



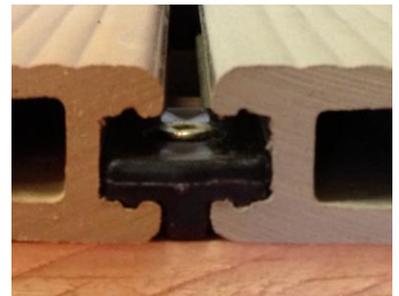
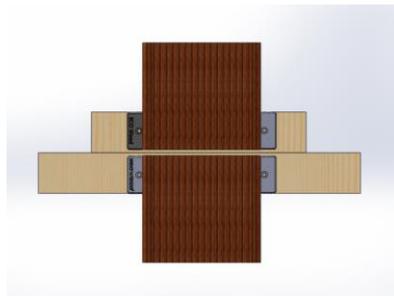
# SPECIFICATIONS FOR DECK CONSTRUCTION

## WHY USE ECOWOOD® COMPOSITE DECKING?

- ✦ ECOWOOD® is a mixture of wood flour and PVC which is pre-coloured and extruded in the shape of deck boards, in the Old English deck board style.
- ✦ This product is ideal for coastal conditions with low maintenance, which makes it ideal for holiday homes. Where wooden decks should be retreated every six months, this product only requires no treatment other than for aesthetic reasons.
- ✦ ECOWOOD® decking is available in standard 4 metre lengths and is 110mm wide and 22mm thick. It is currently available in four colours, namely Savanna, Coastal, Kalahari and Riverine. See the website for colour photos.
- ✦ Joist spacing of no more than 400mm OC (on centre) is specified for ECOWOOD® Decking.
- ✦ Although the initial cost of the ECOWOOD® Decking is similar to that of Hardwood decking, the longevity of this material and the fact that it has no maintenance, offsets the initial cost within the first 3 to 5 years.
- ✦ ECOWOOD® is manufactured in South Africa for African conditions and backed up by local factory support and 10 year warranty.

## DECK FIXING:

- ✦ 22mm x 110mm ECOWOOD® decking is attached to joists using EcoClips™ that fit into the side slots of the planks. These are fastened with 75mm stainless steel/hot dip galvanized/copper/cadmium coated/brass/aluminium alloy screws.
- ✦ **NO NAILS OR SCREWS ARE TO BE USED THROUGH THE PLANKS**, as this could lead to splitting of the ECOWOOD® decking planks.
- ✦ If deck boards are not of sufficient length to cover the entire span of the deck, joints must be staggered to ensure greater strength and all joints must butt on a joist. Double joisting should be used i.e. 2 EcoClips per plank end.



- ✦ Deck planks should always **END ON A JOIST**, and not left suspended.
- ✦ ECOWOOD® decking is automatically spaced by the EcoClips™ at 5mm apart to facilitate ease of cleaning.
- ✦ As ECOWOOD® decking already comes with its final brushed finish, markings that do occur during installation can be treated with a wire brush.

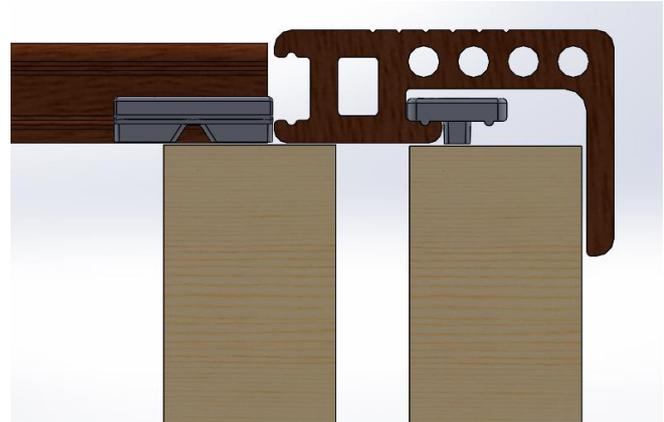
## CORNER FIXING:

- ✦ The ECOWOOD® Corner Plank can be used on all sides of the deck with or without cladding as per the pictures below:

