

For a video of these Fixing Instructions, please visit the "Fixing & Technical" section in the "Merbau Clip" area of our website.

## Please Read These Important Notes

- The Merbau clip has been designed specifically to fit 90mm *Kiln* dried Merbau/Kwila. The clip will perform at its optimum for Merbau that is sized between 89.5 and 90.5mm. Merbau consistently outside of this range (especially less than 89mm in width) is unsuitable for use with this clip.
- Other types of hardwoods (eg: Yellow Balau) have not been tested with this clip and are unsuitable for use. It is extremely important that hardwoods used are kiln dried, be consistently sized as described above, have an anticipated shrinkage width of no more than 1mm, and have bows/warps no greater than described in Step 8 of these Fixing Instructions.
- Thought should be given to finishing the last board option at the front of your deck before actual commencement of your deck.
- Please ensure all the KlevaKlips are clean, sound, dry and free of oil or grease. Thoroughly remove all loose particles and dust prior to fixing.
- Never fix boards relying on adhesive only. If fixing boards in areas without KlevaKlip make sure you use some type of mechanical fix. (eg screw)
- KlevaKlip is not suitable for non-square decks or irregular joist heights. Whilst the fixing of the boards into the KlevaKlip is fast and will save time over conventional hand fixing, it is important that extreme care is taken in installing your first row of KlevaKlips. This will govern the straightness of your deck.

### APPROVED ADHESIVES FOR KLEVAKLIP MT90G/MT90S MERBAU CLIPS

| Board Type                    | Approved Adhesives                  | Coverage               |
|-------------------------------|-------------------------------------|------------------------|
| 90mm Kiln Dried Merbau Boards | Exterior-use construction adhesive. | 1 Cartridge approx 3M2 |

## Step 1- Positioning the Front KlevaKlips to the Outer Side Joists

The Merbau clip relies on the teeth locking into the board by means of a fixing tool. The direction of the uprights of the clip signals the direction in which to lay your boards down. Starting from the outside front edge of your deck place a KlevaKlip on each on of your outer side Joists of your decking substructure.

In order to keep with a safe working environment, we recommend that the first row of clips are laid with the uprights pointing towards the front of the deck (in the direction of the arrow as shown in the diagram opposite) – this is quite important and we'll show you more about it as we get to start inserting our boards.

At this point you need to consider the set-out of the deck in:-

- In order to address the fascia you are going to use
- To address whether you are going to have an overhang of the first board or whether it will finish flush at the front of the deck.

Bearing in mind that the open end of the clip holds half a board, the position (overhang or flush) of this front board will govern where the first KlevaKlips will be positioned from the end of your joist structure.

For an overhang situation, we suggest that the first clip is positioned approximately 15mm back from the front of your joist to utilise the Finishing Clips that are included in every box of KlevaKlip Merbau Clips.

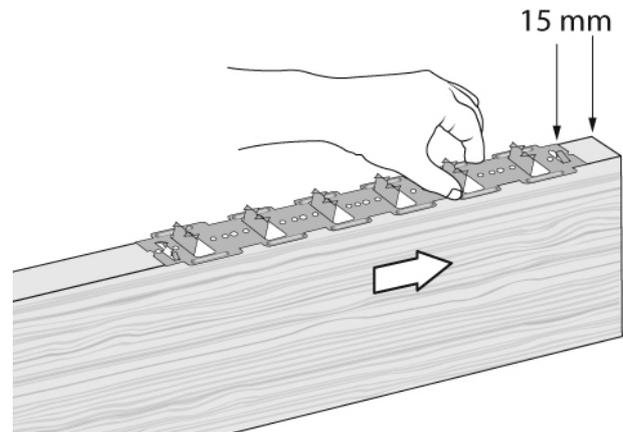
For a flush finish, you can simply cut the clip at the last upright and have the base of the upright finishing flush with the end of the joist.

If an overhang is required make sure the KlevaKlip's are sitting squarely on the outside joists and are positioned to allow for overhang for the front full deck board and fascia when fixed.

Note – the recesses on the sides of the clips are set at a width of 45mm to assist with positioning the clip squarely on standard 45mm joists.

Full deck board widths are recommended at the front of your deck and once this is obtained we suggest you place your other KlevaKlip's on the end joists towards the house to check squareness of your deck and to ensure that the last deck board width against the house is not too narrow.

