

# COMPOSITE DECKING INSTALLATION GUIDE

Issue 1



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### BE SAFE WHEN WORKING AT HEIGHT

Ensure you conform to the latest Work at Height Regulations. For more details, visit:

[www.hse.gov.uk/work-at-height](http://www.hse.gov.uk/work-at-height)

### If in doubt at any stage

Please contact our Technical Support for additional support or advice.



0333 777 3047

# STORAGE & HANDLING

Whilst our composite materials are highly durable we do recommended you follow the below guidelines for storage, handling and installing, to ensure products are kept in the best possible condition.

## STORAGE

- ▶ Materials should be stored under cover in shade, and protected from weather until ready to install.
- ▶ Materials should be covered and kept dry until ready to install to ensure a clean surface. Products should not be stored outside and or covered with plastic sheeting.
- ▶ All composite products should be stored supported above the ground at 500mm intervals on a flat clean surface. Supporting battens used in storage should align through the stack to equally transfer the load.
- ▶ Boards must be stacked on top of each other
- ▶ Where multiple pallets are delivered these should not be stacked higher than 3m per stack.
- ▶ Eurocell will not be held responsible for issues that arise from poor storage.

## HANDLING

- ▶ Decking materials should be placed and not dumped when unloading. Boards should be lifted and set down with care to avoid damage. Do not slide boards over one another.
- ▶ Decking boards should be carried in the middle and on their edge for best support when moving.
- ▶ During installation, avoid sliding or dragging any equipment across the board surface to avoid tarnishing the surface.
- ▶ The surface of the decking boards should be kept free of construction debris and material to prevent damage to the boards. As with all sites, surfaces should be kept clean and tidy for the best installation outcome.

## PRE-INSTALLATION INFORMATION



- ▶ **Eurocell hold no responsibility for installations that are not carried out to instructions provided or inferior installations.**
- ▶ **Failure to install in accordance to these instructions will invalidate the Product Guarantee.**

# SAFETY & USE

Prior to installing any composite system we recommended that you consult local building regulations for any special requirements or restrictions that may apply. The illustrations and accompanying instructions in this guide are for illustrative purposes to provide a typical installation scenario, and do not replace the advice of a licensed professional in the field.

## SAFETY

- ▶ Personal Protection Equipment (PPE) should be worn at all times (COSHH Assessment summary available). When cutting and installing boards it is advised to wear gloves, protective eye wear, a dust mask, long sleeves and trousers.
- ▶ Dry and windy environments may result in a naturally occurring static build-up in composite products. The level of static build up will not cause personal injury.
- ▶ All composite decking boards **MUST** be installed on a substructure to allow adequate air flow beneath - this prevents any excessive water absorption. Boards cannot be laid directly onto a flat surface. A minimum of 25mm clearance beneath the decking should be provided to allow adequate drainage and drying.
- ▶ Excessive heat may be felt on the surface of the composite decking products from external sources such as reflection of sunlight from Low-E glass. This may cause an unusual heat build-up on any exterior surfaces. Excessive heat exposure may cause: boards to sag or warp, expansion/ contraction at increased levels, accelerated weathering, and in extreme circumstances melt the board surface. Note - A rise to such adverse levels is deemed extremely unlikely in the UK due to the stable climate.

## USE

- ▶ Standard woodworking tools can be used to install our composite products. When using a chop saw we would recommend a 60T+ Multipurpose Aluminium blade for maximum efficiency and neatness on cuts.
- ▶ We recommend the Eurocell screws provided with the T-Clips for installation of the boards - using any other screw system will invalidate the installation warranty. All fixings should be fastened at 90 degrees to the decking system.
- ▶ Before starting, It is imperative to plan your decking to ensure the best looking layout is achieved. We would recommend paying particular attention to fixed elements such as door thresholds, gutter outfalls and walls in order to determine the optimal laying pattern and starting position of the first boards.
- ▶ Forma and Clarity Composite Decking Boards are not intended for use as primary load-bearing members. I.e. cantilevered structures, supports, beams or stringers.
- ▶ Boards must be supported by a compliant substructure at  $\leq 400\text{mm}$  centres and absolutely **CANNOT** be installed onto existing decking boards.

# TOOLS

## RECOMMENDED TOOLS TO INSTALL FORMA AND CLARITY DECKING

Standard woodworking tools can be used when working with Eurocell Decking. If you are unsure on how to use any tool, please consult the tool's manufacturer's user manual.

- ▶ Circular Saw - we recommend a 60T+ Aluminium / laminate multipurpose blade to achieve the cleanest cuts.
- ▶ Mitre Saw extremely useful
- ▶ Jig Saw
- ▶ Hand Drill
- ▶ 3mm and countersink drill bits (SmartBit countersink tool available)
- ▶ Tape Measure
- ▶ Set Square
- ▶ Stringline
- ▶ Spirit Level
- ▶ Protective eye wear and relevant Personal Protection Equipment (PPE)
- ▶ Pencil

## PRE-INSTALLATION INFORMATION



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# CALCULATING BOARDS

To determine how much Eurocell Decking material will be required, you can either use detailed plans or follow the method below. Alternatively, feel free to speak to one of our technical team on 0333 777 3047

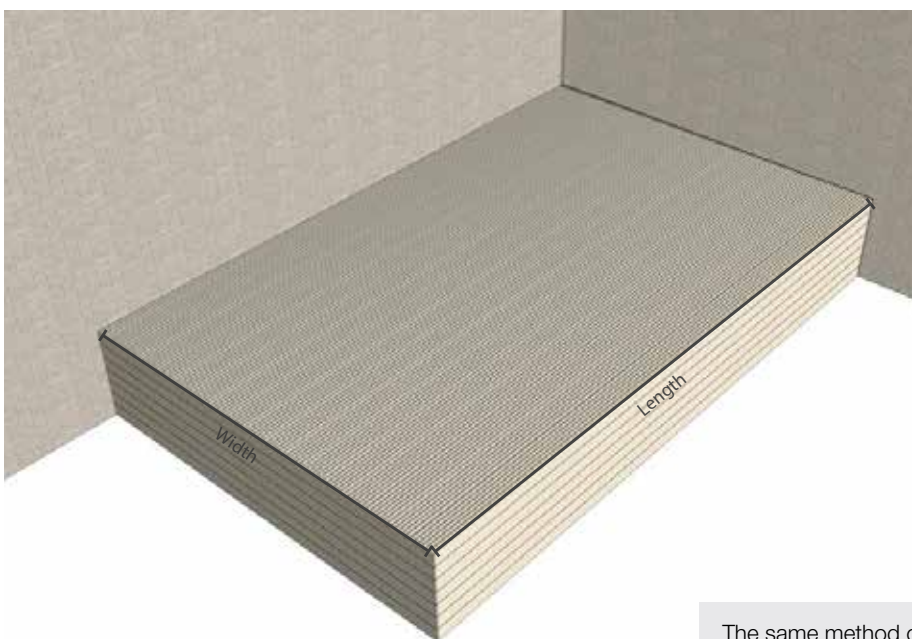
- ▶ Start by measuring the width and length of your proposed decking area(s)
- ▶ Plan which direction to lay your decking
- ▶ If the boards are laid lengthways, to find the number of board rows, divide the deck width by the width of the boards, plus a 5mm spacing per board (allows for the hidden T-Clip):

Eurocell boards are available in the following sizes:

145mm (W) x 25mm (D) x 3660mm (L)

For example, for a decked area 3.1m Wide x 6m Long, boards (150 x 25mm) with 5mm hidden fasteners:

- ▶  $1\text{m width} / (0.150\text{m} + 0.005\text{m}) = 20$  boards wide
- ▶ Now multiply the length of the deck by the number of boards wide (given above). This gives you the total linear meters of deck boards required:  $6\text{m length} \times 20 \text{ boards wide} = 120$  linear meters
- ▶ Next, divide the total linear meters of decking by the length of board being used:  $120 \text{ linear meters} / 2.9\text{m board length} = 41.3$  lengths of 2.9m decking boards
- ▶ Finally, multiply the number of total boards by 1.05 to include for 5% wastage:  $41.3 \times 1.05 = 43.365$  or 44 Boards.



The same method of calculation can be used to work out the number of boards required to the vertical fascia's to the deck.

# DECKING COMPONENTS

Please ensure you are familiar with all the decking components prior to starting.

Decking Board

Various colours



# DECKING ACCESSORIES

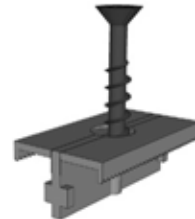
Starter / Finish Clip (Steel)



Hidden T-Clip (Plastic) and Screw



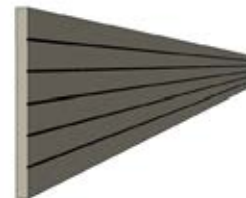
Locking clip (Steel) and Screw



Angle Fascia Trim (42x6x2900mm)



Flat Decking Trim (10x150x2900mm)



Colour Coded Screws (250pcs or Individual)



Composite step board (25x150x2900mm)





# PRE INSTALLATION NOTES

Decking areas can take many forms and scales of complexity. The following guide portrays the steps to install the basic board system and side trim. The approach shown can be used to develop terraces and step details however these will require further planning and consideration.

The diagrams shown use a external grade timber sub-frame on which to fix the decking. Boards can also be fixed onto aluminium or solid plastic frames. Eurocell are able to offer support with and design approaches which vary from that shown here.

\*\*\* Please refer to the table on page 33 when installing the deck boards to determine the gap (mm) between boards and adjacent structures.

Acclimating the composite boards least two days prior to installation is recommended. This will help prevent unwanted shrinkage issues seen during and after installation.

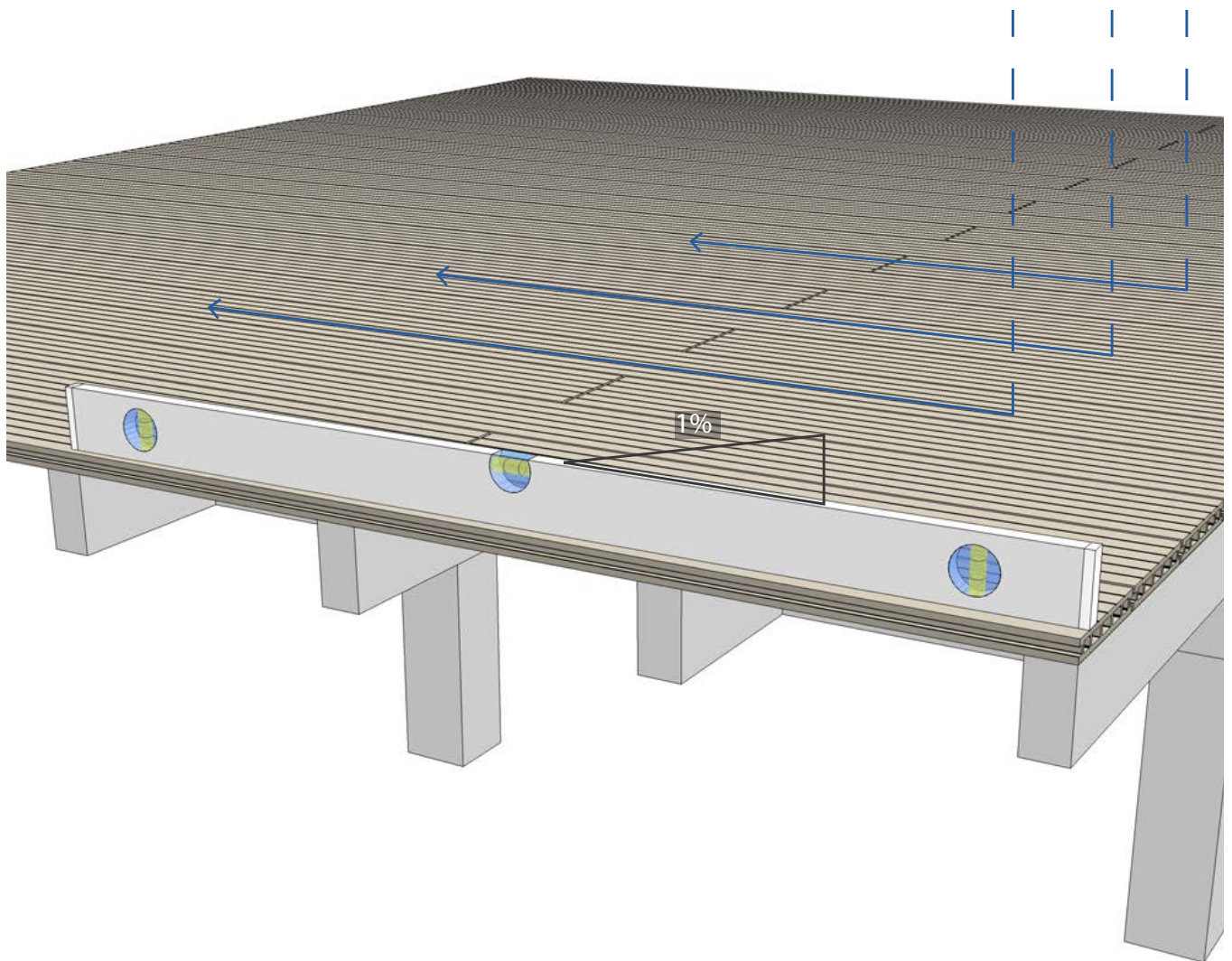


Typical installation: decking area adjacent to house

# FALLS AND GRADIENTS

Whilst not absolutely necessary, it is recommended that composite decking boards are installed at a 1% gradient.

Boards laid parallel to the direction of fall will encourage water to shed via the pre-formed groves in the boards (FORMA only), and so further reducing the risk of slipping when wet.