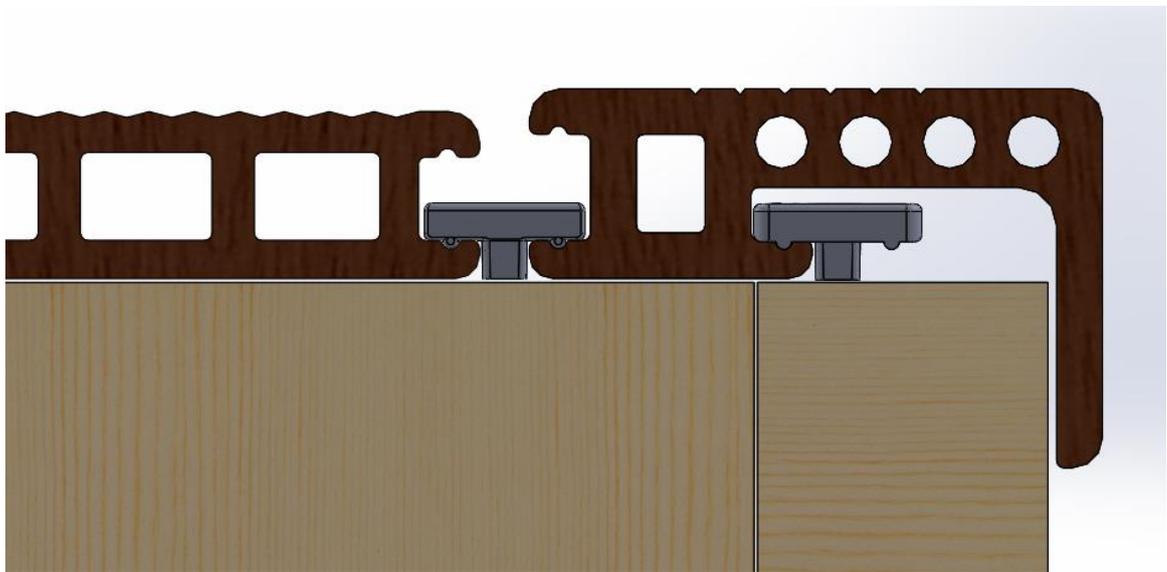
Deck End with Cladding:



Deck End without Cladding:



Deck Side (Corner Plank with Pioneer):



## EXPANSION GAPS:

- ✦ Like a wood composite decking, ECOWOOD® decking also expands, although this is less than with polypropylene or polyethylene based decking products.
- ✦ The expansion occurs due to 2 reasons. It is important to understand these reasons, as it directly influences the correct installation of the decking and providing adequate expansion joints:
  - ✦ **MOISTURE UPTAKE:**  
During the manufacturing process, all moisture is removed from the wood content of the composite decking. After installation, the product will re-absorb some moisture up to about 6%. The locality of the deck i.e. coastal, Highveld or next to a swimming pool, will determine the level of re-absorption. This moisture re-absorption leads to a once-off one-directional expansion of the decking.
  - ✦ **TEMPERATURE:**  
The second form of expansion occurs due to fluctuations in day- and night temperature. During the heat of the day, the planks will expand and during cooling off at night, the planks will contract. This is therefore a recurring bi-directional expansion
- ✦ During installation, expansion gaps should be left to allow for both types of expansion. This might lead to

fairly large expansion gaps to be left initially, which will close somewhat during moisture uptake. It is important to explain to clients that these gaps will close as the expansion takes place over a period of a month or two. The initial expansion and contraction can lead to a movement in planks that can cause some gaps to enlarge and others to shrink. This is a normal settling process and is not due to planks “shrinking”. Depending on the deck installation the settling of the planks may require a re-spacing of the planks after a few months to ensure even gap spacing.

- ✦ The guideline for expansion gaps are as follows. Please note that this is only a guideline and that the specific locality of the deck should be taken into account:

DECK LOCALITY	INNER GAPS	OUTER GAPS (if not open ended deck)
Coastal/Lowveld	8mm	10mm
Inland/Highveld	7mm	10mm
Swimming Pool/Jacuzzi	8mm	10mm

- ✦ Decking Corners – when ECOWOOD® decking corners are used to finish off the end of a deck, it is important to fix the corner to the ends of the decking planks and NOT the sub-structure, to allow the corner to move with the planks during expansion.
- ✦ Cladding – when using ECOWOOD® decking to clad the sides of a deck, experience has shown that it is better to use the planks in a vertical configuration than in horizontal lengths.

## TREATMENT:

Substructure which cannot be treated after assembly, should be treated with at least two coats of Carbolinium. One prior to assembly and one post assembly. Creosote can also be used for treatment, but in warmer climates creosote tends to sweat and drip causing damage to anything under the substructure.

Ecowood decking and profiles are UV stabilised for a period of 10 - 15 years. Actual UV stability may vary due to specific sun exposure. Once deemed necessary the Ecowood decking can be treated with CompoSeal to bring back the original darker colour.

