

The Whiteriver logo, featuring the brand name in a white, sans-serif font on a red rectangular background.

Whiteriver

decks for living

# ULTRASHIELD

COLLECTION

25 YEAR  
WARRANTY

90%  
RECYCLED  
MATERIAL

COLOUR  
STABLE

DECKING  
INSTALLATION  
GUIDE



Composite Decking Installation Do's & Dont's

✓

LEAVE A 10MM GAP AROUND WHOLE DECK TO ALLOW FOR MOVEMENT

✓

ENSURE THERE IS GOOD AIR CIRCULATION AROUND WHOLE DECK

✓

LEAVE EXPANSION GAPS BETWEEN ALL BOARDS

✓

DOUBLE JOIST WHERE BOARDS ENDS WILL BE BUTTED TOGETHER

✓

USE GOOD QUALITY HARDWOOD JOISTS  
-----  
PRE DRILL FACIA BOARDS BEFORE FIXING

✓

USE RECOMMENDED CLIPS TO SECURE BOARDS TO JOISTS

✓

USE STEEL INSTALLATION KITS FOR FIXING TO STEEL JOISTS

✓

PRE DRILL STEEL JOISTS TO RECEIVE STAINLESS STEEL SCREWS

✓

ACCLIMATISE BOARDS TO THE ENVIRONMENT FOR 2 DAYS PRIOR TO INSTALLATION

✗

SCREW DIRECTLY THROUGH BOARDS

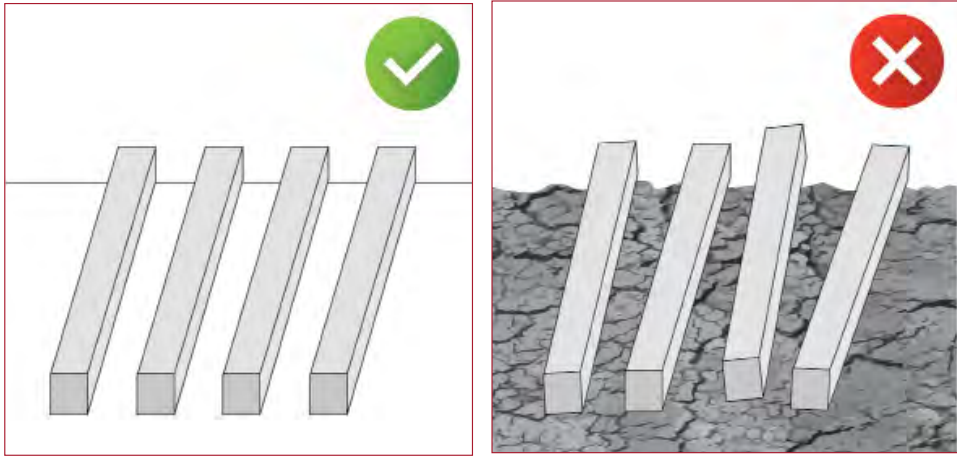
✗

STORE BOARDS ON SOILD OR UNEVEN SURFACES

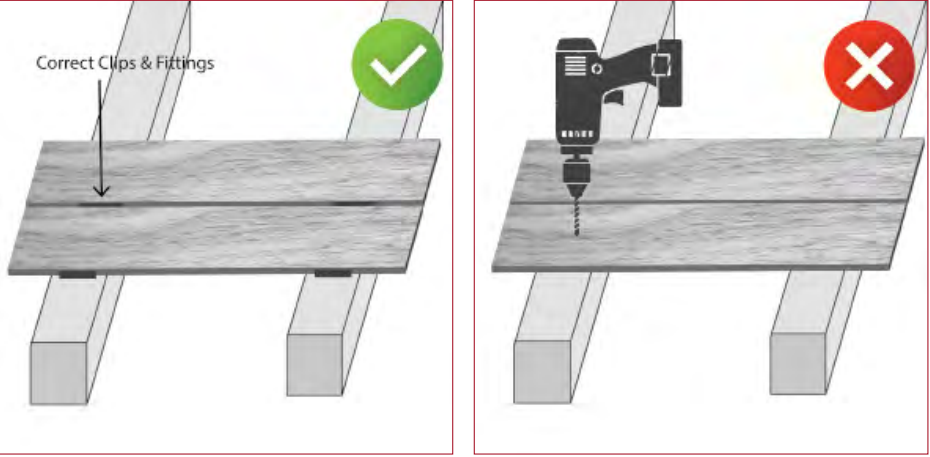
✗

INSTALL IN AREAS THAT HAVE WALL ON ALL SIDES

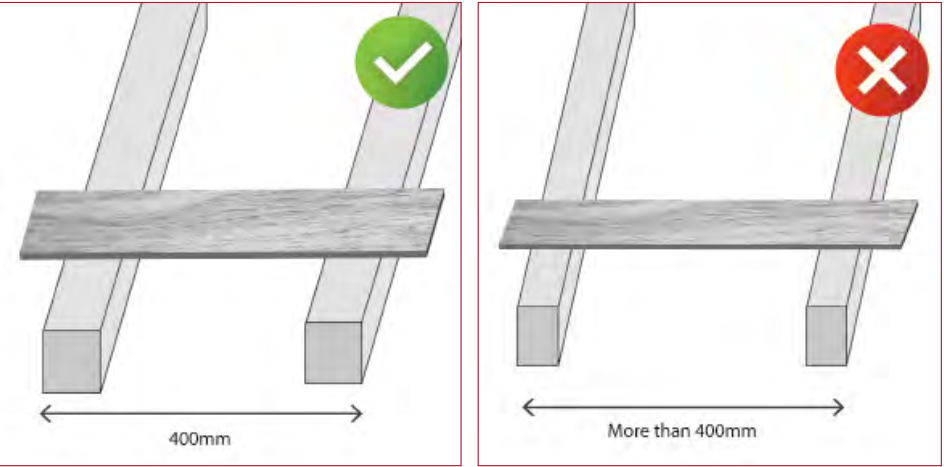
*Please read full instruction before starting installation. Failure to install Ultrashield composite decking correctly may result in the deck becoming structurally unstable. A 10mm gap around the whole deck must be left for expansion and a 5mm gap between boards joined at ends.*