# INSTALLATION OF SUBSTRUCTURE

## 1. TIMBER JOISTS

### Decking Joist Layout:

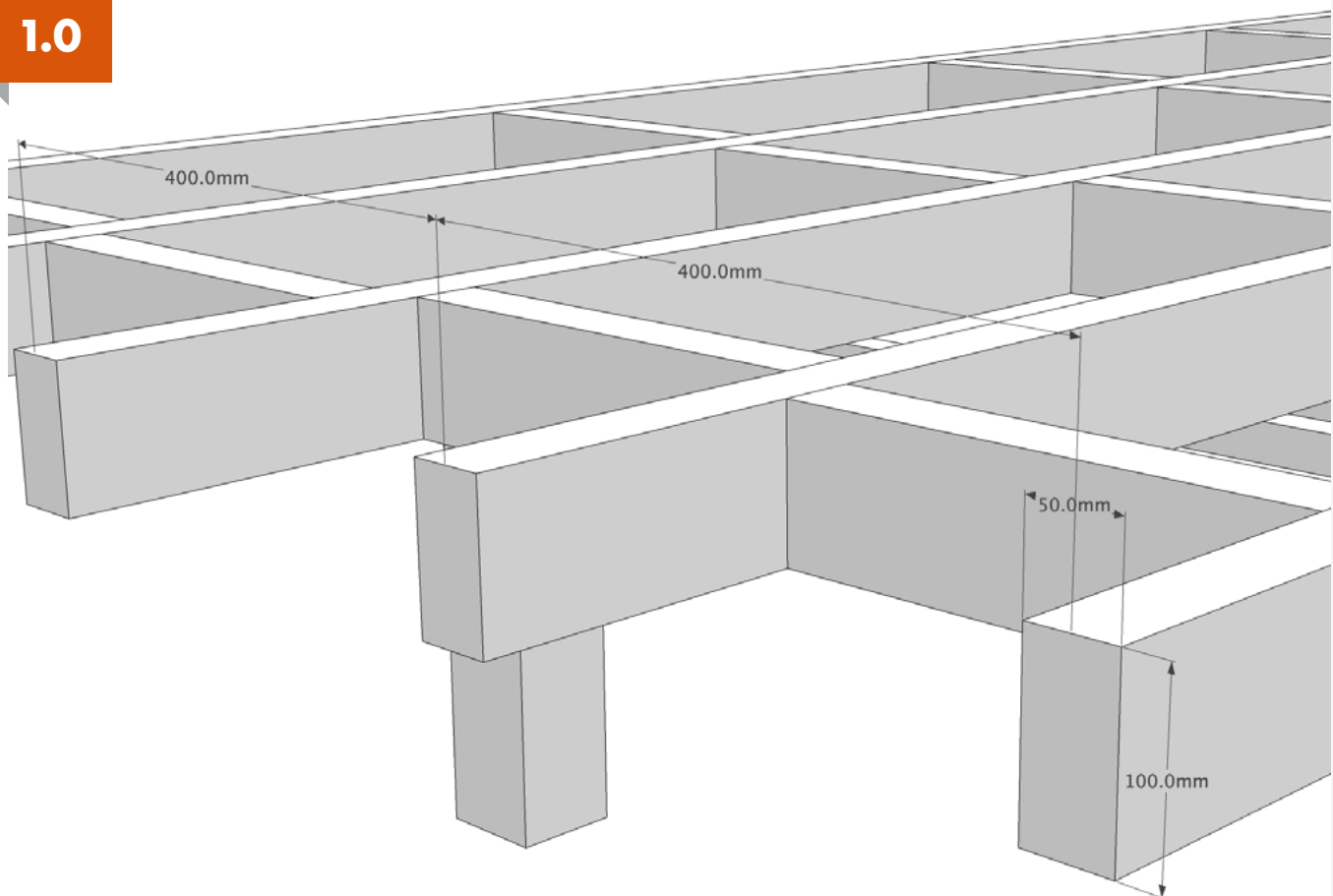
Joists should be fixed to a secure post in a concrete foundation or similar.

Eurocell are unable to accept any liability for the installation of inadequate sub-frames. The contractor should ensure the frame is adequately prepared.

### Joist Specification:

- ▶ Decking can be fixed to pressure treated softwood timber joists (Grade C16 - EN14081 or similar) or composite / aluminium joists depending on design requirements.
- ▶ Joists should be fixed into position at 400mm centres using suitable A4 stainless steel countersunk wood/ masonry screws. All joists need to be fixed in a minimum of 3 places.

1.0



Typical timber sub-frame

## OPTIONAL

### 1. ALUMINIUM OR PLASTIC JOISTS WITH PEDESTAL SYSTEM

Eurocell are also able to offer Aluminium or Solid Plastic sub-frames. These can be fixed to:

▶ Adjustable Pedestals:

- ▶ With solid flat foundations and flat roof areas the decking substructure can be supported with adjustable support pedestals. These are simply placed straight onto flat roofs or hard standing and the height of each is adjusted by rotating the pedestal top. 6-7 no: recommended per m<sup>2</sup> (depending on detailing).

▶ Solid plastic posts (100x100mm), supplied by Eurocell

▶ Concrete blockwork or low walls.

Please contact our technical team for further information.

#### Joist Sizes

Joists are available in the following sizes:

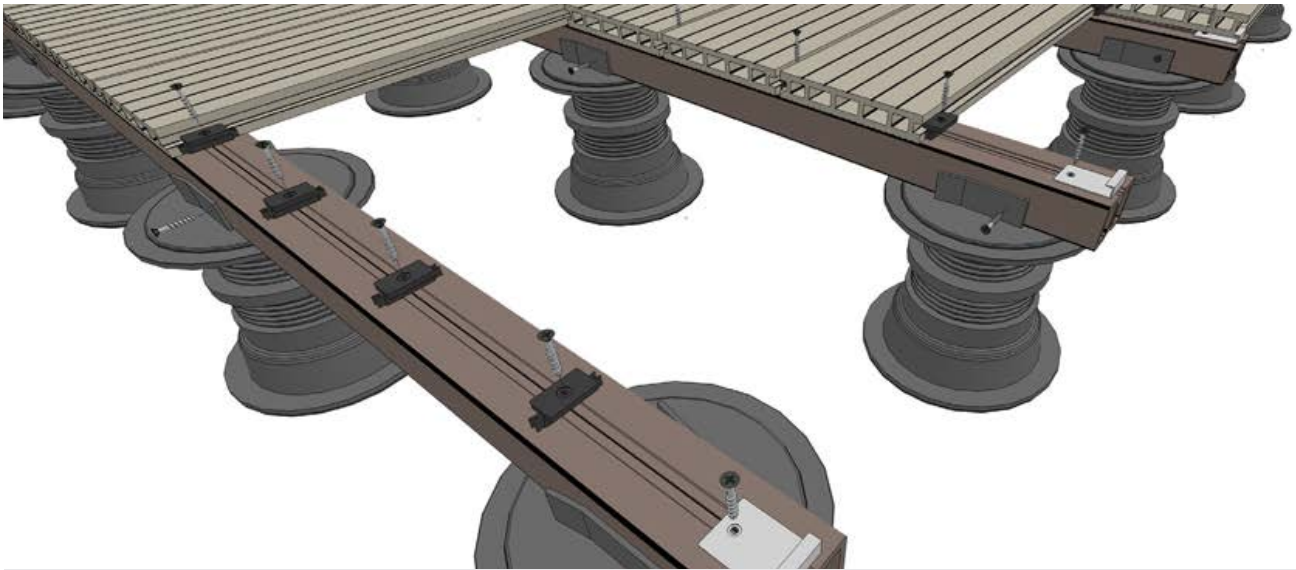
Joist	Span	Centres
Plastic joist 50 x 50 x 2400mm	600mm	400mm
Plastic joist 125 x 50 x 3000mm	1500mm	400mm
Aluminium Joist 40 x 40 x 3600mm	600mm	400mm

### PRE-INSTALLATION INFORMATION

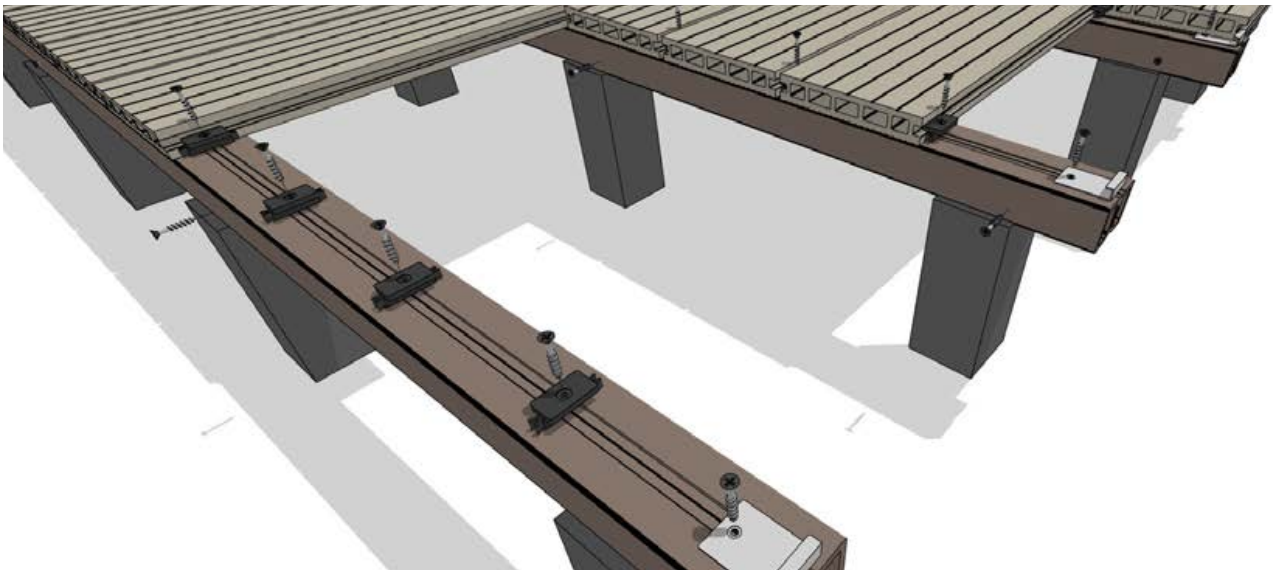


- ▶ Eurocell hold no responsibility for installations that are not carried out to instructions provided or inferior installations.

- ▶ Failure to install in accordance to these instructions will invalidate the Product Guarantee.



Typical aluminium / plastic sub-frame on adjustable pedestals



Typical aluminium / plastic sub-frame on solid plastic post

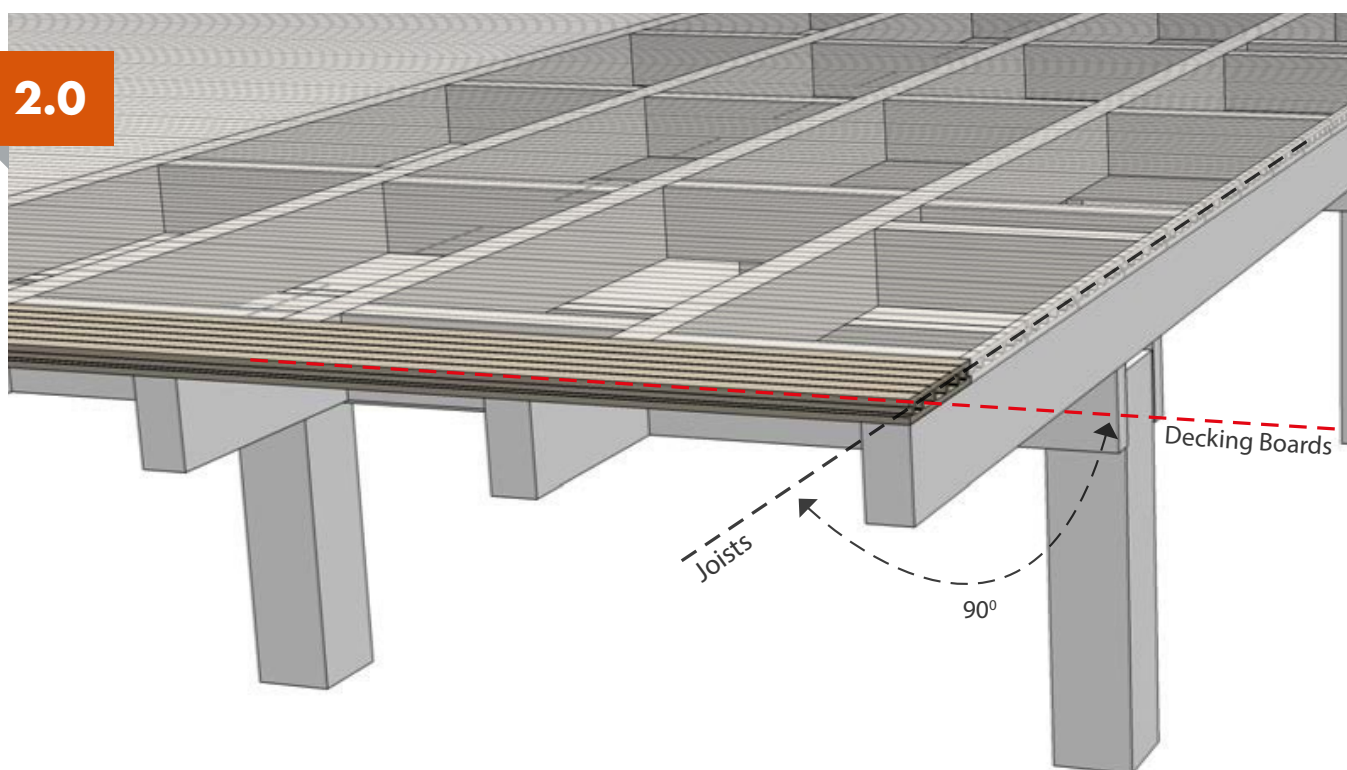
# INSTALLATION

## 2. ORIENTATION OF DECKING BOARDS

We recommend that decking boards are laid perpendicular to the direction of the sub-frame, however other configurations are possible.

Decking boards also function and look best when laid perpendicular to building line / door / viewing point.

There are a wide variety of laying patterns that can be achieved but these are not covered in this manual. Eurocell are able to assist with the design of non standard laying patterns.