**NB:** Varnish or other film forming treatments should never be used on decks as these treatments fail due to the fact that they cannot withstand the moisture / heat / UV cycles that decks are exposed to.

## FASTENERS:

All fasteners, screws, nails or other metal used with the EcoClips™ should be hot-dip galvanized, brass, copper, cadmium coated or stainless steel. We recommend the use of Black Tipped Stainless Steel Ecowood Decking Screws.

**PLEASE NOTE: IMPROPER INSTALLATION WILL VOID THE WARRANTY ON THE DECKING!**

## GENERAL GOOD DECKING INSTALLATION AND DESIGN PRACTICE

### GIRDERS:

- ✦ On span of 2.5 metre or less, girders must be at least 50 x 228 mm;
- ✦ On span of 2.5 metre to 3.5 metre, girders must be at least 76 x 228 mm;
- ✦ If deck size is more than 3.5 metre two or three spans as mentioned in 1 and 2 above must be used.

Girders must be securely attached to reinforced concrete pillars or creosote/CCA (Copper Chromate Arsenate) treated poles of minimum diameter of 150 mm, set in a concrete base.

Where girders are parallel to and attached directly to walls, 8mm Rawl bolts spaced at no more than 600mm should

be used for 2,5 metre span and 10mm Rawl bolts spaced at no more than 600mm should be used for span greater than 2.5 metre.

Where girders are attached to walls at an angle, Galvanized/Stainless Steel girder hangers must be used. Girder hangers must be attached to the wall with at least two (2) 10mm Rawl bolts and girder must be attached to hanger with at least one 8mm bolt or coach screw.

**Note: Standard galvanised girder/joist hangers manufactured of 1.5mm sheet metal are not recommended. Girder/joist hangers should be manufactured of 50x50x5mm angle iron and be hot dipped galvanised. H stainless steel is used for the manufacture of girder/joist hangers, thinner material can be used.**

## JOISTS:

- ✦ On 2.5 metre span, or less, joists must be at least 50 x 152 mm;
- ✦ On span of 2.5 to 3.5 metre, joists must be at least 50 x 228 mm.

Dependant on the location of the deck (private or public)d, joists must be spaced at intervals of between 300 and 400mm OC (on centre) Joists must be attached to Girders with Galvanized/Stainless Steel joist hangers (See above note on girder/joist hangers) with 10 x 75mm coach screws or notched for and attached with a 50 x 76 mm ledger strip. Rim joists, that is joists on the outer edge of a deck, where joist hangers cannot be used, can be attached to girders with two (2) 10 x 125mm or 13 x 150mm Coach screws, dependant on the thickness of the girder.

## Notes:

1. **As in the case of a house, the substructure of a deck is the foundation of the deck. Inferior materials and/or specifications should therefore never be used for the construction of the substructure, as the strength of the deck relies entirely on the strength of the substructure.**
2. **For safety purposes decks should be designed for a carrying capacity of 250 kilograms per square metre (50 pound per square foot). Of this one fifth, or 50kg is dead weight, i.e. the weight of materials, and four fifths, or 200kg is live weight, that is the weight of furniture, people etc.**

## STAIRS:

The design and positioning of stairs are critical for safety and comfort of use.

According to regulations stairs should be designed within the following parameters:

- ✦ Step elevation from the top of one step (raisers) to the top of the next should be between 160 and 180mm;
- ✦ Step tread width should be between 250 and 300mm with a maximum step overhang of 10mm with the next step; and staircase incline should never exceed 38 degrees.

Needless to say that stairs should be very sturdy and tread boards (raisers) should be very strong.

## FINAL NOTE:

**The above are the minimum specifications for normal usage decks. Each deck is, however, individually designed for the purpose for which it will be utilised. If, for example, the owner intends to install a Jacuzzi on the deck, a much stronger substructure will be required. The same will be applicable if the deck will be used as a public amenity where no, or little control can be exercised on the number of persons on the deck at any one time. All possible factors should be taken into consideration with the design and construction of any deck.**

## PUBLIC LIABILITY:

Where public liability exists:

- ✦ Girders should always be 76 x 225mm and span of 3 metres should never be exceeded;
- ✦ Joists should always be 50 x 228mm and span of 3 metres should never be exceeded; and
- ✦ Joist spacing should always be on a factor of 10, therefore 250mm.

### Standard design for 3.5 X 3.5 Metre deck