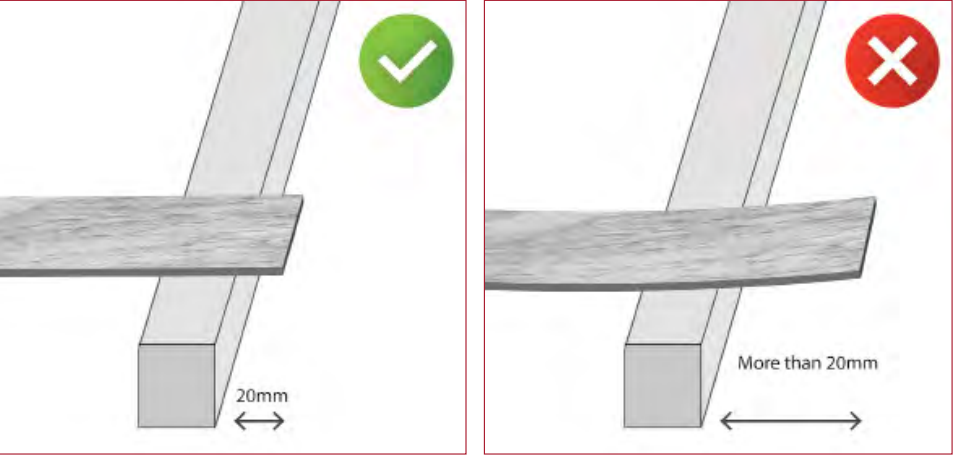
A structurally sound sub frame must be installed ensuring there is no movement prior to fixing boards to the joists. A 5% fall to allow water to drain and a min 100mm free air space between the boards and the ground beneath to allow sufficient airflow to prevent the build up of moisture is essential.



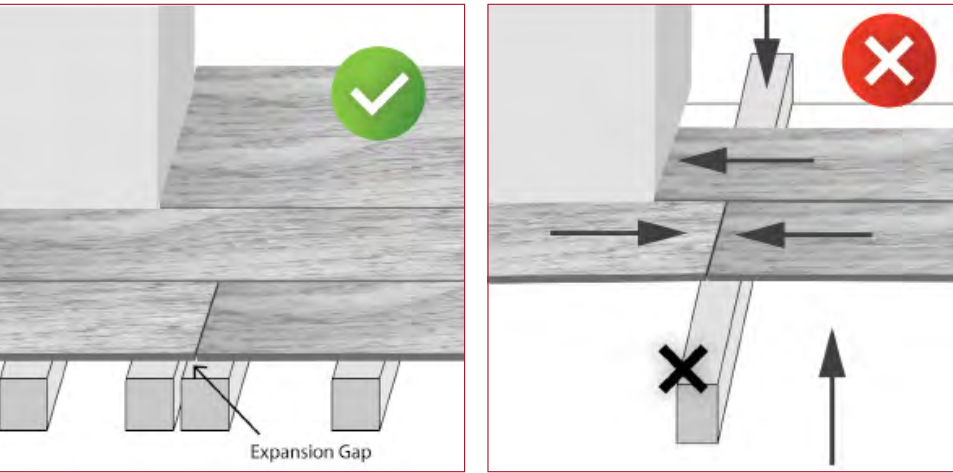
Composite decking should only be installed using correct clips and fixings - failure to do this will effect the structure of the deck as well as warranty. Never screw directly through the boards.



Joists must be set to 400mm centres for stability and to avoid warping.



Maximum over hang 20mm



Board ends butted together must be supported by separate joists and have a min 5mm gap for expansion. Failure to do this will result in structural failure and warping.

# 1. Deck Planning, Preparation & Ventilation

## General

Composite decking has a composition of 60% timber, 30% HDPE Plastic and 10% Resins / Pigments etc. While the timber element is very stable (it is kiln dried to very high temperatures to remove the cell structure), the HDPE expands and contracts on the length of the board in line with changes in temperature and humidity. ***It is necessary to leave a perimeter gap of 10mm around the entire deck and any fixed objects/obstructions and also a 5mm spacing must be left at each short board end to allow for normal seasonal movements.***

## Planning Your Deck

Designing and building a deck can be a fun and rewarding experience. You probably have given some thought as to what you want in a deck, now is the time to really visualise it. What will your deck be used for, relaxing, entertaining, will you put garden seating, BBQ and tables with a parasol on it and how many people might you have on your deck. Will there be children and elderly people using it.

### These are the questions you need to look at before starting.

- (1) Where will I install the deck.
- (2) What size do I want the deck.
- (3) Which deck board do I like best
- (4) Decide on what direction you would like the boards to run
- (5) Follow the fitting instructions carefully, before starting.

## Location & Deck Size

When deciding the size of your deck, look around at the space you have, your house,, the size of your garden and what proportion of deck will enhance and improve the look of it. Your deck should have a southerly aspect. Is the ground level or falling? How close to the house do I want it? When deciding on the size of deck you need to take into account that the deck boards are 3.6m in length. You can make a deck any length, but you do not want to have a deck with very short end boards.

## Tools Required

Whiteriver Decks can be installed using the same tools that you would you use for fitting any timber deck.

- Tape Measure • Electric Saw • Level • Square • Cordless Drill • Building Line • Safety Goggles

## Design

Once you have made a decision on the above, now you need to decide on the deck design. A deck that is well designed can do amazing things to any home. First decide on the direction you would like the boards to run. Will there be steps? Would you like hand rails around it? What colour will suit your garden and house best? To ensure you get the best result from your Whiteriver Composite Decking, we recommend working with a professional contractor with previous composite decking installation experience.

## Static

Static build-up is a naturally occurring phenomenon that can occur with many composite products. Dry and windy environments may make this even more apparent, this all varies depending on the climate and age of the decking.

## Acclimatising Product

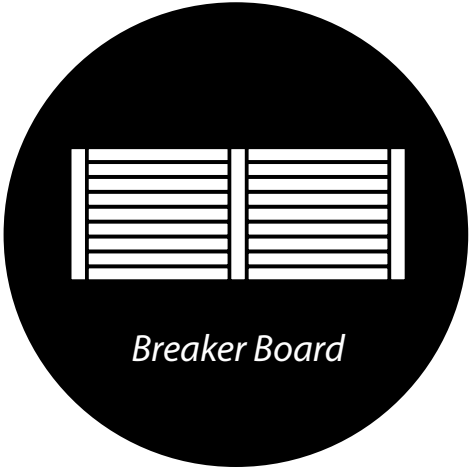
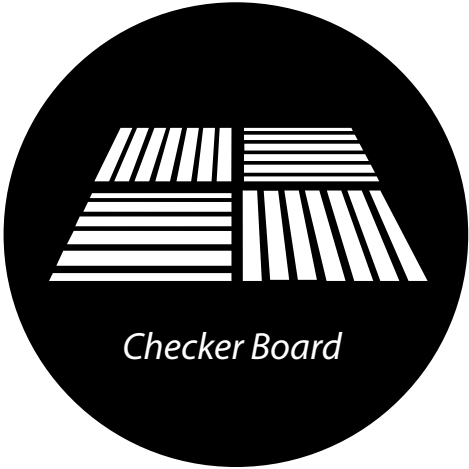
As boards may experience slight expansion and contraction it is recommended that all product is acclimatised to the environment where it is being installed for at least 2 days before installation. This will prevent any unwanted shrinkage issues during and after installation. Boards should be placed on a flat even surface in the area of installation. Do not leave directly on soil or uneven surfaces as the board could warp to the shape of the surface.