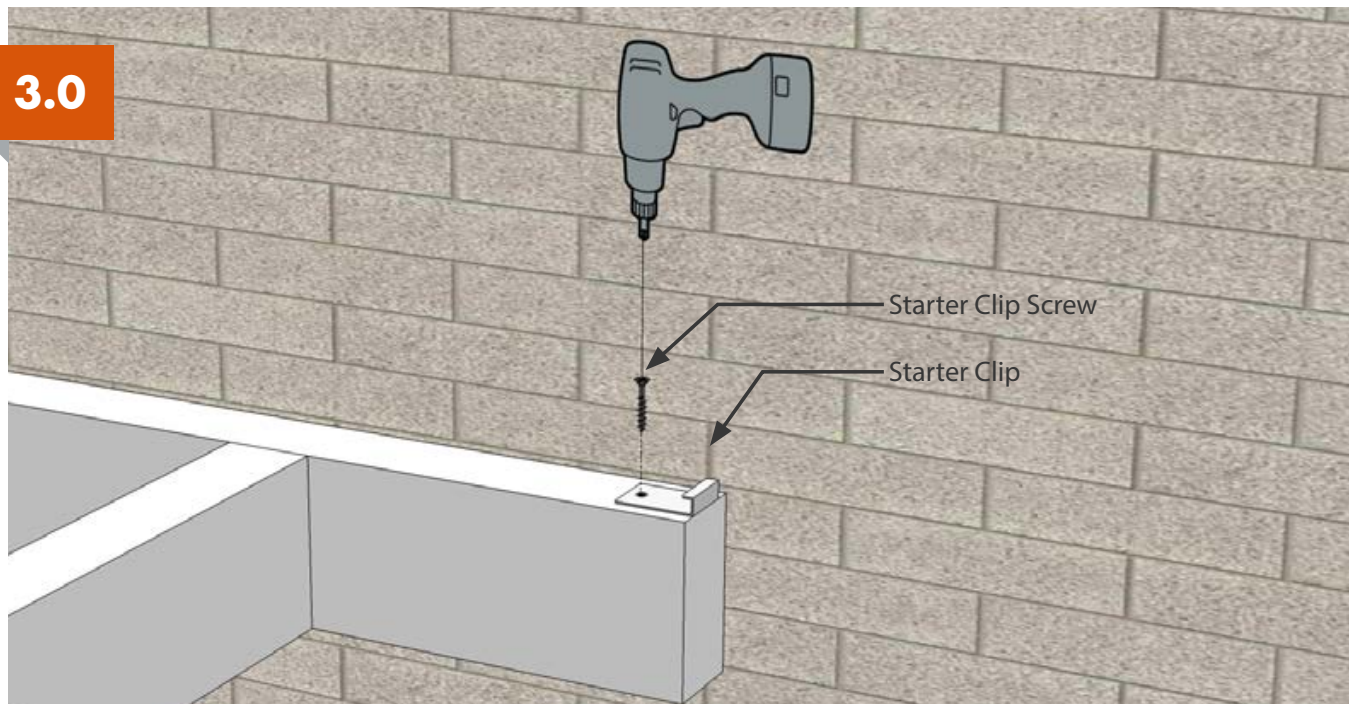
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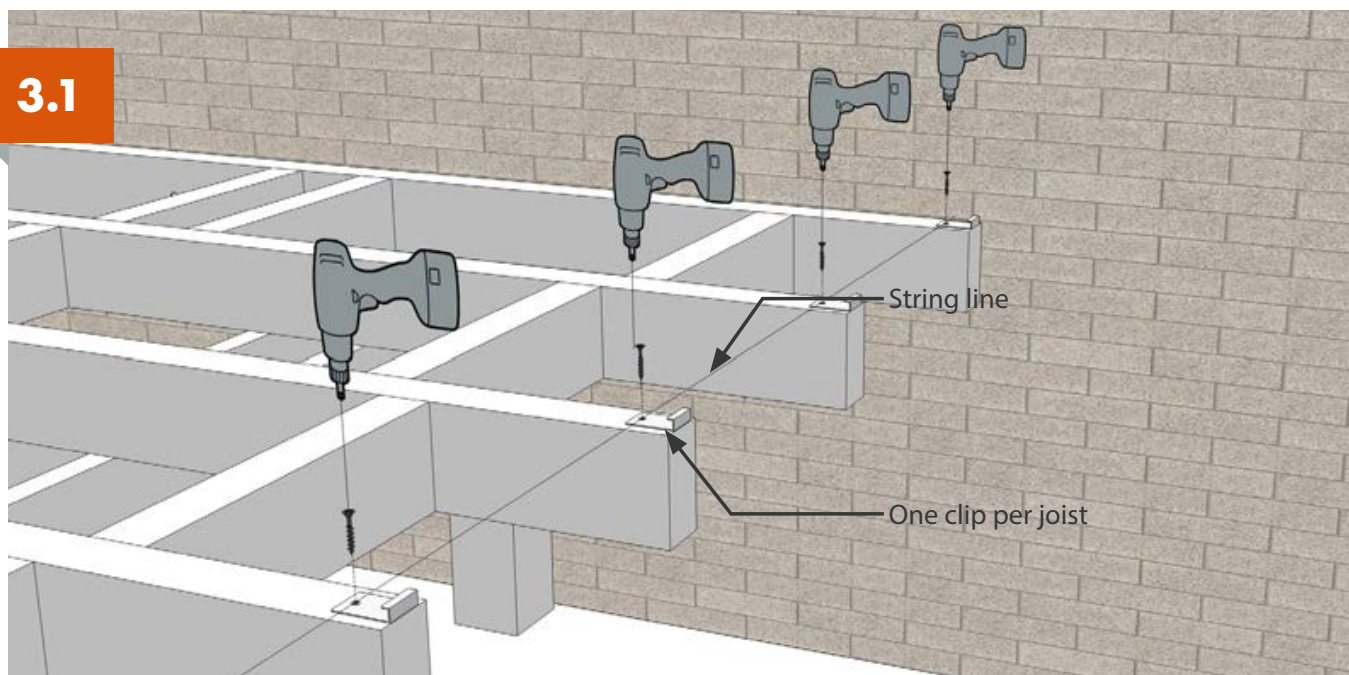
### 3. FIXING THE STARTER CLIPS

3.0



Once you have determined the location and orientation of the first decking board, you are ready to install the first starter clip. Align the clip to the end and centre of the joist, pre-drill, and screw the starter clip in place using the starter clip screw.

3.1

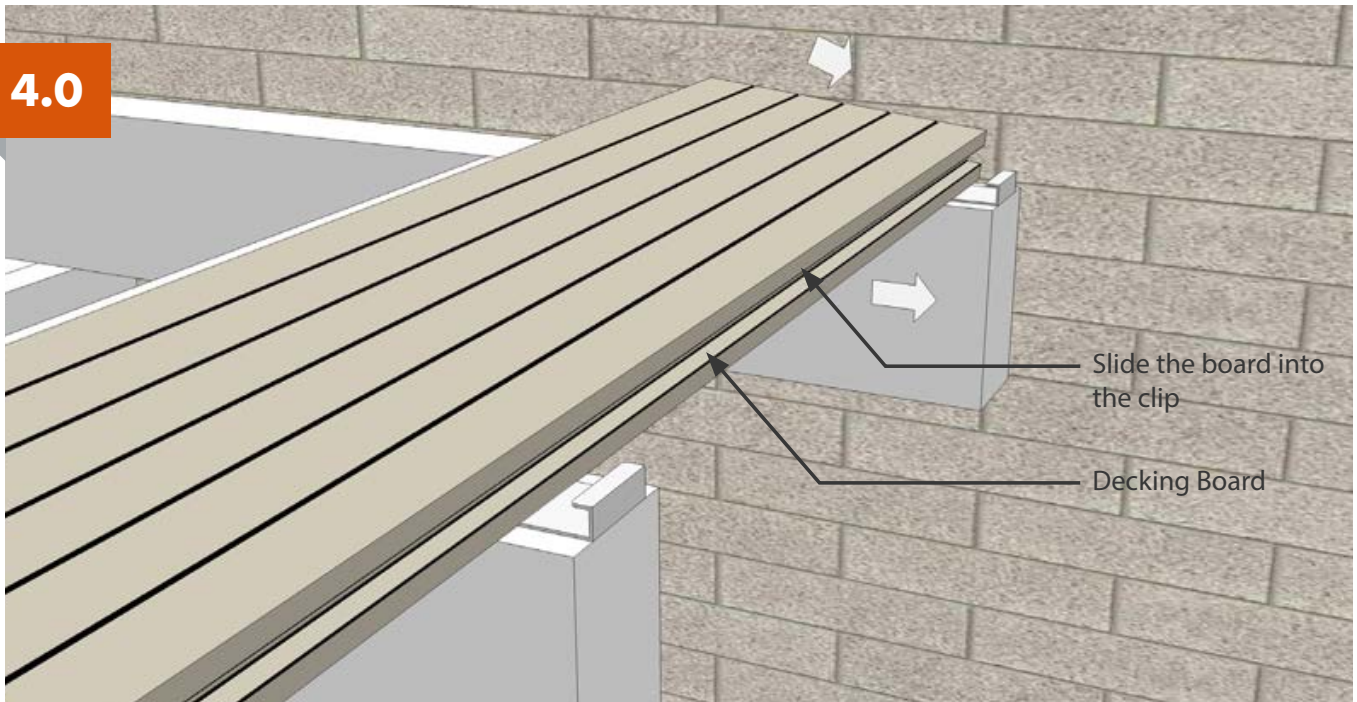


Using a deck board or string line install the remaining starter clips, taking care to ensure they are aligned.



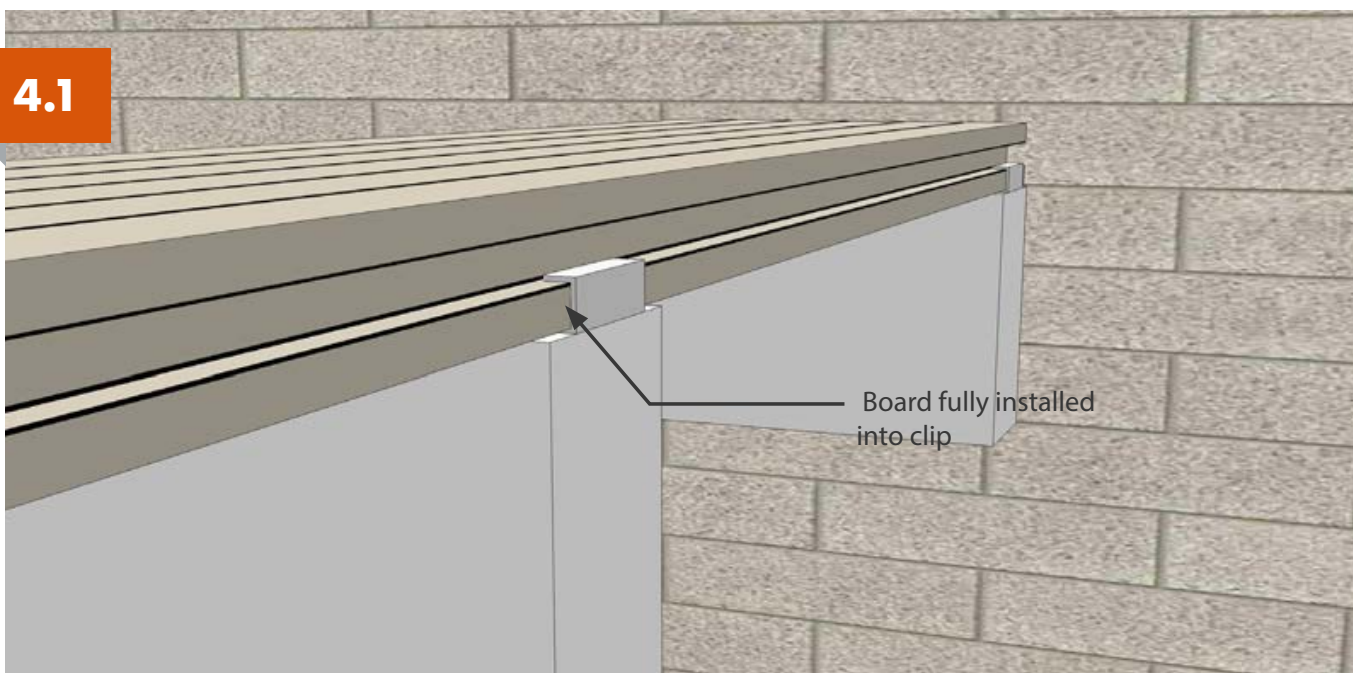
## 4. INSTALL THE FIRST DECKING BOARD

4.0



Take the first board and slide it into the starter clip using the grooves in the side of the board.

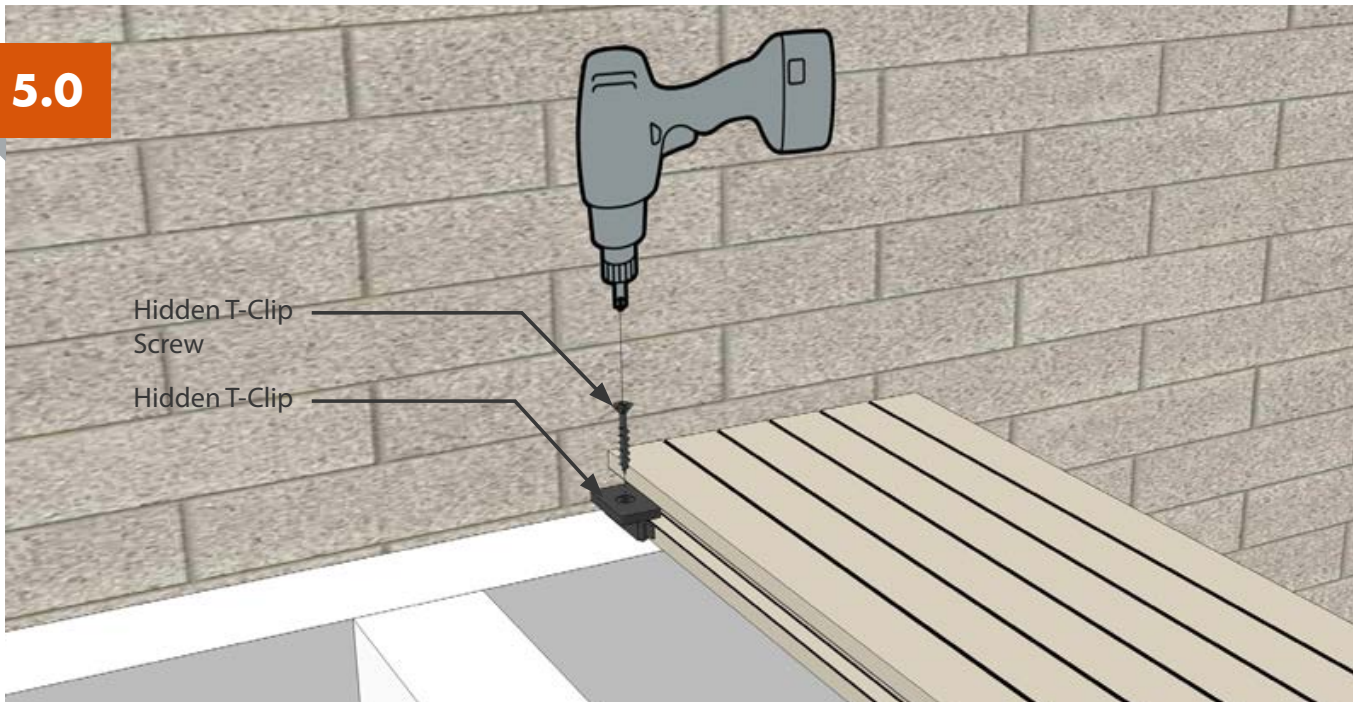
4.1



Ensure the board is fully installed into the clip before proceeding.

## 5. INSTALL THE T-CLIPS

5.0



Using the Hidden T-Clips, Secure one end of the board in place by sliding the T-Clip into the side groove on the decking board and part screwing the T-Clip screw into the joist. Do not fully screw the T-Clip in place.