**NOTE:** Our diagrams show securing the Merbau clip back 15mm from the front of your joists to allow for use of the finishing clips (for overhang)  
If you require flush finish you will have to cut the clip at the last upright.  
Please see Step 11 Finishing Front edge deck board for further information



## Step 2- Fixing the Front KlevaKlips to the Outer Side Joists

For this deck, we are going to have a small overhang of the first board, with fascia board underneath. Therefore we'll place our clip approximately 15mm back from the front end of the joist. Note the new knuckle nail built into the clip. This is for fast, easy, but temporary fixing of the clip to the joist. Please note that you still require additional fixings into the clip once you have it correctly positioned.

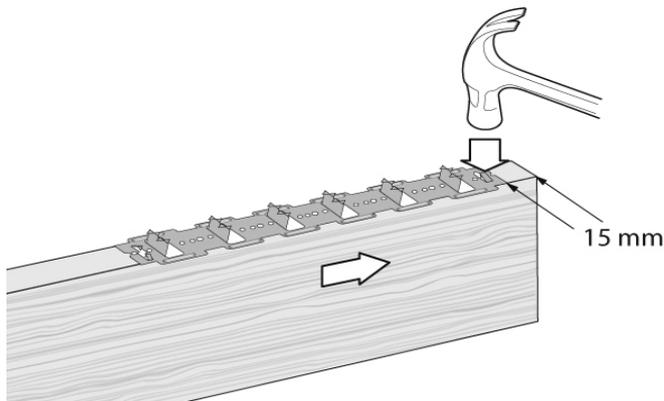
**"Full fixing of the clip to the joist should be done with one fixing per board space in the clip, plus one fixing for each end of the clip – a total of seven fixings."**

Your choices of fixings are:

- ✓ 8 gauge x 25mm galvanized button-head screws
- ✓ 32 x 3.15mm galvanized connector nails
- ✓ 50mm dome-head, ring-shank decking nail fired from coil nail gun

## Step 2 (Cont) Fixing the Front KlevaKlips to the Outer Side Joists

Please note, that if you are using stainless steel clips, it is essential that you use stainless steel fixings. Use counter-sunk heads if button-heads are not available.



### Tips for fixing clips to steel joists:

When fixing to steel joists, a thin coat of adhesive/sealant (eg Fullers Toolbox) should be applied between the top of the joist and the clip. Spread this coating with a broad-knife. When using Firmlok joists, the recess at the top of the joist should be filled with sealant. This gives your joists excellent protection against corrosion caused by water ingress through screw holes, and also provides a barrier if you are using stainless steel clips on galvanised joists.

The knuckle nails at the ends of the clips will not penetrate the steel joists and should be flattened with a hammer prior to installation.

Fixings for steel joists – use 10 gauge x 18mm galvanised self-drilling wafer-head screws, or their stainless steel equivalents if using stainless steel clips. When using Firmlok joists, be careful not to overdrive the screws – this can result in bending the clip into the recess at the top of the joist, making an uneven surface for fixing the decking boards.

Please ensure that when you remove the fixings holding the temporary board (Step 9), the holes left by the tek screws are properly covered by the sealant on the joist (before the next row of clips are laid).

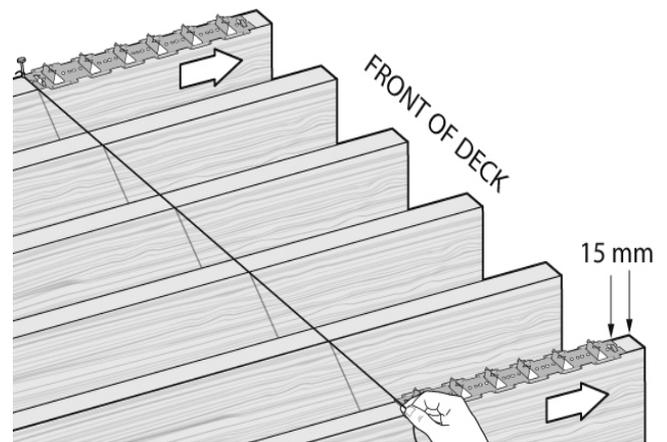
### Fixing Your Deck from the House Outwards:

If your deck is low to the ground and height is not a safety issue, you may wish to start your clips from the house and work towards the front of the deck. In this situation you will need to cut the first clip and screw the leading edge (against the house) of the first board.

## Step 3- Positioning the Front KlevaKlips to the Inside Joists

Now that the outer side KlevaKlip's have been securely fastened to the joists, run a string chalk line from one of the outer side KlevaKlip's across the inner joists of the deck on to the other outer side KlevaKlip. Pull string tightly and flick the string line and this will mark a chalk line on all the internal joists between the two outer side joists.