## Ventilation and Site Conditions

The site should be free draining and there should be a fall of at least 5% to let water drain off. The ground/ substructure should be properly supported - please consult with an engineer if you are unsure. Whiteriver composite decking products CANNOT be directly installed onto a flat surface. It must be installed onto a substructure, so there is adequate and unobstructed air flow under the decking to prevent excessive water absorption. **Good ventilation is the key to your deck performing well in the long term.**

For non screed surfaces, plan a minimum of 100 mm (4 inches) of clear area under the decking surface. This is required to allow for adequate ventilation on all deck types so air can circulate freely between adjacent joist members to promote drainage and drying. Air must have an entry point and exit point to the subconstruction. For screed surfaces, we recommend a minimum clearance of 100mm (4 inches) from the ground level. In this case, the joist should be built in two criss cross layers to allow for air movement. For small balcony areas, less than 10m2, it is possible to have a lower clearance provided sufficient drainage and air movement can be provided. For balcony and roof top projects it is essential that there is adequate drainage to prevent a build up of stagnant water. We recommend getting all balcony and roof top designs reviewed by an engineer.

***Please note areas that are walled in on all sides are not suitable for deck installation as there will not be enough air movement under the deck. If there is any dampness under the deck, it can lead to mould build up underneath the deck and excessive expansion and contraction in the boards. In summary, it is vital that the area underneath the deck is free draining and per above, adequate ventilation is provided for.***



## Direction of deck

There is no correct deck direction it is purely personal preference but whatever you choose dictates the sub-frame design and configuration. Things to consider: Think about where you or your guests will view the deck. Looking along the length of the boards will make the deck look longer, while looking acrosss the boards creates an illusion of width. Would you rather the deck looked longer or wider? Standard board lengths are 3.6 metres long. Cutting across a board is much easier than cutting along the lengths. Boards run at 90° to the deck boards. Keep this in mind - the fewer cuts, the easier and faster the install. Tip: For better slip resistance, its better to orientate the boards at right angles 90° to the majority of the footfall so that you can get more grip underfoot. Once you have decided, you can determine the length and quantity of bearers required.

## 2. Sub-frame Construction

Whiteriver Ultrashield Composite Decking can be installed on any existing structurally sound sub-frame, providing the necessary spans are adhered to as per manufacturer guidelines.

### Construction

Whiteriver Composite Decking is not intended for use as columns, support posts, beams, joists stringers or other primary load-bearing members. Whiteriver Composite Decking must be supported by a compliant substructure and cannot be installed on existing deck boards.

#### For all sub frames, please note the following:

- A subframe allowing a minimum of 100mm free airspace between the composite boards and the ground or substrate is essential to allow sufficient airflow to prevent the build up of moisture.
- The maximum span beneath supporting bearers depends on the bearer material choice and specification. Please refer to material supplier.
- Some wooden frames use a post and beam style construction. With this arrangement, the support posts sit in or on concrete footings or slabs. Please refer to the decking span table to select appropriate spacings fore bearers depending on the type of deck board used.
- If possible, try to make the width of the deck divisible by the width of the chosen board to avoid the need to trim and finishing boards along its length. Work out approximately how many boards width your deck will be, then round it up or down to the nearest board.

### Framing

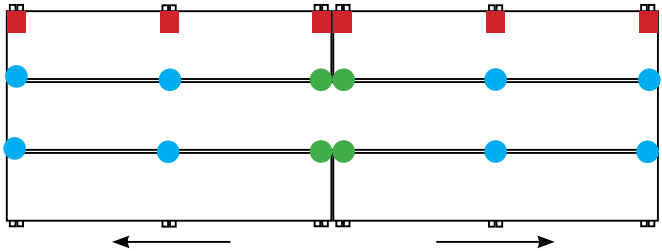
First, determine the decking span, that is how far apart your joists will be. The overall frame needs to have a min fall of 5% to allow water to drain off. The surface of the frame needs to be completely level before installing any boards.

**Note: Adequate spacing in the joists is required to keep the deck boards from bending. Please review the chart of this installation guide to see what spacing is required for your profile.**

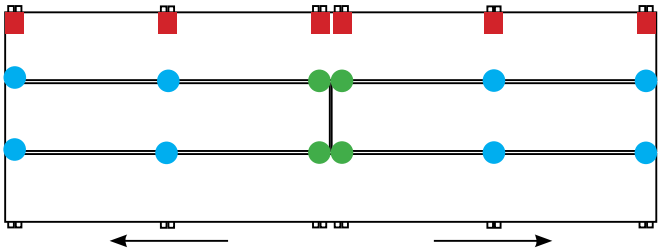
Maximum Decking Spans on Center-to-Center				
Region	Profile	Dimensions	Residential Span	Commercial Span
EUROPE	Grooved, Circle Hollow Board	138 x 23mm (5.5 x 0.9 inches)	400mm (16 inches)	300mm (12 inches)

Joists Spanning on Center-to-Center with Angled Decking Installations		
Degree of Angle	Dimensions	Spacing
90	138 x 23mm (5.5 x 0.9 inches)	Refer to the above tables
60	138 x 23mm (5.5 x 0.9 inches)	50mm (2 inches) less than the stated above tables
45	138 x 23mm (5.5 x 0.9 inches)	100mm (4 inches) less than the stated above tables
30	138 x 23mm (5.5 x 0.9 inches)	1/2 the distance stated in the above tables