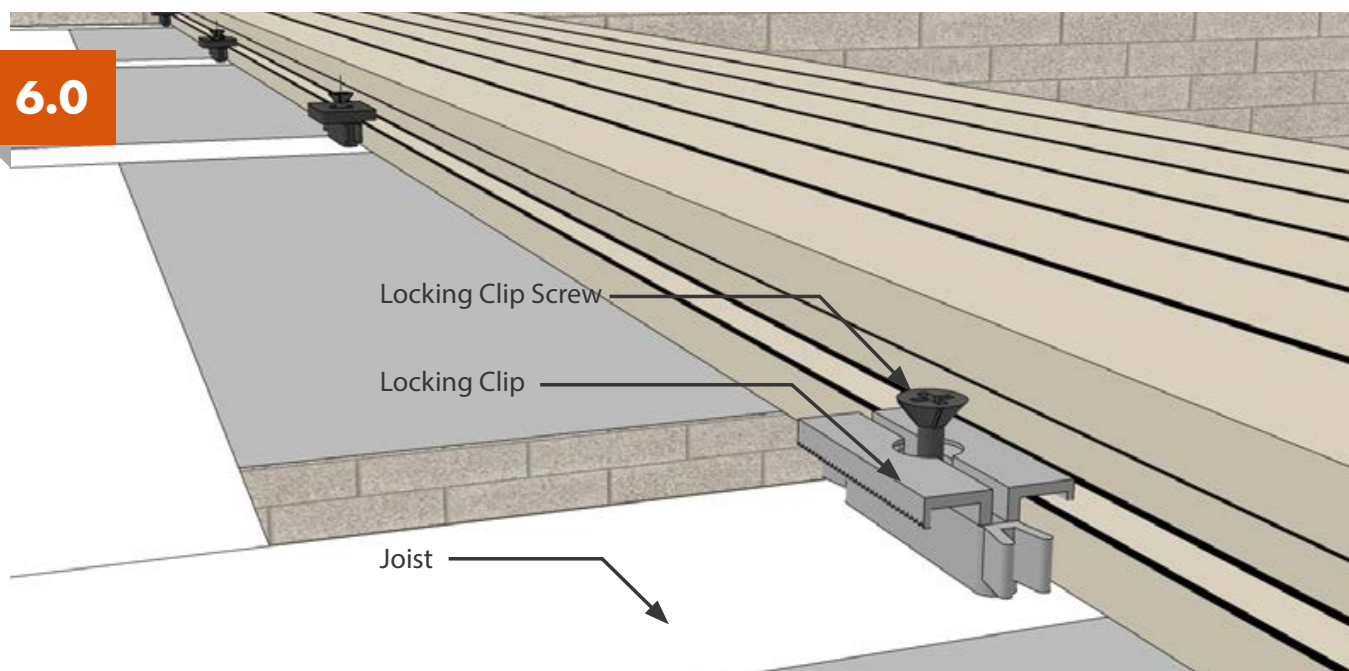
5.1



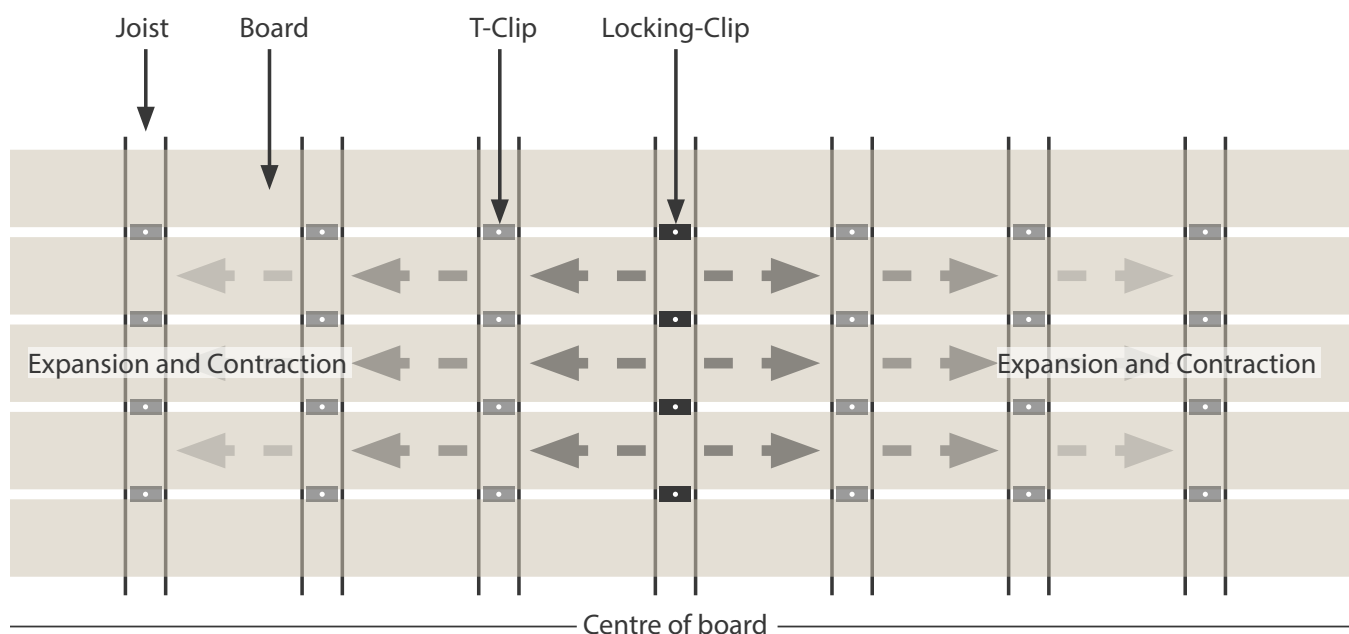
Install the remaining T-Clips part way as above. One T-Clip should be installed per joist.

## 6. INSTALL THE LOCKING CLIP

6.0



**Locking clip - plan view**



Eurocell also offer a Locking clip. This is a similar profile to the T-Clip but with serrated teeth which lock the board in place. This ensures even expansion or contraction during hot or cold weather.

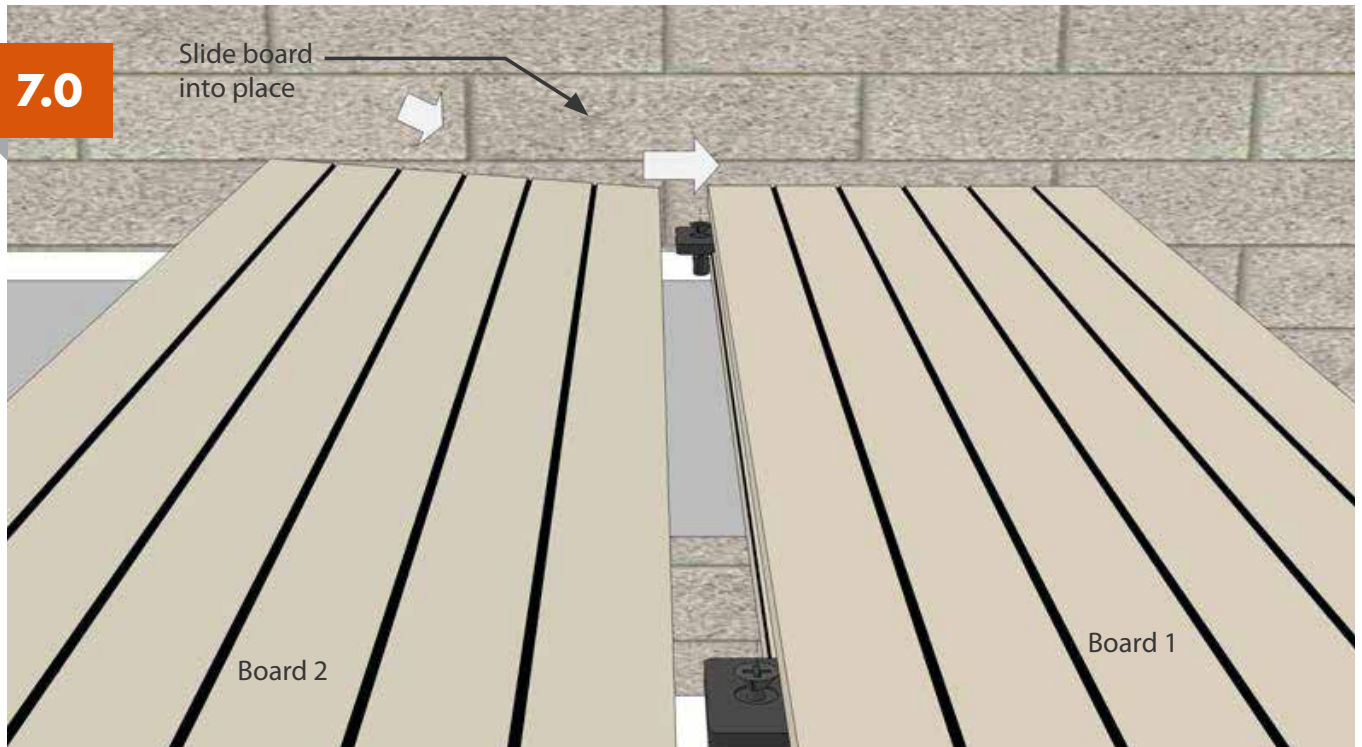
One Locking clip can be placed to the centre of each board where it hits the sub-frame. This will allow for the even expansion and contraction across the board length as shown in the diagram adjacent.



## 7. INSTALL THE SECOND DECKING BOARD

7.0

Slide board  
into place



Take the second decking board and slide into the T-Clip fixings.

7.1

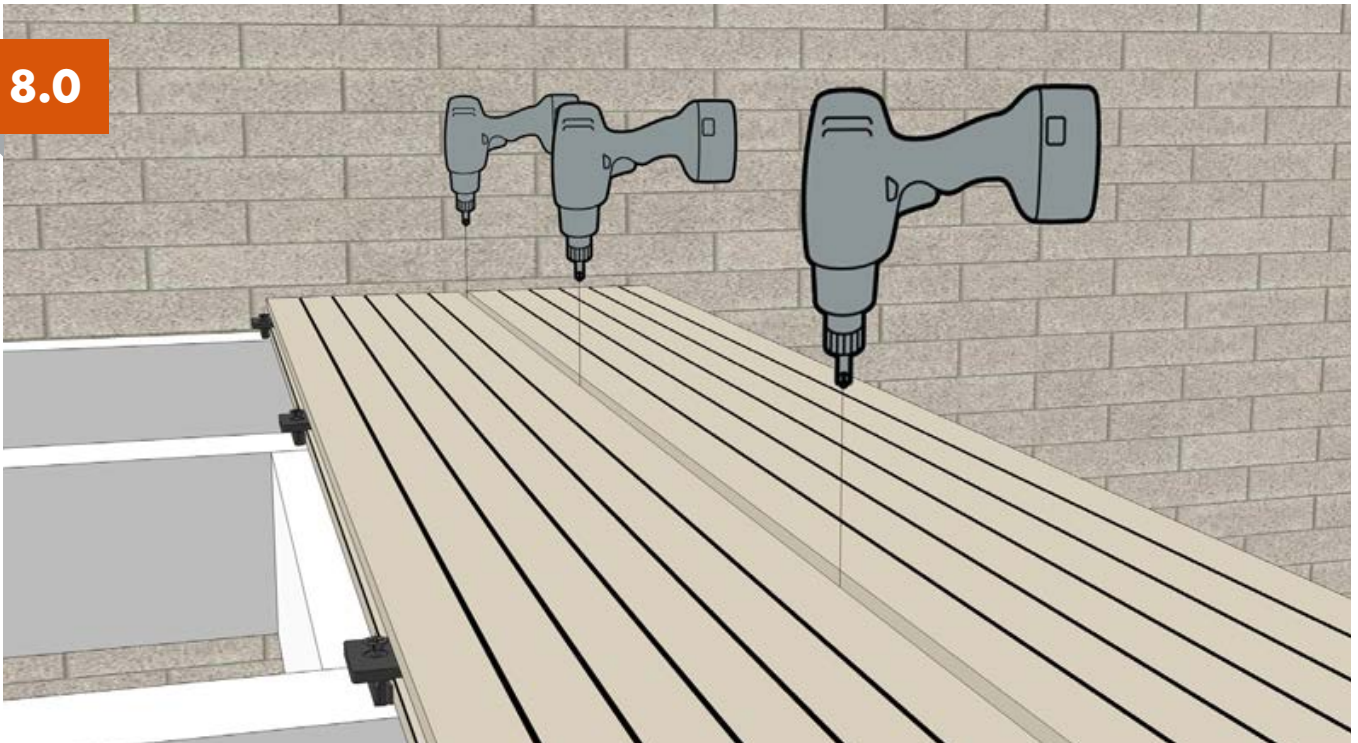
Install next row of  
T-Clips part way



Install the next row of T-Clips to board 2 as described in step 5.

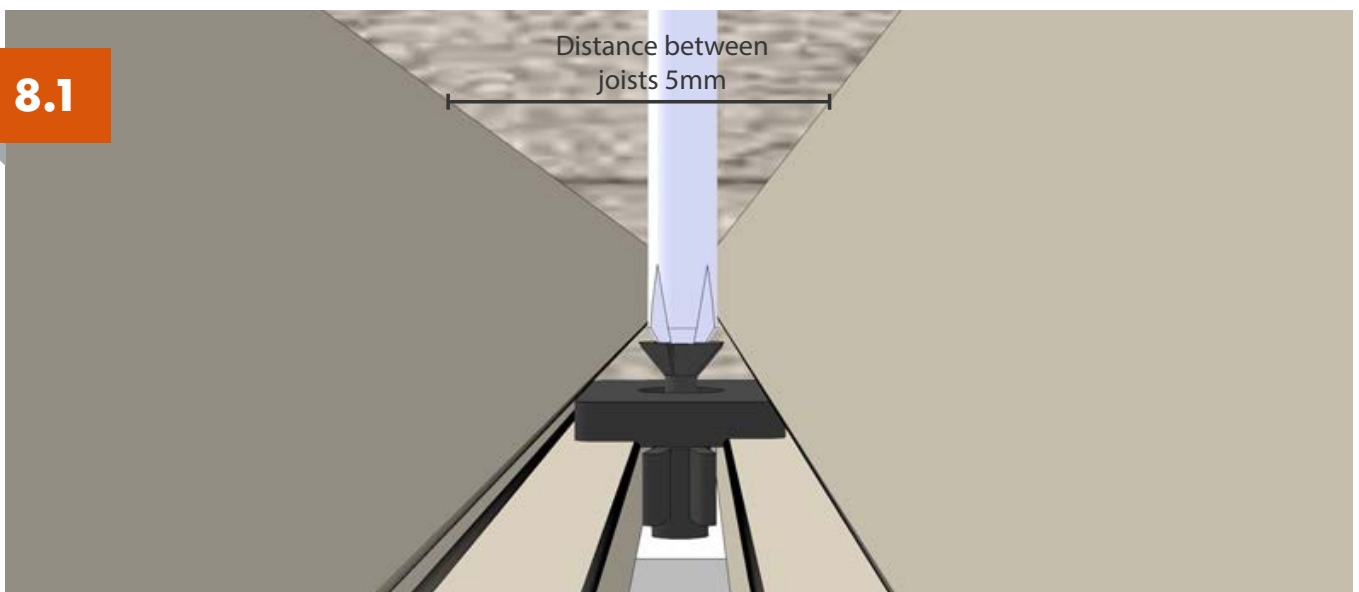
## 8. FULLY SECURE FIRST SET OF T-CLIPS

8.0



Once the second board is in place you are ready to fully secure the first line of T-Clips in place.

8.1



When Installing the T-Clips Take care to use a screw bit of a suitable width to avoid damage to the boards.