Using this chalk line mark, you can then correctly position the remainder of front KlevaKlip's on to the other internal joists. Fix to the joists using the same fixing methods as shown previously. Using this method will align your inside KlevaKlip's directly in line with your outside KlevaKlip's and negate the effect of any incorrect internal joist length.

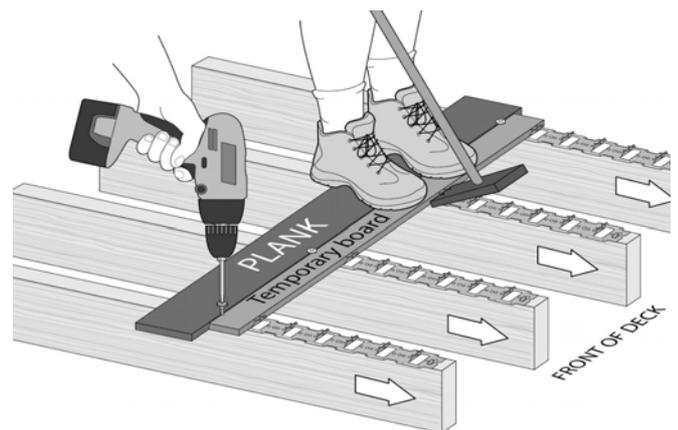


## Step 4- Getting your system ready for the First Board

As earlier advised, we recommend that the first row of clips points towards the front edge of the deck. This is so that you can work safely off your aluminum decking plank whilst getting the first few boards fixed onto your deck. Note – in situations when you are working at heights, building regulations may stipulate that you must have scaffolding erected around your deck.

To set your clip up ready for the first board, simply push a spare decking board hard up against the “trailing tooth” of the first clip (with no adhesive as this board is removed later). Secure this board by screwing at a slight angle into each joist immediately behind the board – wedging the board tightly against the “trailing tooth”. (Screw well down to avoid a trip hazard.) Place the aluminum deck plank firmly against this board. This gives you a stable base. Using the fixing tool and a mallet, locate onto the teeth and tap the first row of uprights into the vertical position. This fixing tool is very effective and does not need to be hit with great force. The clip is now positioned to accept your first official decking board.

**Tip: The tool has a hole in it – for easy use, and to save bending over as much, we insert a small length of broomstick handle into the hole.”**



## Step 5- Applying Adhesive to your KlevaKlip's

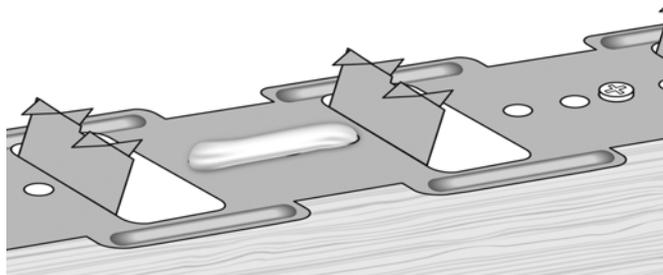
Now all the preliminary work has been done, it's time to get serious about putting our deck down. Before laying the next board, construction adhesive needs to be applied to the base of the clip.

Suitable adhesives for use with KlevaKlip are:

Use any exterior-approved construction adhesive that is recommended for use with timber and metal. Our preferred adhesive is “Fullers Toolbox”.

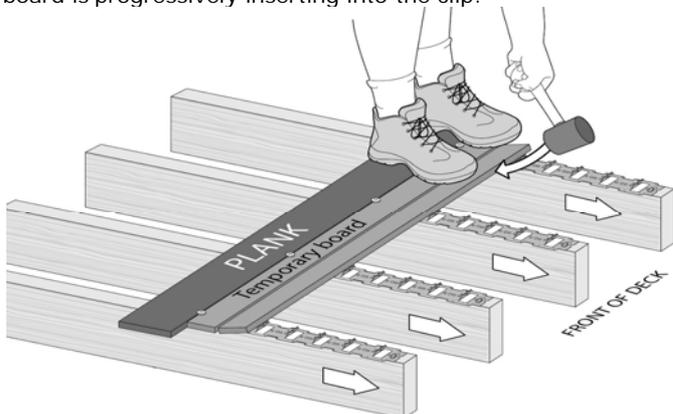
Apply a bead of adhesive, approximately 10mm high, across the middle of each clip.