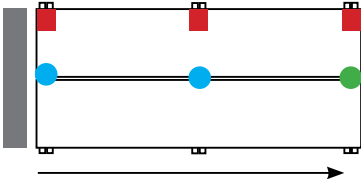
A



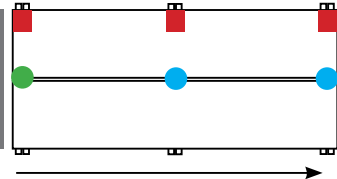
B



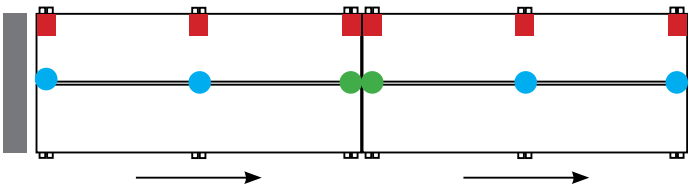
C



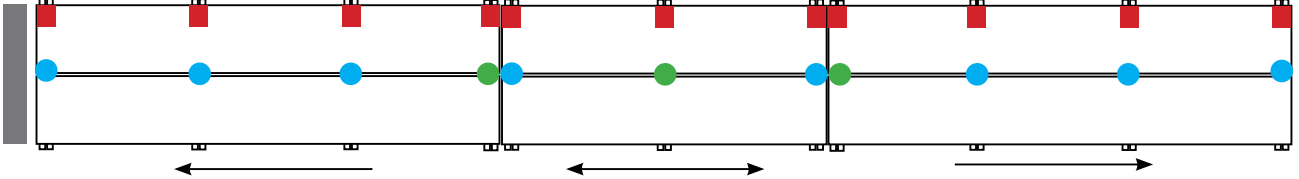
D



E

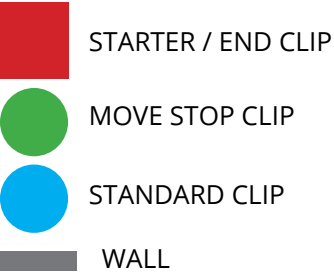


F



### Installation Using Concealed Clips

**IMPORTANT:** Always start from steps or the outside of your propped decking area and work towards a wall/fence. If you have steps this is vital! Read through before commencing installation.



#### Brick Style Deck Boards Layout

The option is suitable for deck installations where expansion at either end of the length of deck is to be equidistant. This is recommended for standard decks. Arrows indicate direction of expansion.

#### Straight Join Deck Board Layout

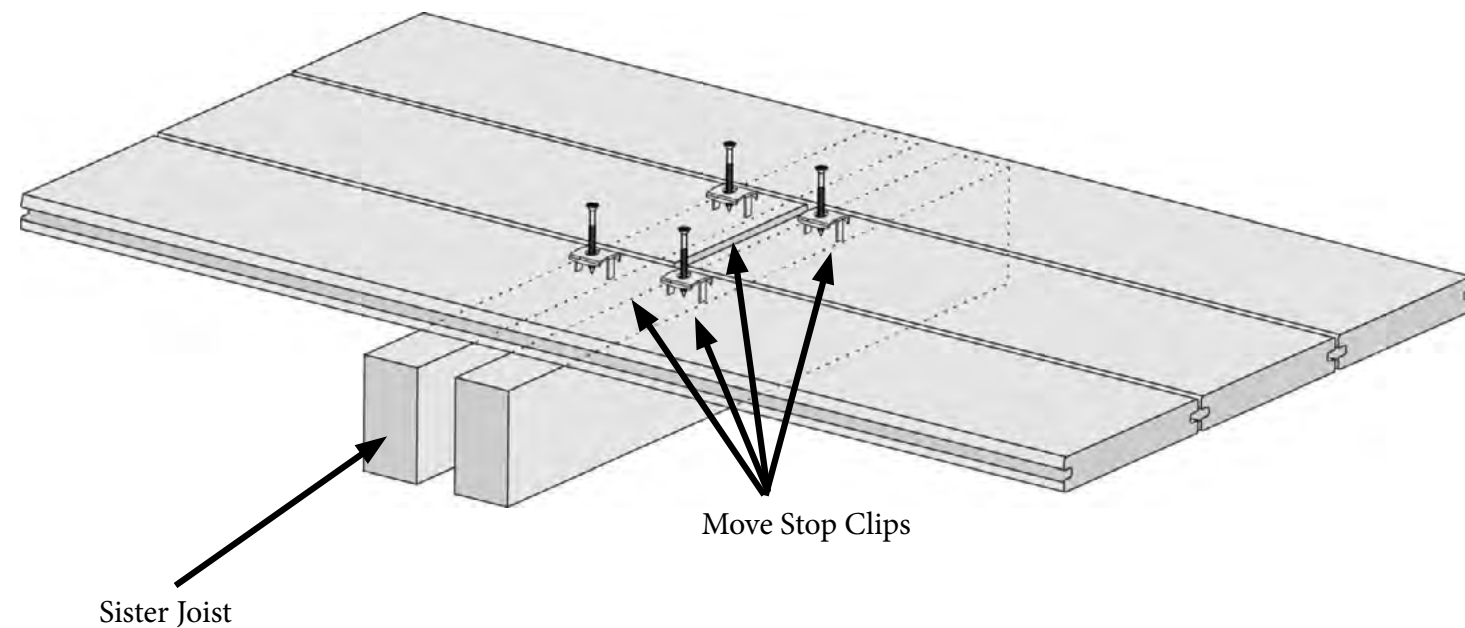
This option is suitable for deck installations where expansion is forced to be at an open side of the deck. Arrows indicate direction of expansion.



When installing two boards end to end across the frame, move stop clips are recommended to be used at the butt joints to ensure proper gapping during expansion and contraction as shown.

Note: When butt jointing boards sister joisting must be used so that each individual board is on its own joist to ensure that the board will not slide off the joist, failure to do so will void the warranty, as shown.