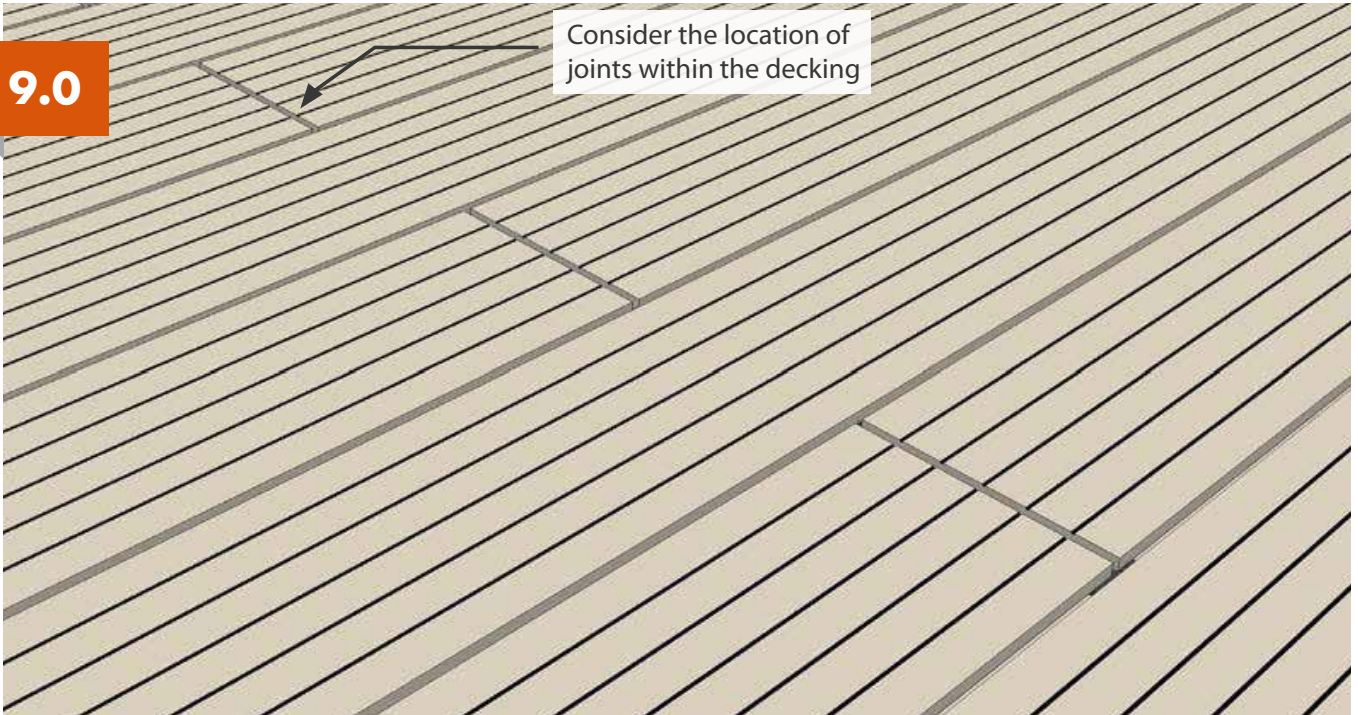
Note - Eurocell supply the T-Clips with a dedicated screw drill bit. If you are using a drill to install the boards, please ensure you use this. Also take care to ensure the drill chuck does not come in contact with the boards as this may cause damage.



## 9. INSTALL THE REMAINING BOARDS

9.0

Consider the location of joints within the decking



Repeat steps 5 to 8 and install the remaining area of decking. If the decked area requires end joints to boards, plan where you want the joints to be visible. Joints should be made over a double joist as shown in step 9.0.

9.1



Install the remaining boards.

## 10. INSTALLING BOARDS END TO END

### 10.0



Where a decking board is to be laid end-to-end with another, a 2/3mm gap is to be left between the boards (Gap depends on temperature at time of install - please refer to table, page 32).

Please note - As a product that contains both timber and wood, composite decking is subject to movement with temperature change. The movement is 1mm per 10° C in temperature change of the product, not air temperature. In direct sunlight, darker composites will reach higher temperatures than lighter colours.

Please take into consideration the boards temperature when laying. If particularly warm these may need tighter gaps during install.

The boards should be supported by sub-frame joists, positioned 20mm apart as shown on the adjacent image. This allows the ends of the decking boards to be supported, whilst also allowing water to drain freely between the ends of the boards and prevent standing water.

\*\*\* Please refer to the table on page 32 when installing the deck boards to determine the gap (mm) between boards and adjacent structures.

## 11. INSTALLING BREAKER BOARDS

11.0

Breaker  
Board



Sometimes you may want to install Breaker Boards or create a Picture Frame as shown in Image 10. These can be very effective in breaking up the deck area.

These can be fitted either by;

- ▶ Cutting down T-Clips - Refer to step 12, or;
- ▶ Using Starter clips - refer to Step 13

### PRE-INSTALLATION INFORMATION



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- ▶ Failure to install in accordance to these instructions will invalidate the Product Guarantee.

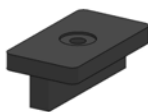


## 12. INSTALL BREAKER BOARDS - USING T-CLIPS

To install a breaker board using the T-Clips simply cut one side of the T-Clip off so the end of the adjoining board can sit tight.

**Cutting the T-Clip**

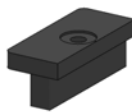
12.0



1)

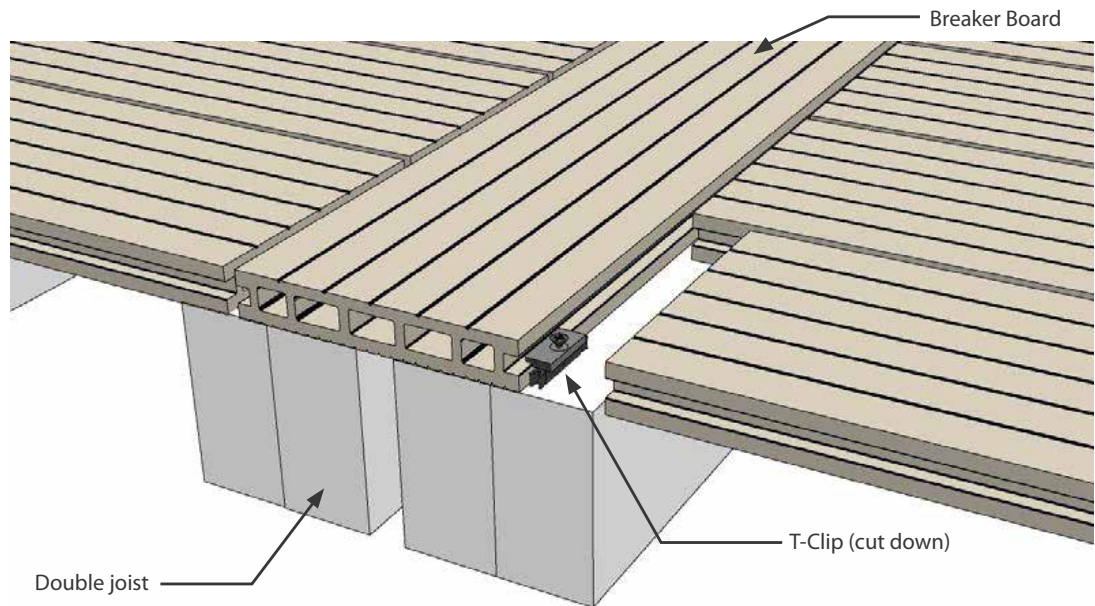


2)

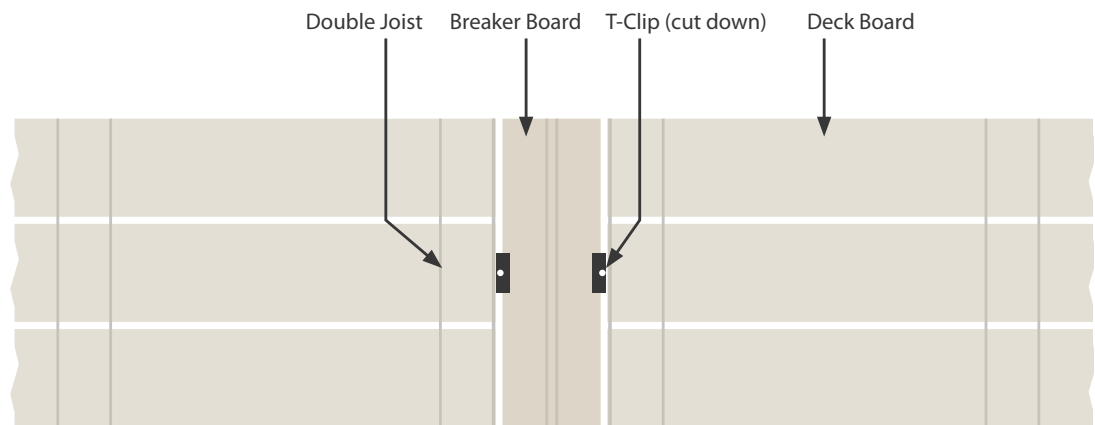


3)

Note - Breaker boards should be fitted with a double joist support as illustrated in the adjacent images. This will ensure sufficient support to both the breaker board and the adjoining board end.



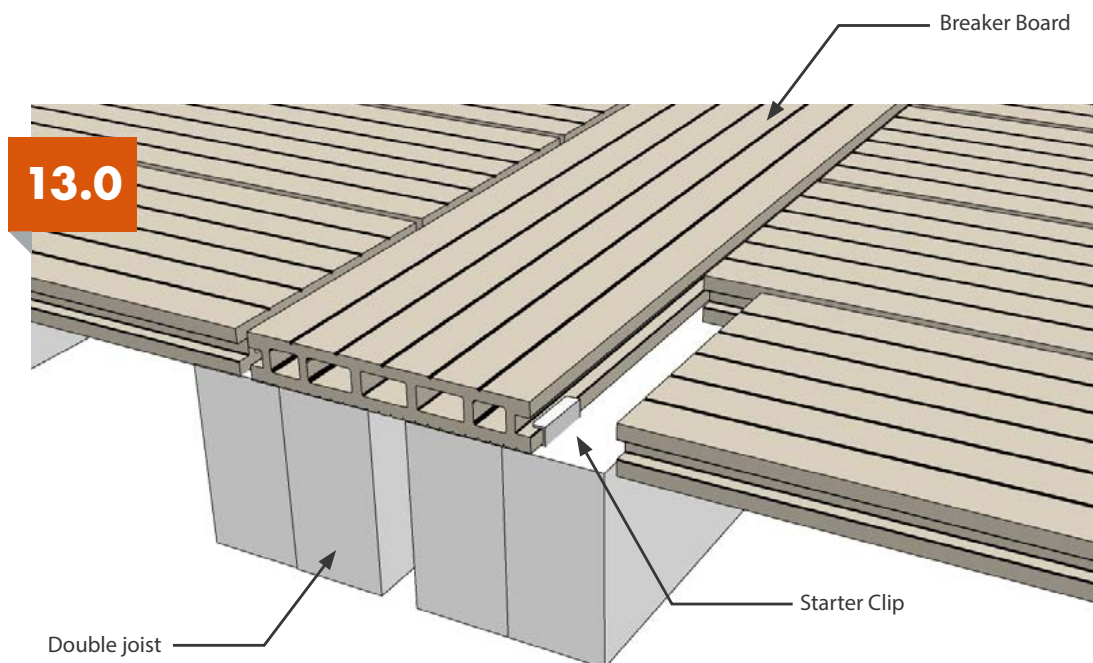
Breaker Board - T-Clip - Plan View



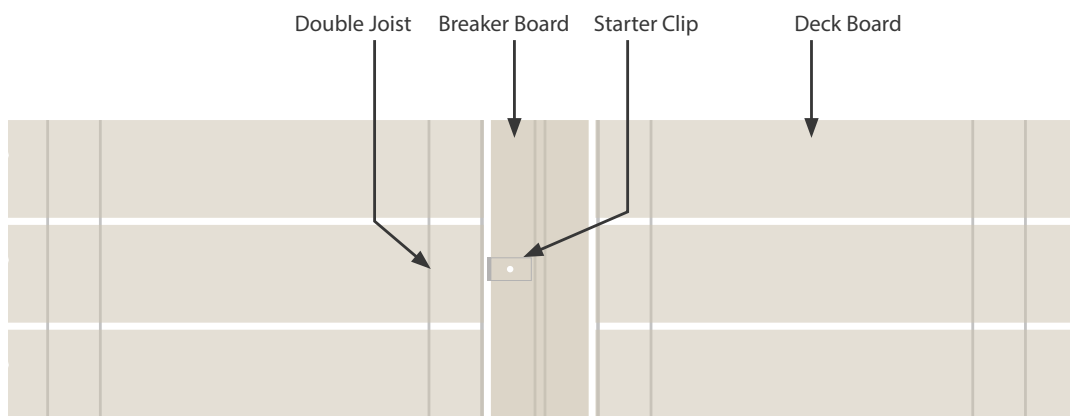
## 13. INSTALL BREAKER BOARDS - USING STARTER CLIPS

To install a breaker board using the Starter Clips install the starter clips as per step 2 and 3.

Note - Breaker boards should be fitted with a double joist support as illustrated in the images below. This will ensure sufficient support to both the breaker board and the adjoining board end.



Breaker Board - Starter Clip - Plan View

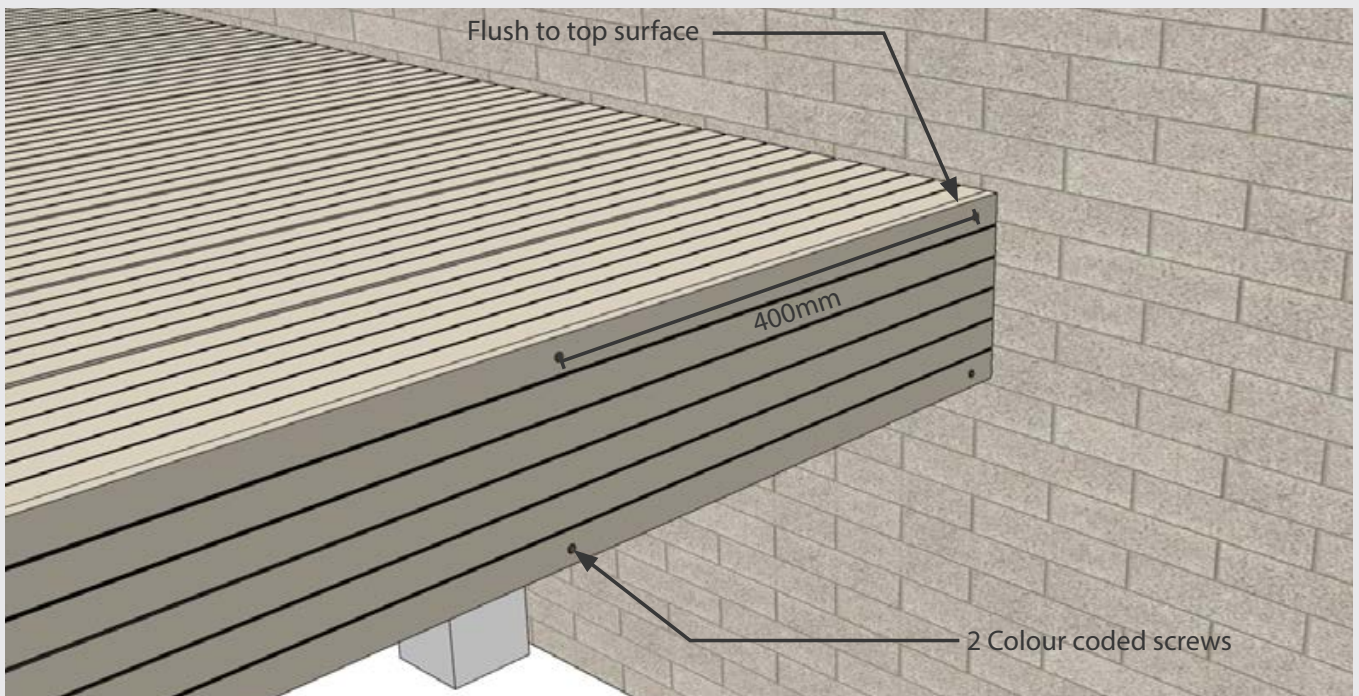
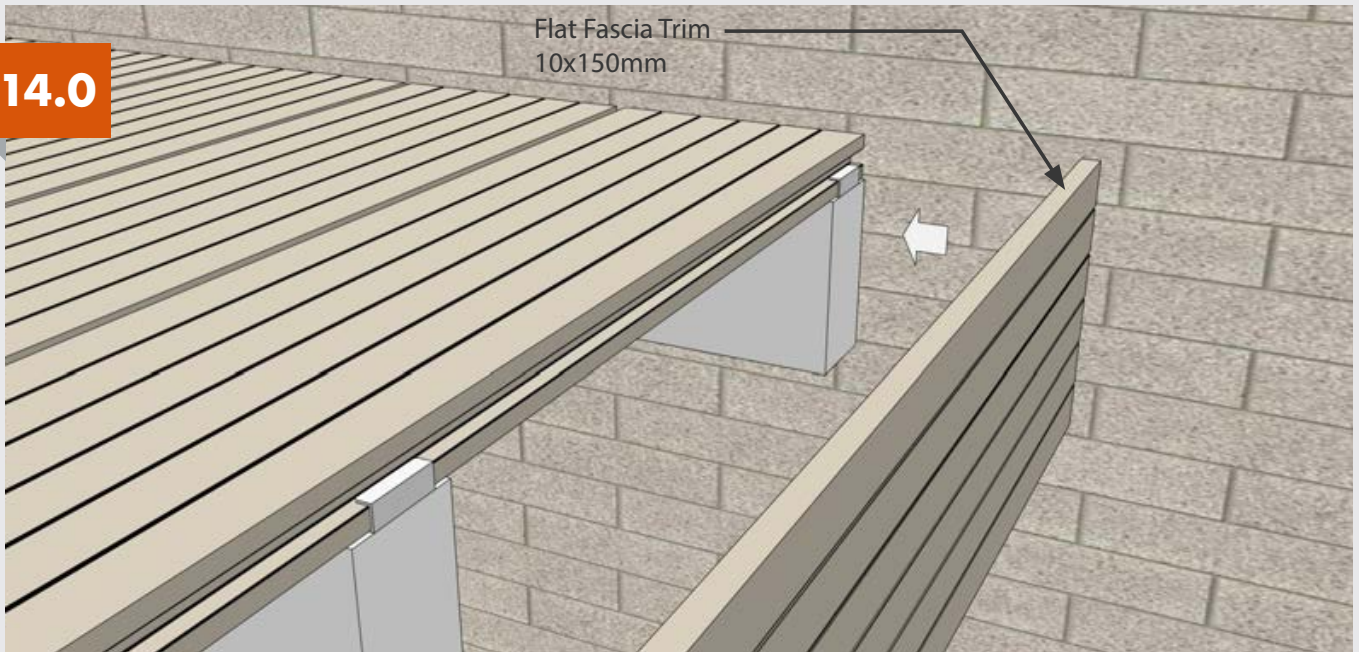