## Step 5 (Cont) -Applying Adhesive to your KlevaKlip

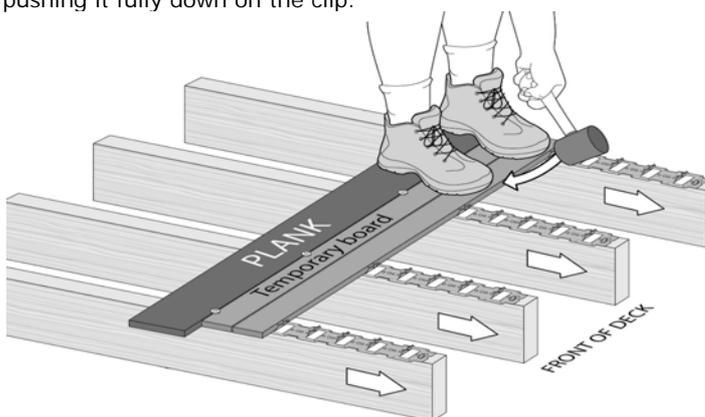


## Step 6-Inserting Your Deck Boards

Place the board on the clip, sitting the leading edge of the board on the ridges on the side of the clip, and resting the edge of the board against the teeth of the clip. The board will be sitting at an angle with the trailing edge of the board sitting up on the following teeth. To engage the board, it is important to keep weight down onto the leading edge of the board to ensure engagement is done with the bottom corner of the board sitting on the ridge of the clip. "Tap" the mallet along the length of the board to get a feel for the "spring" in the board. Then go to one end of the board and hit the trailing edge of the board with the mallet with medium force to properly engage the teeth. Always work progressively across 5-6 joists at a time to ensure the board is progressively inserting into the clip.



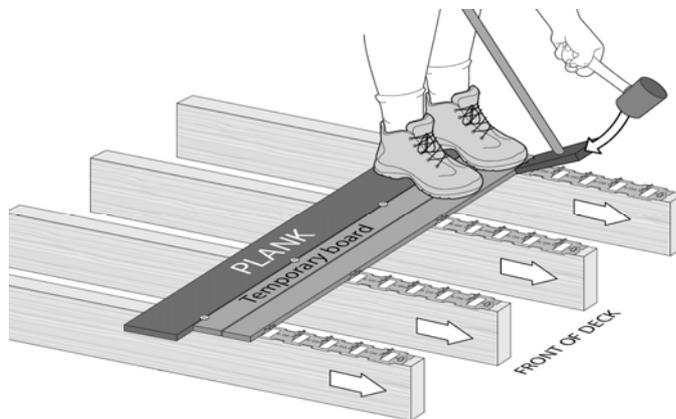
As the leading edge of the board engages with the leading teeth, the trailing edge will move clear of the trailing teeth on the other side of the board, allowing the board to sit flat on the base of the clip. Adjust your foot-pressure to be fully across the board, pushing it fully down on the clip.



Before using the fixing tool to lock the board into the clip, ensure that the teeth are correctly locating into the board across the following 5-6 joists from the teeth you are about to "lock". Lock the teeth into place at the first joist using the fixing tool. Move along the length of the board repeating this procedure.

**Tip – Longer or bowed boards will need to be "locked" at one end before moving too far along the board, whilst shorter boards can often be fully engaged in the clip before the uprights are "locked".**

**Please note –** when the board is fully fixed into the clip, the uprights of the clip should be quite vertical, and there should be approximately the same gap between consecutive boards and the uprights between them. Therefore, heavy handed hitting of the fixing tool may push the upright over too far, so is actually detrimental to the job rather than beneficial.



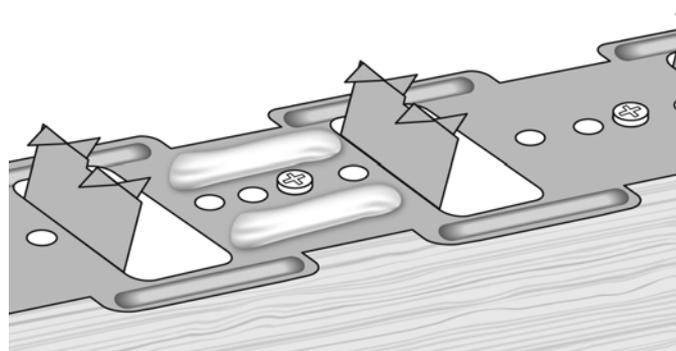
**Tip – inserting boards is quicker and easier with two people. Position one person at each end of the board and work towards the middle.**

## Step7-Butt Joints

At the top centre of each KlevaKlip upright you will see a notch. This notch is designed to line up with each your butt joints. If the board is going to have a butt-joint, please ensure that the end of the board finishes in the middle of this notch.