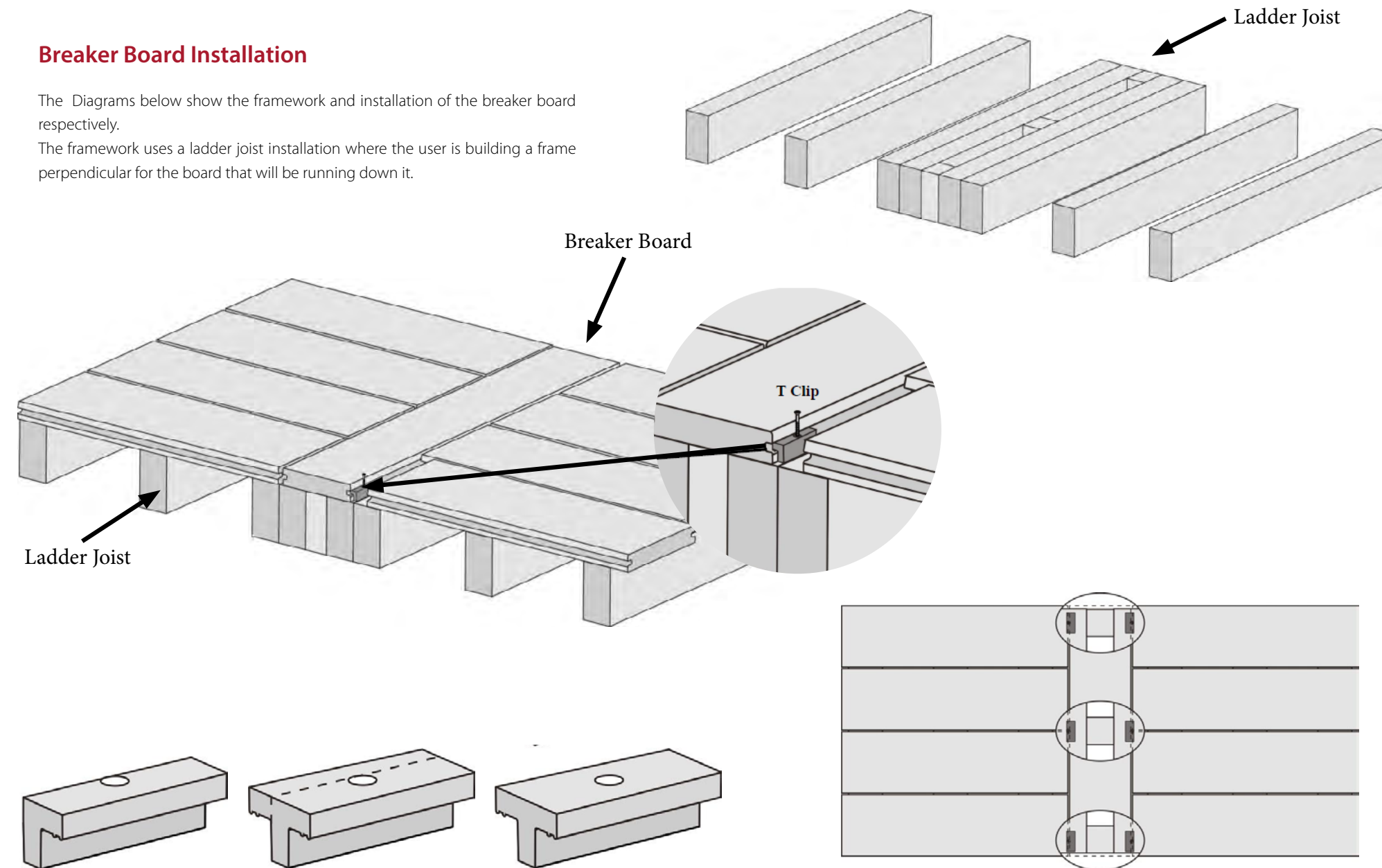
We recommend where there is a length of more than two boards needed to make the deck, a breaker board should be introduced.



## Breaker Board Installation

The Diagrams below show the framework and installation of the breaker board respectively.

The framework uses a ladder joist installation where the user is building a frame perpendicular for the board that will be running down it.



Note: The T-Clip can be used as a breaker board clip by cutting it in half as shown.

Note: Above view of completed breaker board with T-Clips cut in half.

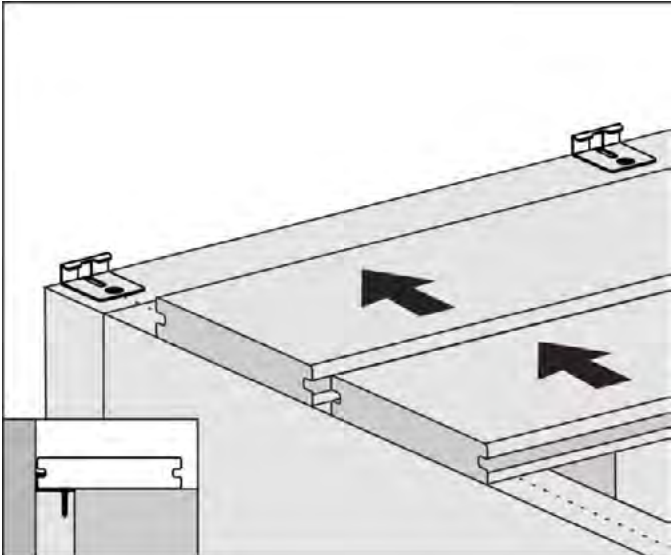
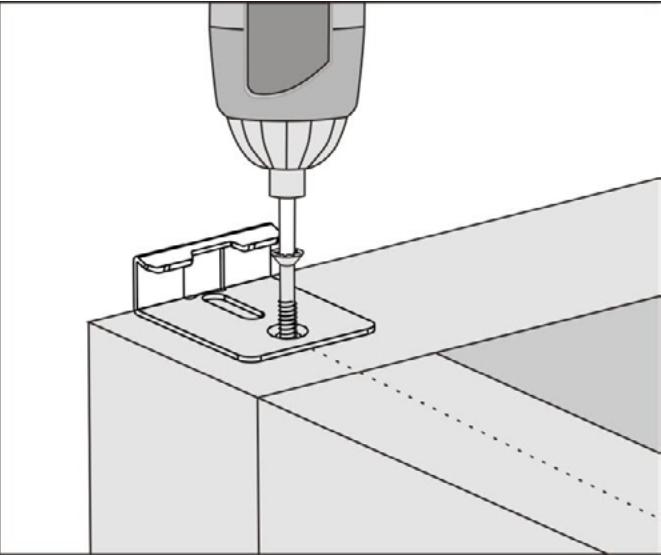
### 3. Decking Installation

Now you should have a solid foundation on which to lay the decking. Whiteriver has a unique set of sub-surface fixing clips to ensure the deck is looking neat and uniform. Please ensure you use the correct screws for your chosen deck boards.

When installing the deck the first and last board of your project will need to use a starting accessory. Every other board will use the hidden fastener for its installation.

**Starting Accessory Installation:**

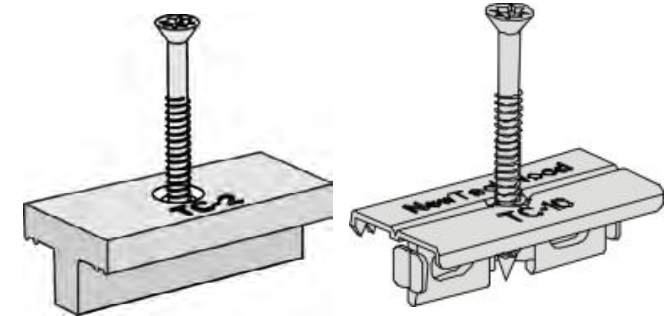
- 1. After calculating the decking span and making the frame of your deck the first board is ready to be installed.
- 2. First pre-drill into the joist then fix the starting accessory into the joist as shown below.
- 3. Then take your first board and push it into the starting accessory as shown below.