## OPTIONAL

### 14. (FINISHING THE DECK) OPTION 1 - 10X150MM FASCIA BOARD

14.0



Once the main boards have been installed the fascia trim can be attached to create a clean edge.

Align the first Trim with the top edge of the decking and fix into the joists using the colour coded screws. 2 screws per joist (every 400mm).

Screws should be pre-drilled and counter sunk for the perfect finish and to stop cracking. (Cont. Next page).

## 15. (FINISHING THE DECK) OPTION 1 - 10X150MM FASCIA BOARD

### 15.1



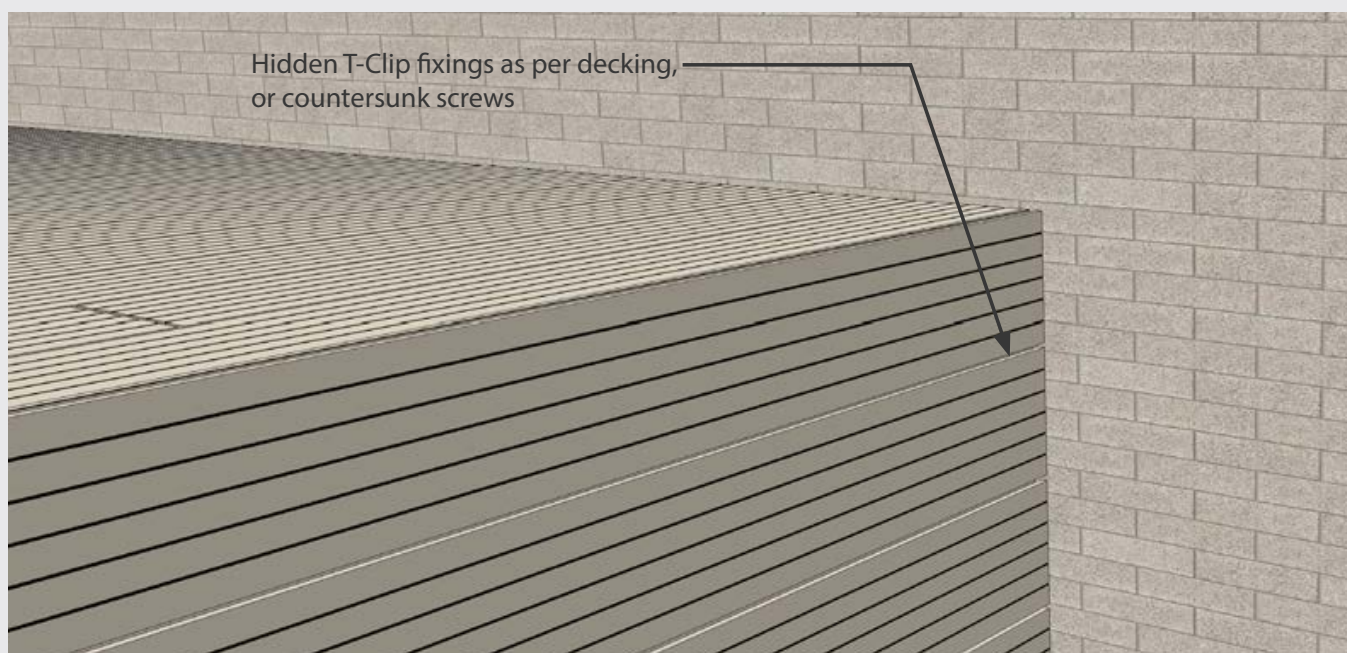
Use the flat fascia boards to finish the sides of the decking as required.



## OPTIONAL

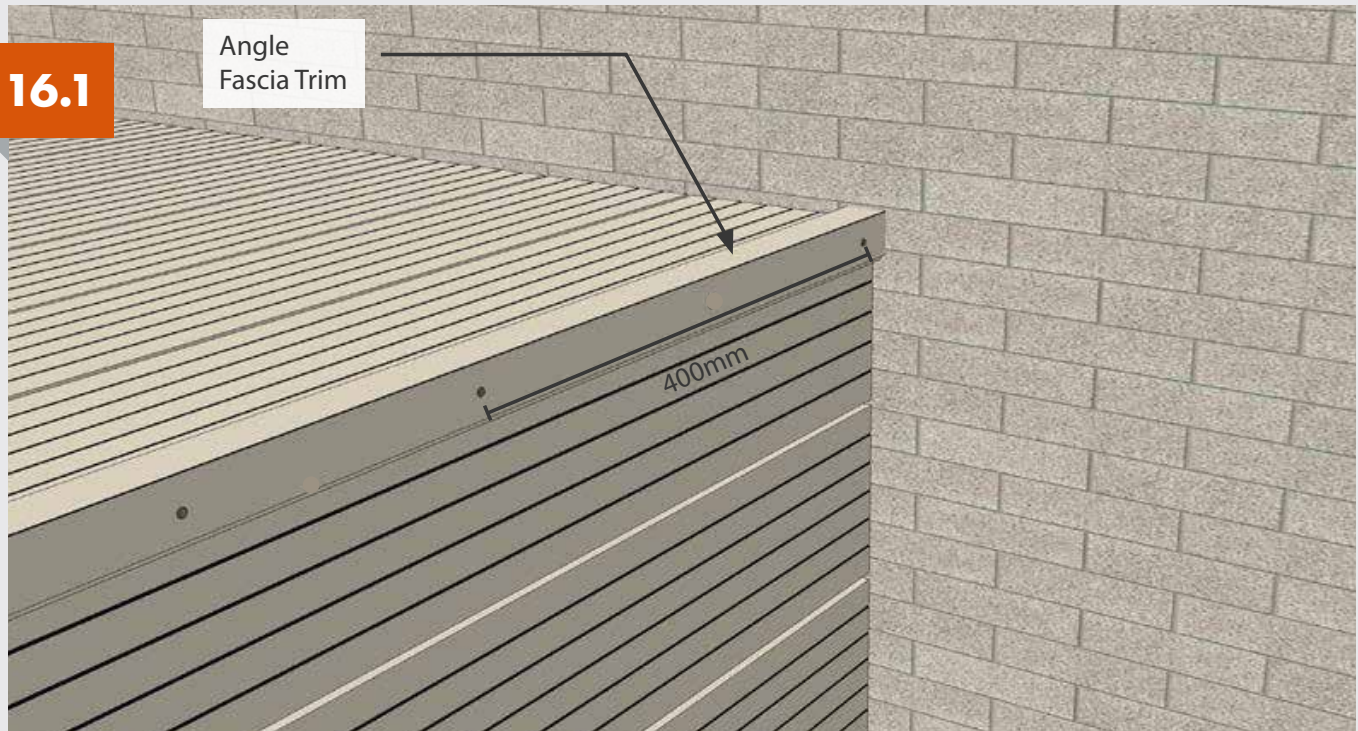
### 16. (FINISHING THE DECK) OPTION 2 - ANGLE TRIM

16.0



An alternative method to finishing the decking is to utilise additional decking boards to clad the face of the decked area. The boards should be installed in a similar manner to the decking, however countersunk screws can be used rather than Hidden T-Clip fixings if the face of the decking isn't going to be in view. (Cont. next page).

## (FINISHING THE DECK) OPTION 2 - ANGLE TRIM



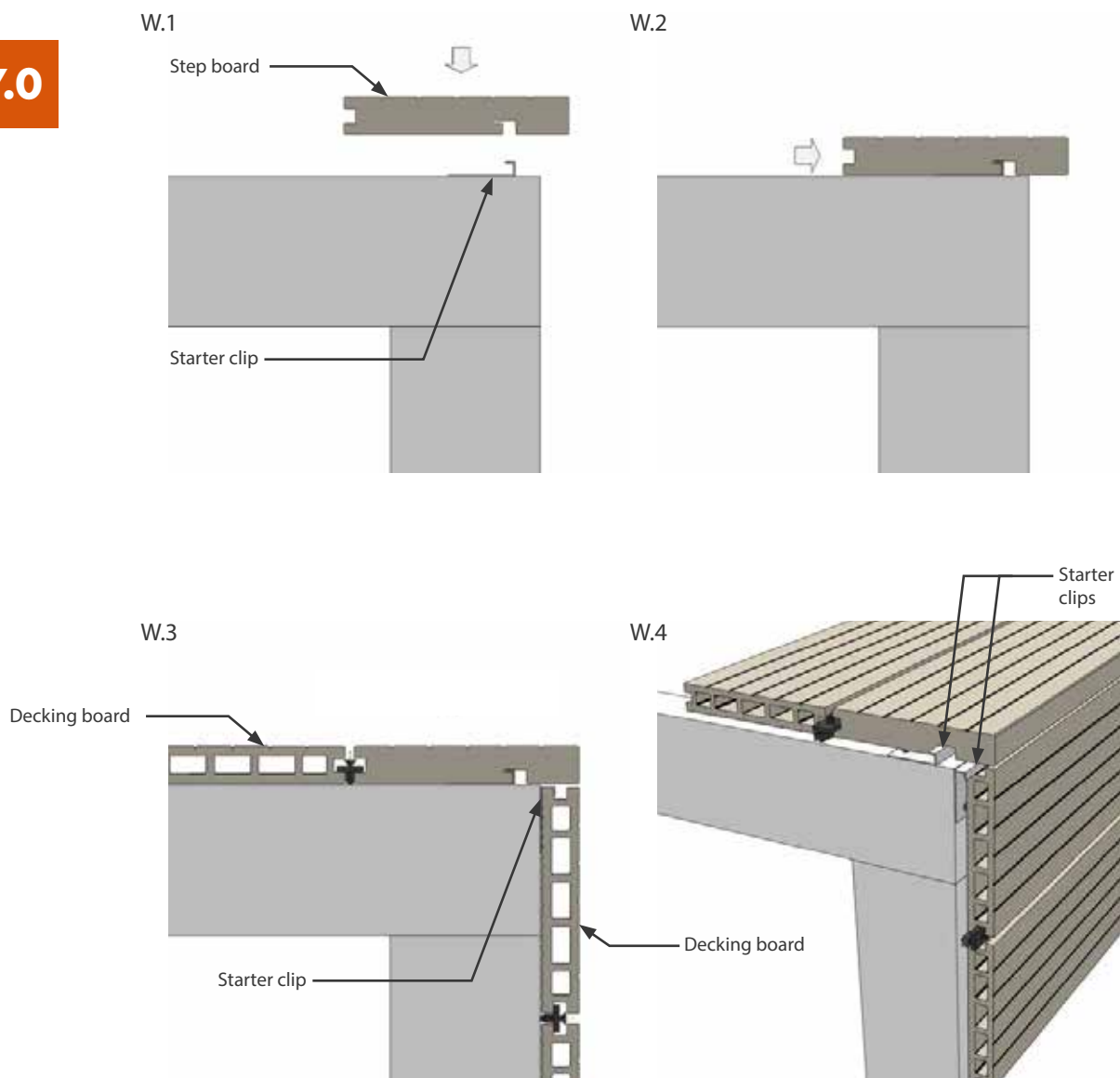
Once the decking boards have been installed to the face, the Angle Fascia Trim accessory can be pinned to the top edge of the decking using colour coded screws or poly pins, creating a smooth join.

1 screws or pins per joist (every 400mm). Screws should be pre drilled and counter sunk for the perfect finish and to stop cracking.

## OPTIONAL

### (FINISHING THE DECK) OPTION 3 - STEP BOARD FLUSH

17.0



A third method is to finish the decking utilising the step board to top edge - This method achieves a seamless finish with no fixings on show.

\*\*\*If this method is chosen, it is best to begin the decking process with the finishing boards to achieve a flush finish\*\*\*

W.1 - Fix the starter fixings into the frame. Note that this will determine how much the board over hangs the edge of the deck.  
Align the step board and push down over the starter clip.

W.2 - Push the step board forwards so it slides into the starter clip.

