted Gum decking. My favourite decking timber is Merbau which is a very forgiving decking product. This is because the shrinkage/ expansion rate of this specie (Merbau) is about a third that of Australian species. Perhaps this could be part of the problem, that is, installers have been able to get away with not carrying many of the points listed above because they have used Merbau, but experienced problems when they have gone to another specie. However, it is not as durable as Australian species, where most products have a durability rating of class 1 above ground. Merbau has rating of class 2 above ground However, Merbau should still be Cutek treated or coated, particularly on the ends. Merbau has been known to experience shrinkage over the board length. It will also minimise bleeding, that has been a problem with this specie in the past.

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