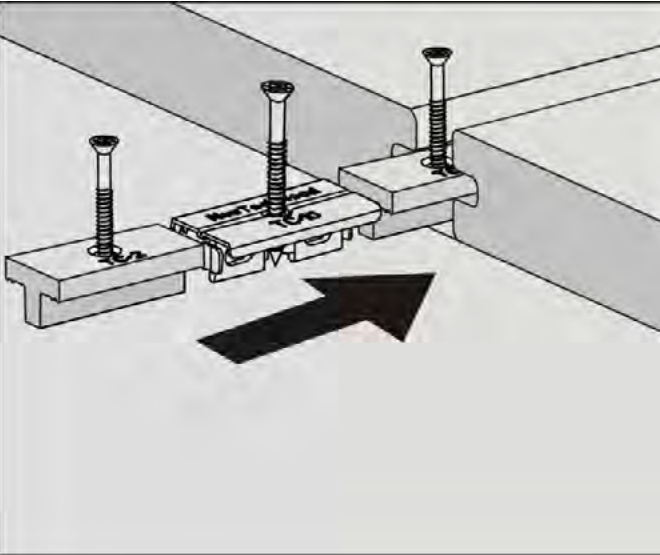
**Decking Clip and Move Stop Clip Installation**

Note: The following shows how to install the Decking Clip and Move Stop Clip. A Starter Clip still needs to be used to install the first board.

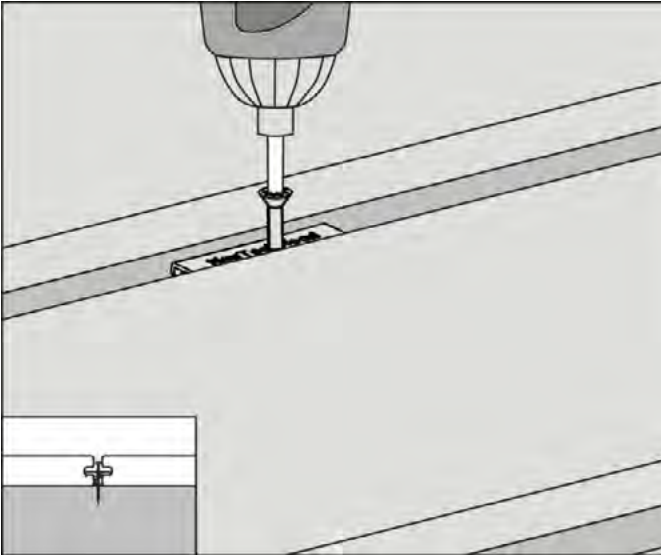
- 1. First slide the clips into the grooves of the boards with screws facing up.



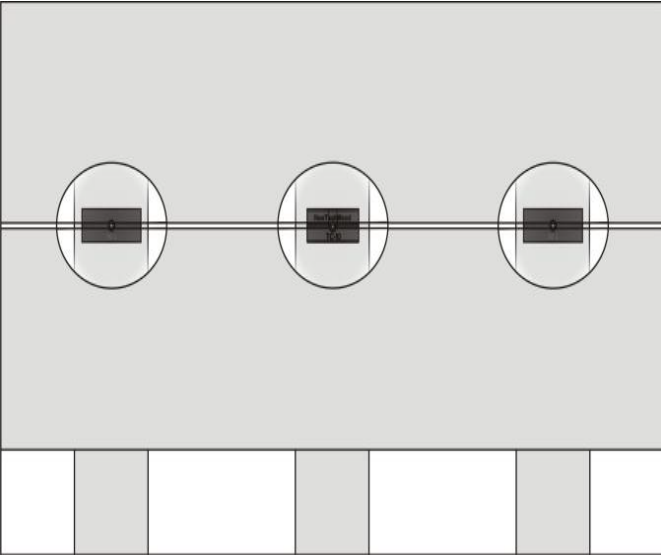
- 2. The fastest way of installation is by pushing all the boards together and then coming back and sliding the clips into the grooves from the side.



- 3. After getting all the clips into position above each respective joist, begin to fasten them from above as shown.



NOTE: The Move Stop Clip is in the middle below to show the expansion and contraction is happening in both directions.



**Fasteners**

When fastening Whiteriver Composite products all screws that are face fastened should always be driven in at a 90 degree angle to the decking surface.

Toe nailing/screwing should never be done to the products. An extra joist should be added if a 90 degree angle cannot be driven into the board.

All fasteners should be on their own independent joists, when two boards ends meet each other there must be a sister joist. The end of each board must sit on its own joist.

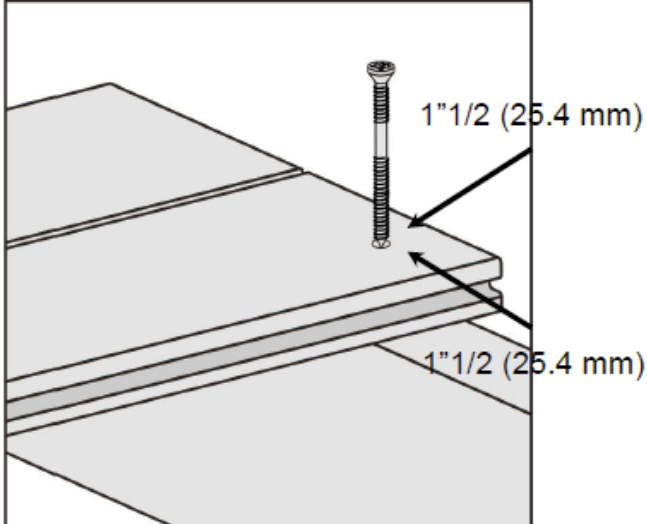
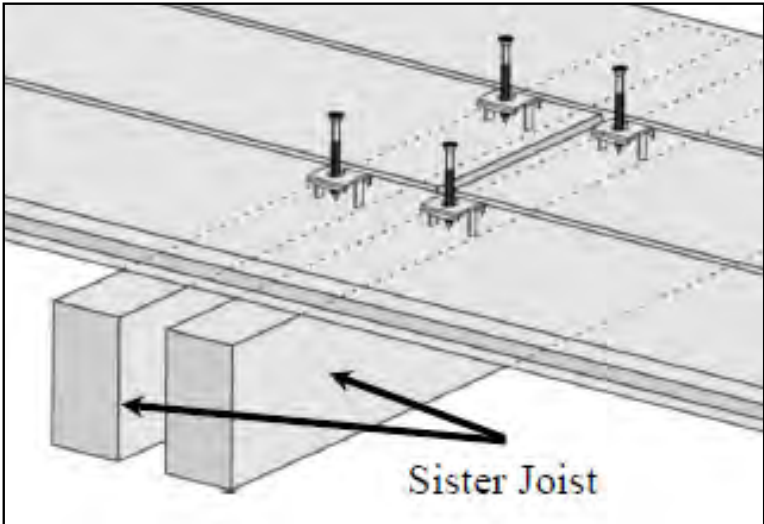
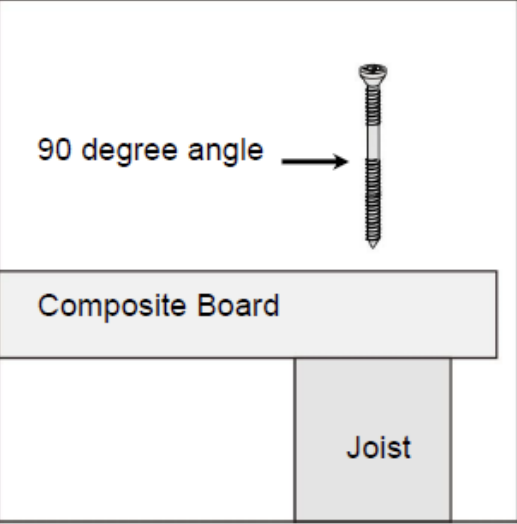
Use white chalk, straight boards, or string lines as templates for straight lines. NEVER USE COLOURED CHALK. Coloured chalk will permanently stain Whiteriver Composite products and are not recommended.