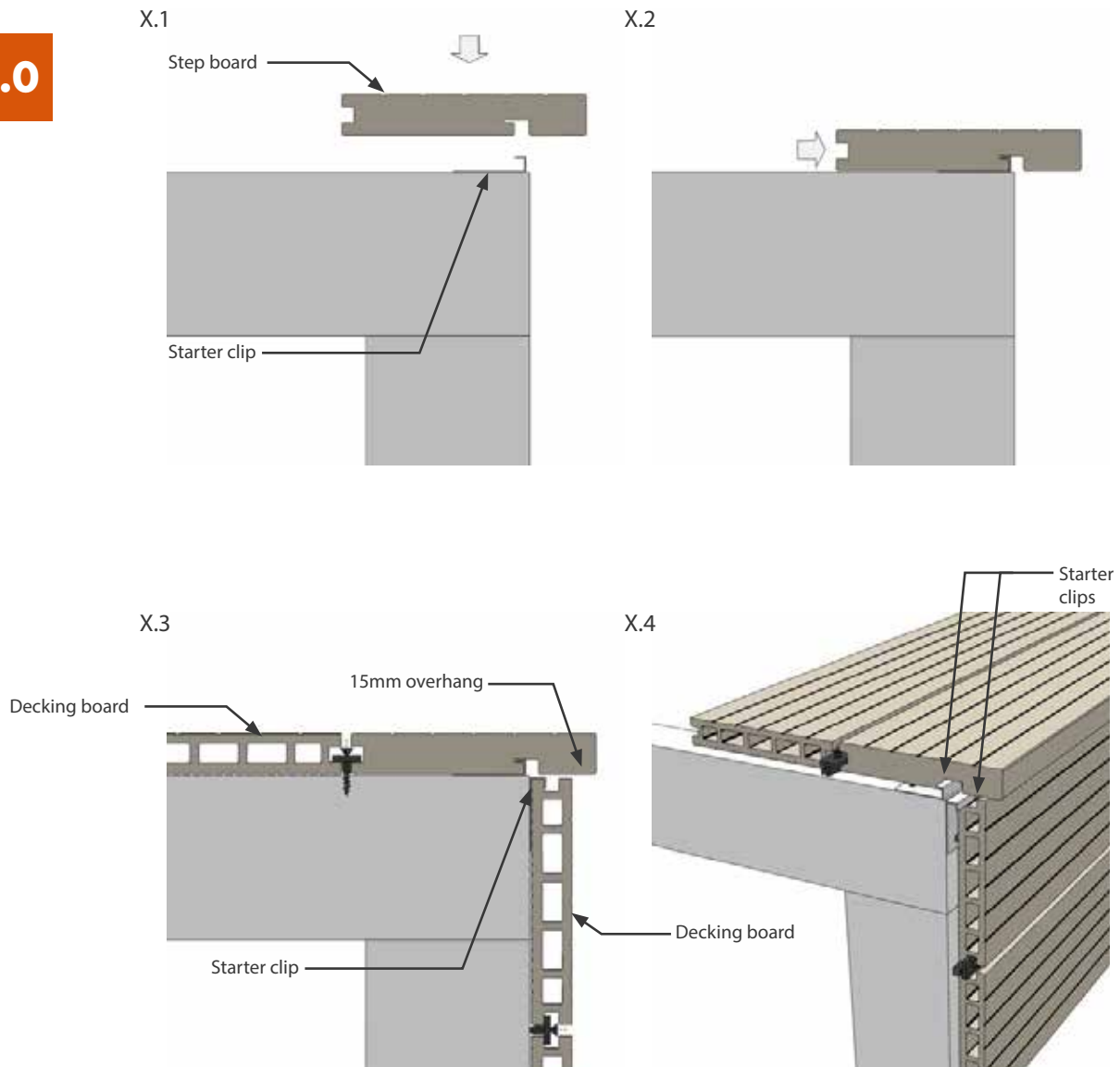
W.3 and W.4 - Fix the adjoining decking boards to the deck and fascia using the T-Clips, Starter and Locking clips as required.

Continue with the rest of the decking.



## 18. (FINISHING THE DECK) OPTION 4 - STEP BOARD 15MM OVERHANG

18.0



Alternatively, you can install a step board as per option 3, but with a small over hang to the top edge. This is particularly effective when using the step board on steps.

\*\*\*If this method is chosen, it is best to begin the decking process with the finishing boards to achieve the correct overhang to the edge\*\*\*

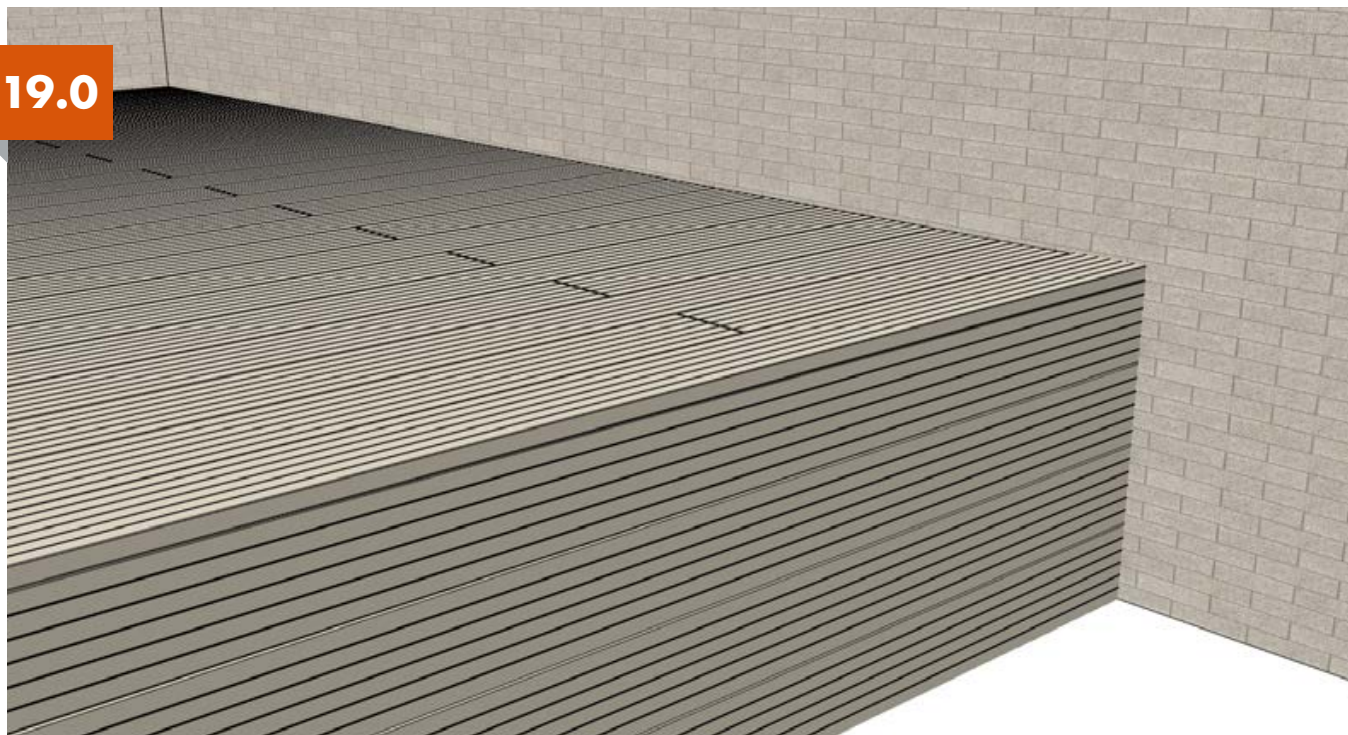
X.1 - Fix the starter fixings into the frame. Note that this will determine how much the board over hangs the edge of the deck.  
Align the step board and push down over the starter clip.

X.2 - Push the step board forwards so it slides into the starter clip.

X.3 and X.4 - Fix the adjoining decking boards to the deck and fascia using the T-Clips, Starter and Locking clips as required.

## INSTALL REMAINING BOARDS

19.0



Once all the boards are installed the jointing should be seamless.

### PRE-INSTALLATION INFORMATION



- ▶ Eurocell hold no responsibility for installations that are not carried out to instructions provided or inferior installations.
- ▶ Failure to install in accordance to these instructions will invalidate the Product Guarantee.





# CLEANING AND CARE

- ▶ Eurocell decking boards will require periodic maintenance to remove the build up of dirt and debris. We recommend the decking is cleaned once or twice a year using either:
  - ▶ A high pressure cleaner (Jet wash) with a fan shaped beam at a distance of at least 20cm in a lengthwise direction, or;
  - ▶ Scrubbing brush with a all-purpose cleaner and water
- ▶ Burn marks, from BBQ's or similar can also be removed using a course piece of sandpaper (80gsm or similar), by rubbing the deck length-ways gently

# EXPANSION GAP TABLE

Please refer to the table below when installing the deck boards to determine the gap (mm) between boards and adjacent structures.

Please note this table covers expansion and contraction values for UK, Europe.

## Length (Metres)

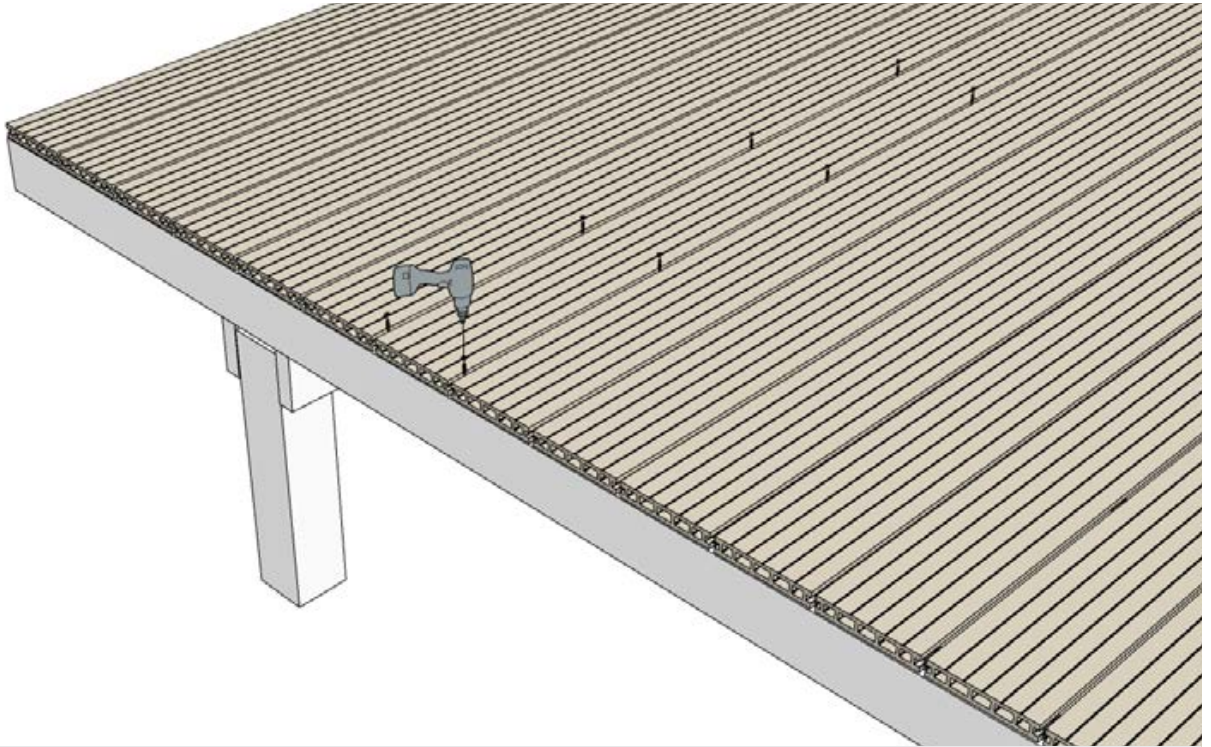
Installation Temperature (°C)	Length (Metres)										Gap (mm)
		1	2.44	2.8	3	3.66	3.9	4	4.88	5.4	
	-10	2.4	5.9	6.7	7.2	8.8	9.4	9.6	11.7	13.0	
	-5	2.2	5.4	6.2	6.6	8.1	8.6	8.8	10.7	11.9	
	0	2.0	4.9	5.6	6.0	7.3	7.8	8.0	9.8	10.8	
	5	1.8	4.4	5.0	5.4	6.6	7.0	7.2	8.8	9.7	
	10	1.6	3.9	4.5	4.8	5.9	6.2	6.4	7.8	8.6	
	15	1.4	3.4	3.9	4.2	5.1	5.5	5.6	6.8	7.6	
	20	1.2	2.9	3.4	3.6	4.4	4.7	4.8	5.9	6.5	
	25	1.0	2.4	2.8	3.0	3.7	3.9	4.0	4.9	5.4	
	30	0.8	2.0	2.2	2.4	2.9	3.1	3.2	3.9	4.3	
	35	0.6	1.5	1.7	1.8	2.2	2.3	2.4	2.9	3.2	
	40	0.4	1.0	1.1	1.2	1.5	1.6	1.6	2.0	2.2	



# REMOVING A BOARD

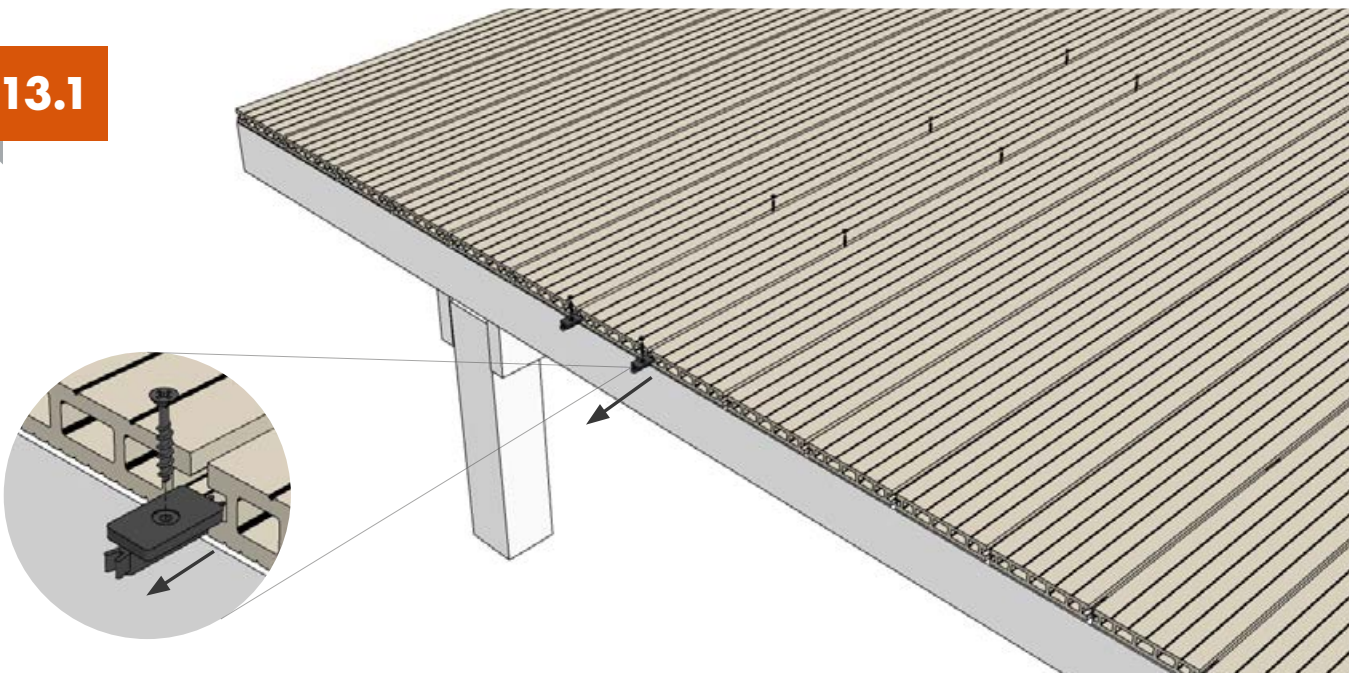
## DECKING BOARD

13.0



Start by unscrewing all the T-Clips that attach the board on both sides.