For butt joints, you need to apply two beads of adhesive – one on each side of the clip to represent each board participating in the butt joint.

**Tip – do not lock the outer teeth into the board at butt joints until both boards have been inserted into the clip at the joint.**



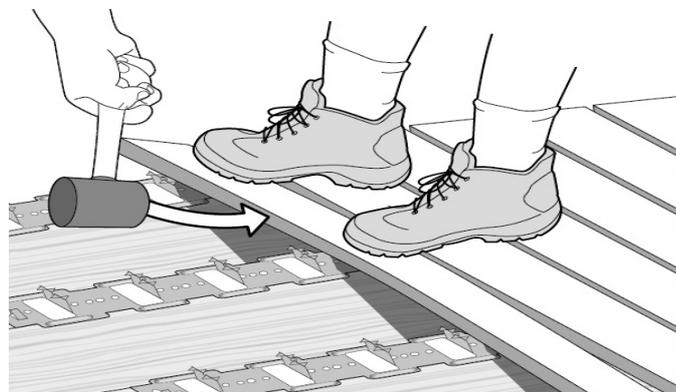
## Step 8- Bowed Boards

**Tip – Always check boards for bows, bends and warpage before starting to install the board.**

Please note that badly bowed boards are not suitable for use with the KlevaKlip Merbau clip, however the clip will accommodate boards with a bow equal to approximately 10mm for every 2.5 metres of board length.

Position the bowed board so that when one end is in the clip, the furthest end is curved away from you. Work the board into the clip along its length as you would a straight board, progressively straightening the board as you work it into the clip. Again, always work a number of joists in front of the joist you are about to "lock" to ensure the teeth are locating into the board with the edge of the board resting on the ridge of the clip.

It is also good practice to use a small wedge to straighten boards in the clip slightly before the adhesive has set. Such wedges should be left in place for approximately 24 hours.



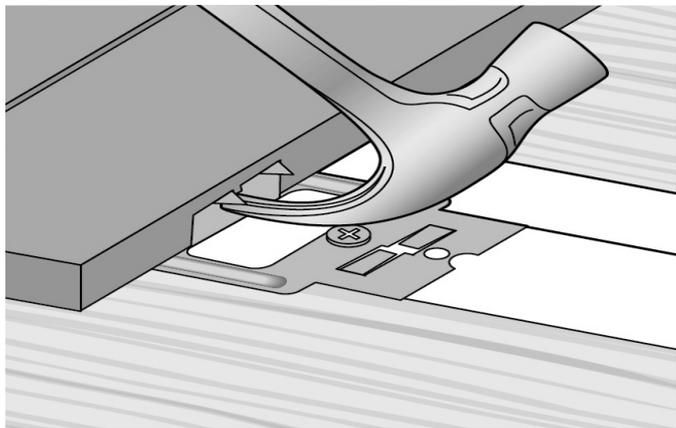
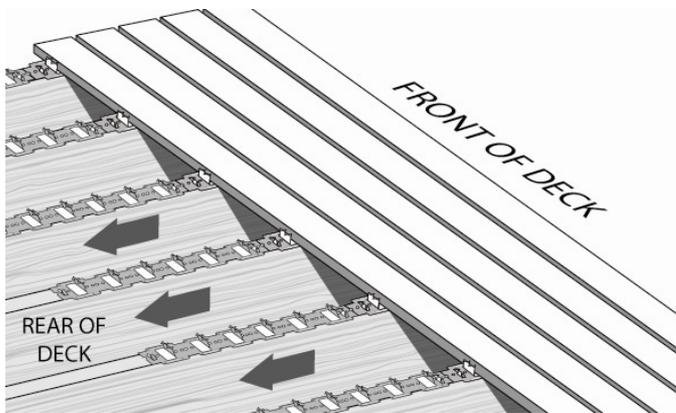
## Step 9- Installing the remaining KlevaKlips

Now you have completed your first front row of KlevaKlip's and deck boards it is time to fix the remainder of your deck. In some situations, you may decide to clip out the rest of the deck before you lay the boards. The big difference now is that we will work towards the house in the directions of the arrows from the firm base of deck that we have laid. This is simple, safe and effective. To do this, we now run the uprights of the KlevaKlips towards the house. You will note that the clips will have the double "fixing knuckles" back-to-back as you reverse the direction of laying. Simply place next KlevaKlip at the back end of the previous clip making sure both KlevaKlip's are hard up against each other. (End to end).