All nails/screws that are face fixed should always be stainless steel. When face fixing always go in at least from the ends and width of the board by 1"1/2 (25.4 mm) as shown below.

Always use screws designated for use with composite decking material. Always test the screws on a scrap piece of board to ensure the screws do not cause the surface of the decking to mushroom

or bulge around the head of the screw. If it does cause this issue, change to a different brand of screw.

When choosing which screws/nails to use always check first with your local hardware stores to see if they have screws that are engineered specifically for composite wood. These screws/ nails will always work and give Whiteriver Composite products the best looking outcome, using other screws/nails that are not recommended for composite could potentially damage/harm the decking. If you are unsure which screw/nail to use contact your manufacturer for more information.

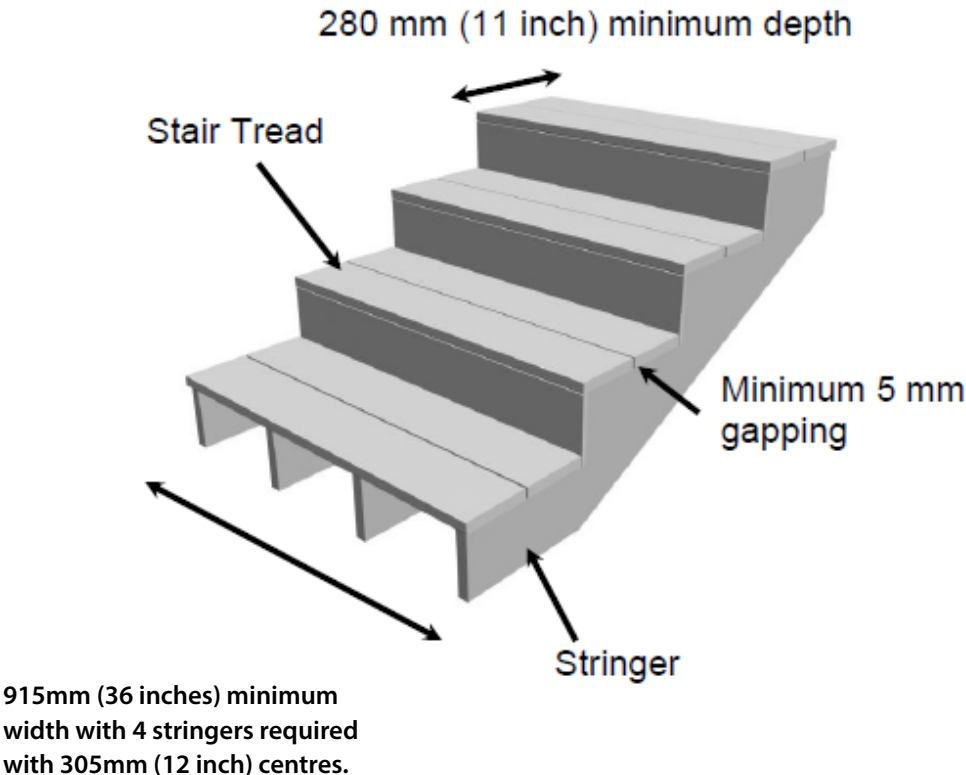


**4. Accessory Installation**

**Stair Tread Installation**

Each step should be started with an Ultrashield Stair Tread followed by a standard board. Only Ultrashield Stair Treads should be used for constructing stairs or steps (DO NOT USE STANDARD HOLLOW ULTRASHIELD BOARDS).

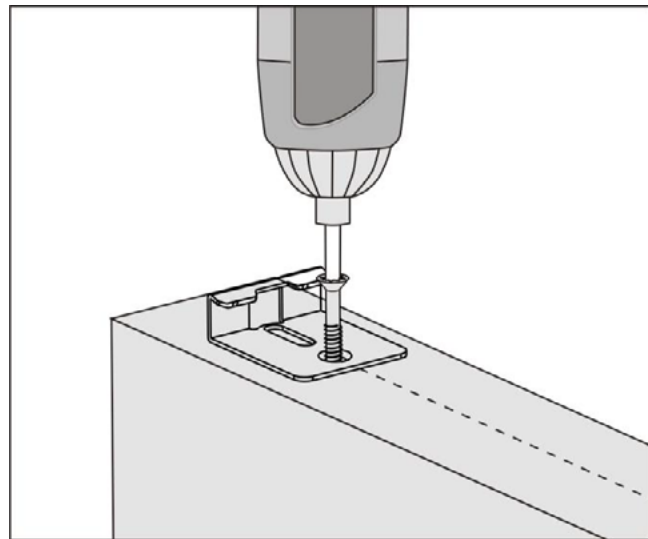
A maximum of 915mm (36 inches) width with a minimum of 4 stringers with 305mm (12 inch) centres should be used.