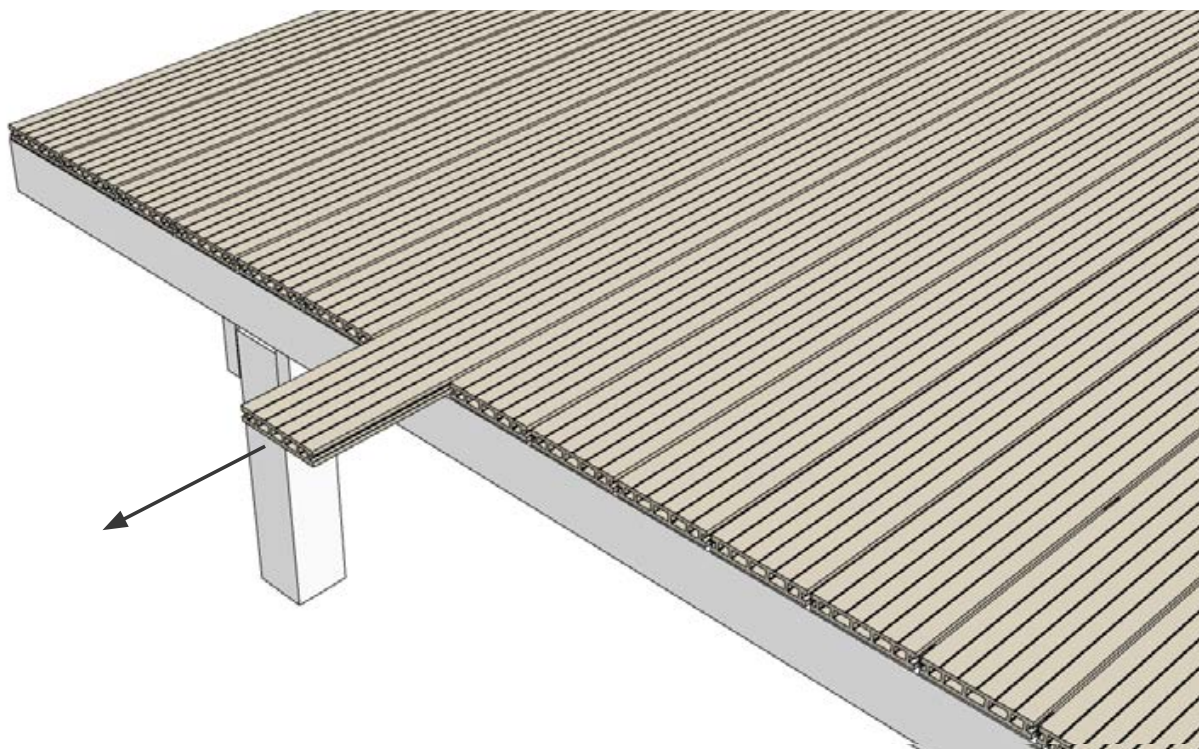
13.1



Then slide all the T-Clips out of the board.

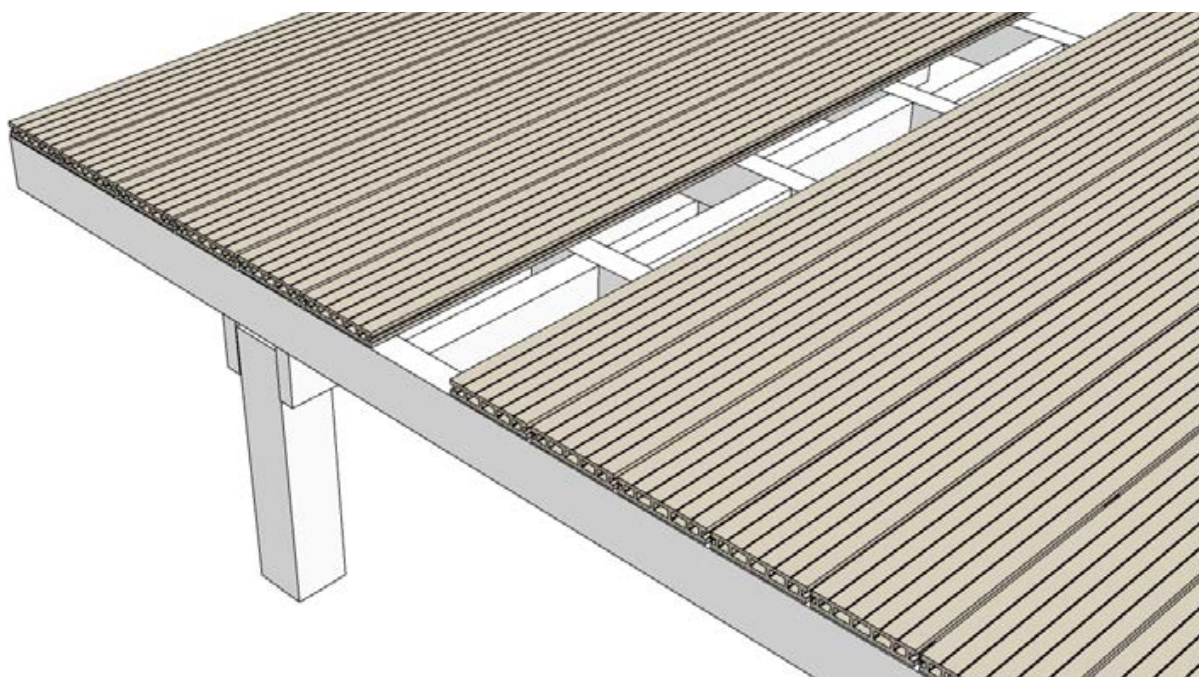


**13.2**



Slide out the decking board.

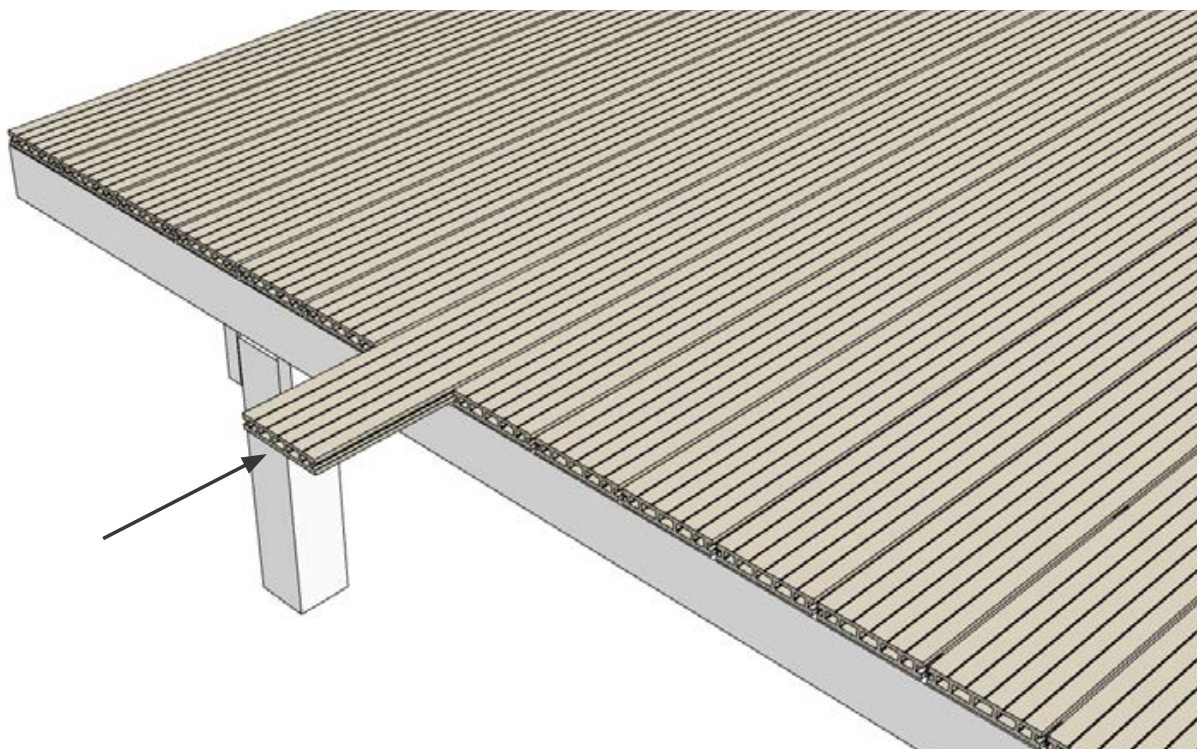
**13.3**



The new board can now be inserted. Take the opportunity to check the sub frame for any damage / wear.

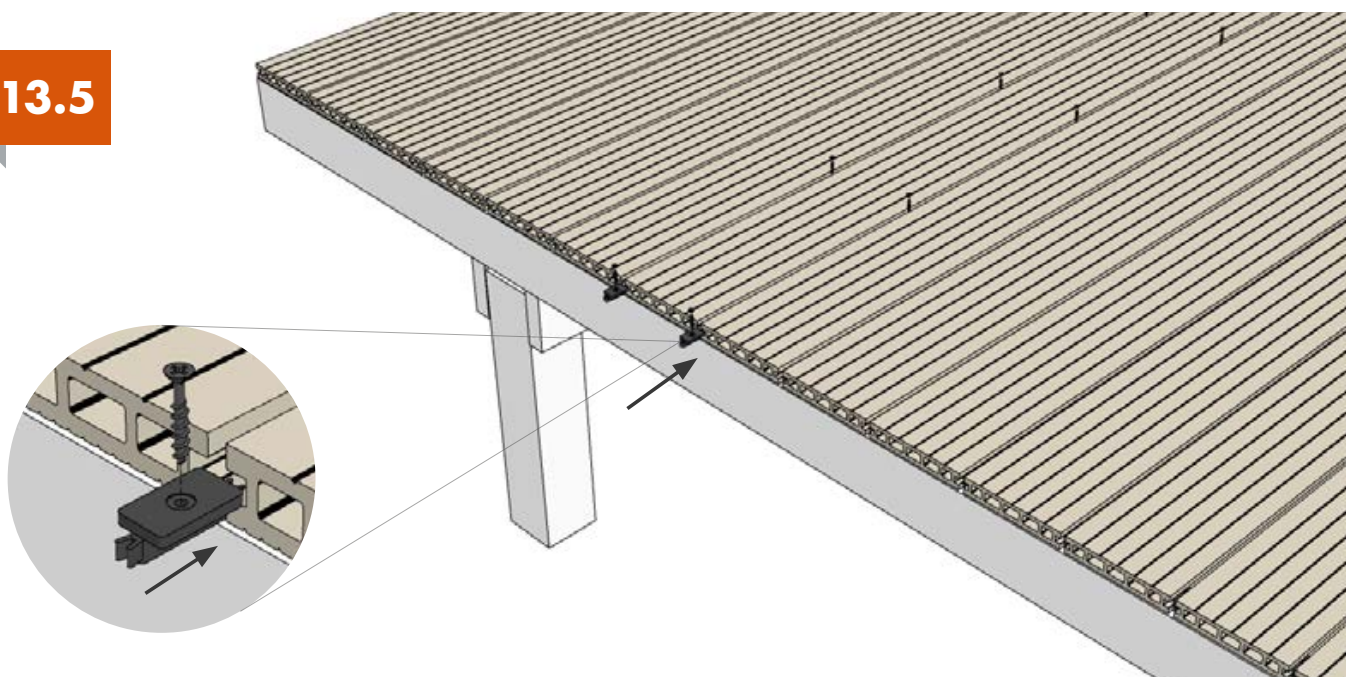


**13.4**



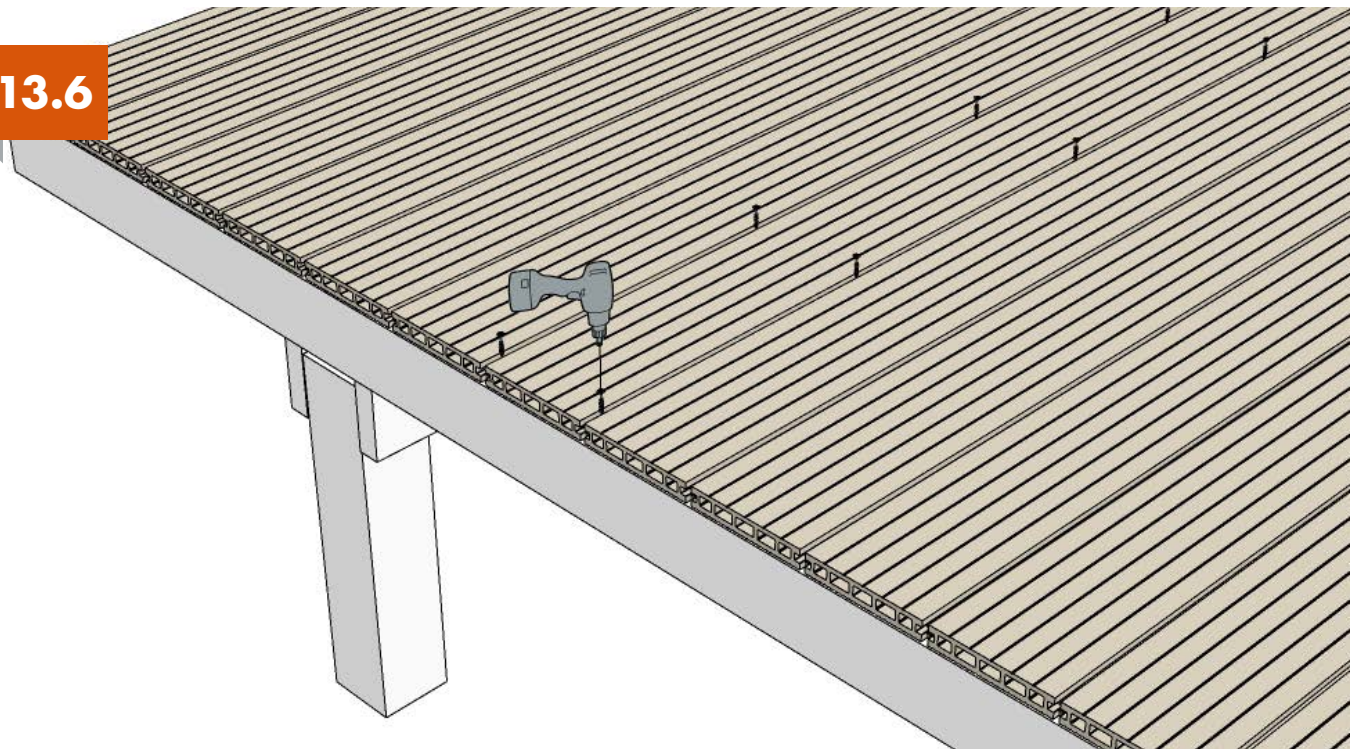
Slide the new board into position.

**13.5**



Then slide all the T-Clips back into the grooves of the board, and back into their original positions.

13.6



The clips can then be re-secured.



DESIGN GRID



DESIGN GRID



DESIGN GRID



## CONTACT

For further information, contact the Eurocell Technical Team on **0333 777 3047**. Visit **eurocell.co.uk** to find installation guides and videos for Eurocell products.