**Note – use the claw of your hammer to level the "trailing" teeth of the "first clips" to the horizontal position to assist them to receive the first board heading in the opposite direction. (see diagram)**

Secure the remainder of the KlevaKlip's to the joists using the same fixing methods as described previously. Put down your adhesive. Fix the boards down as previously described.

**Tip: After laying a few boards it is good practice to lightly hit down on top of the previously laid boards with a rubber mallet, making sure the board is sitting flat in the clip.**



## Step 10 - Modifying KlevaKlips

You can design your deck width to suit full KlevaKlip lengths however, in some cases you may have to cut the KlevaKlip to fit. This will happen at the back of the deck generally against the house end. Whilst you can cut the fixing tool for fixing in tight spaces near the house, you will generally find that the last board on the deck will need to be fastened off with a screw from either above or below the deck.

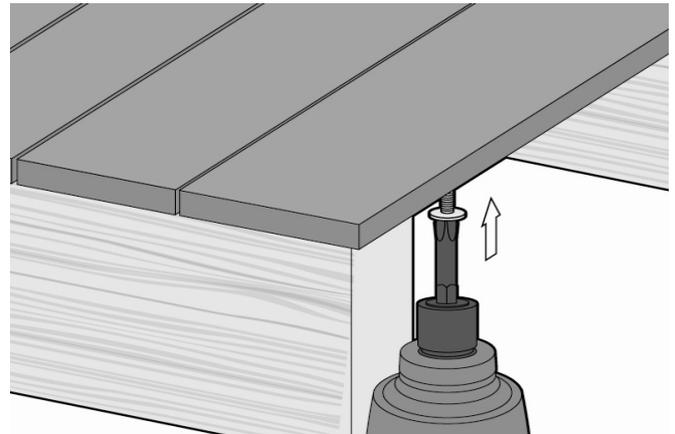
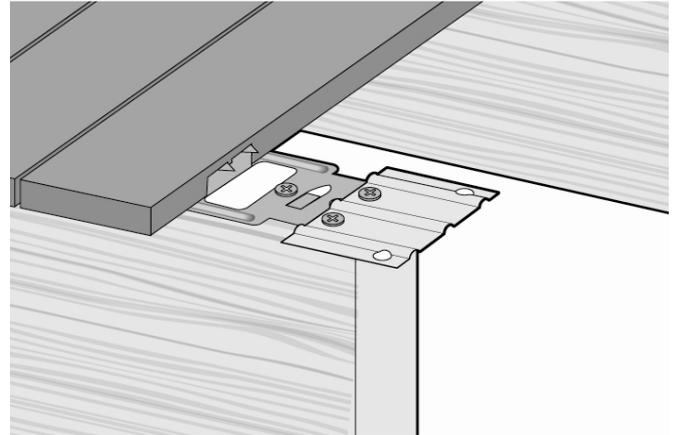
**Tip: Last board adjustments can be made when fixing the initial KlevaKlip's to the outside joists, as suggested in Step 1 you place your other KlevaKlips on the end joists towards the house to check squareness of your deck and correct last board width against the house.**

## Step 11 – Finishing Front Edge Deck Board

### Overhang Method

Initially we secured the KlevaKlips 15mm back from the front of the joist to allow for the fitting of the finishing clips. Simply attach the finishing clip with the ridge facing upwards to the top of the joist with 2 screws. Apply a bead 10mm of construction adhesive into the base of each of the KlevaKlips. Select a straight deck board and working from the centre hitting the trailing edge of the board with the mallet with medium force and working towards either end of the board to fully engage the leading edge into the clip. Once engaged into the leading edges fix 2 screws from underneath to secure.

Depending how your deck is constructed you can then utilise a deck board for the fascia board to cover your joist ends.



### Flush Finish

Only use this method if you don't require an overhang of your front deck board as this utilises the upright on the clip to secure the front edge deck board.

With a pair of snips cut the last half board end off, then you can also remove the outside teeth with a pair of snips.

**TIP: Be careful that you cut the correct end of the KlevaKlip as they are both different. You will need to cut the end where the single fixing knuckle is located not the double fixing knuckle end.**

## Replacing a board

If you find at some stage that you need to replace a board in your deck, please go to the "Fixing and Technical" section in the "Merbau Clip" area of our website. You will find a video showing how to replace the board.