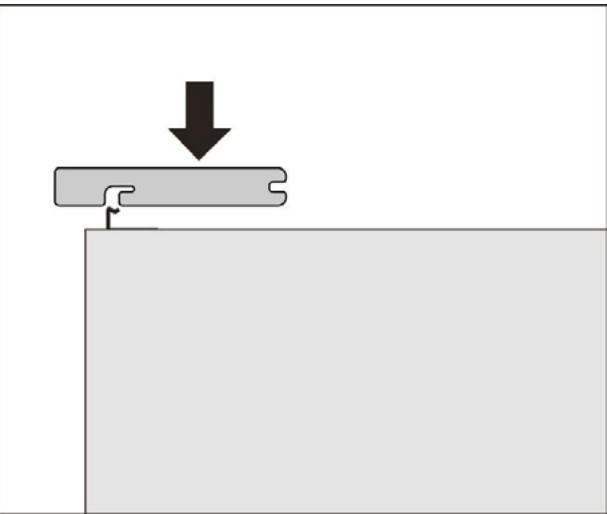
### Starting Accessory Installation:

1. First determine how many boards your stair is going to take to finish (with clips) and then you can start to measure where the starting clip will go. Use a white chalk line (NEVER USE COLOURED CHALK) to ensure that all starting clips are lined up on each joist. Note: The bullnose profile can only cantilever 15 mm (5/8 inch). If the bullnose profile cantilevers more than this the warranty will be void.

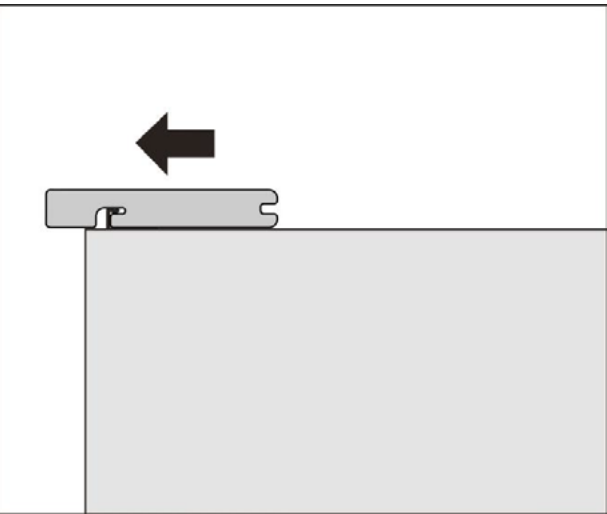


### Bull Nose Installation:

1. Now take the bullnose profile and place it right over all the starter/end clips and push down as show below.

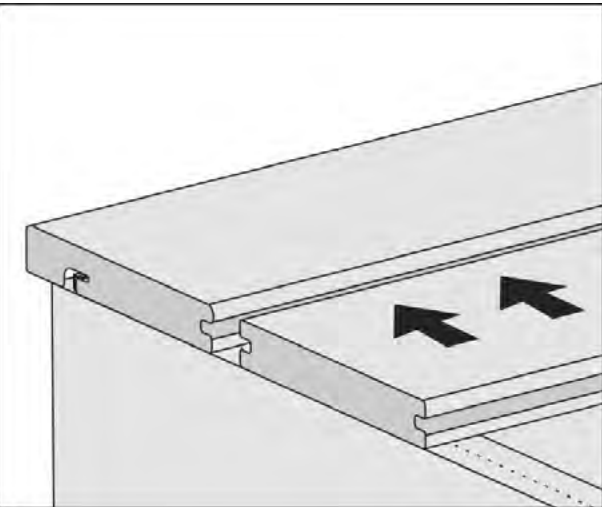


2. Now that the starting clips are inside the underside of the bullnose, the final step is to push forward to ensure that it secured into place.

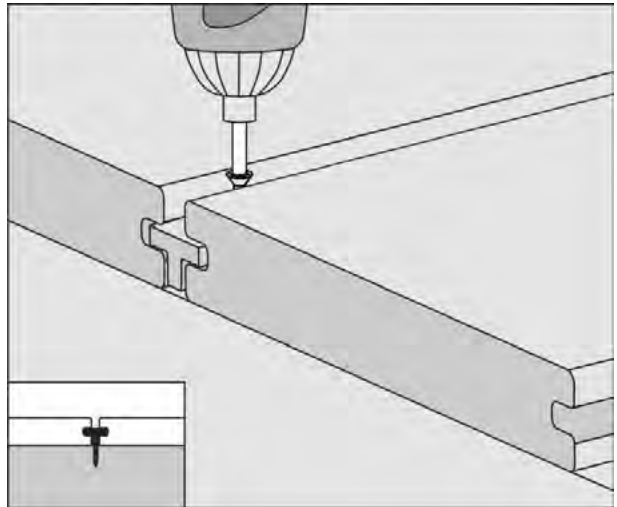
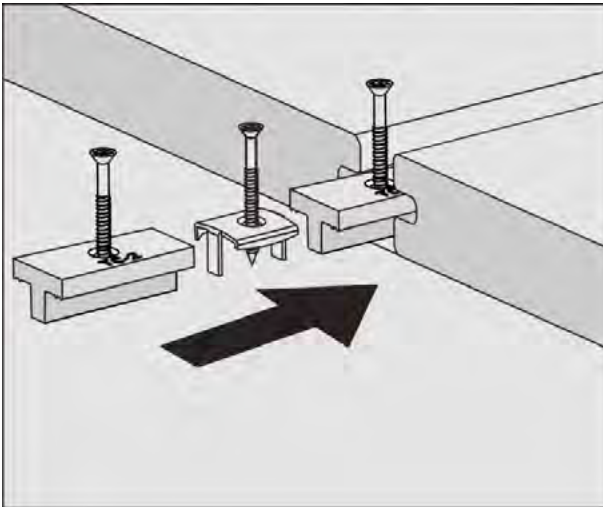


### Bull Nose Installation (Continued):

3. Now take the next board and have it situated behind the bullnose profile as shown below.

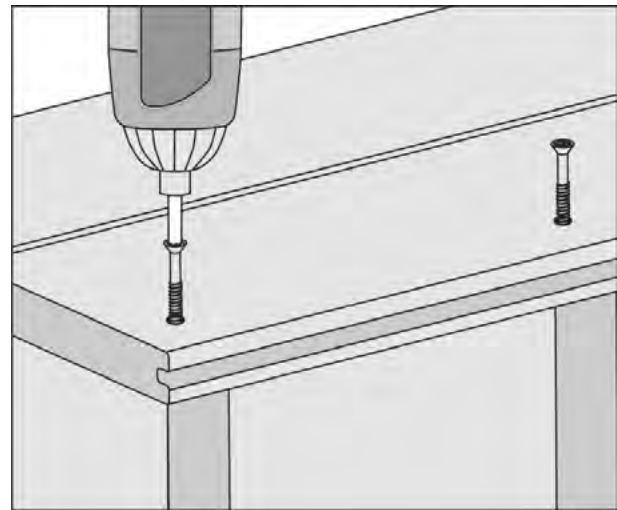


4. Slide in the clips into the two grooves and glide them along until they are on their respective joists and then screwing down onto the joists as shown.



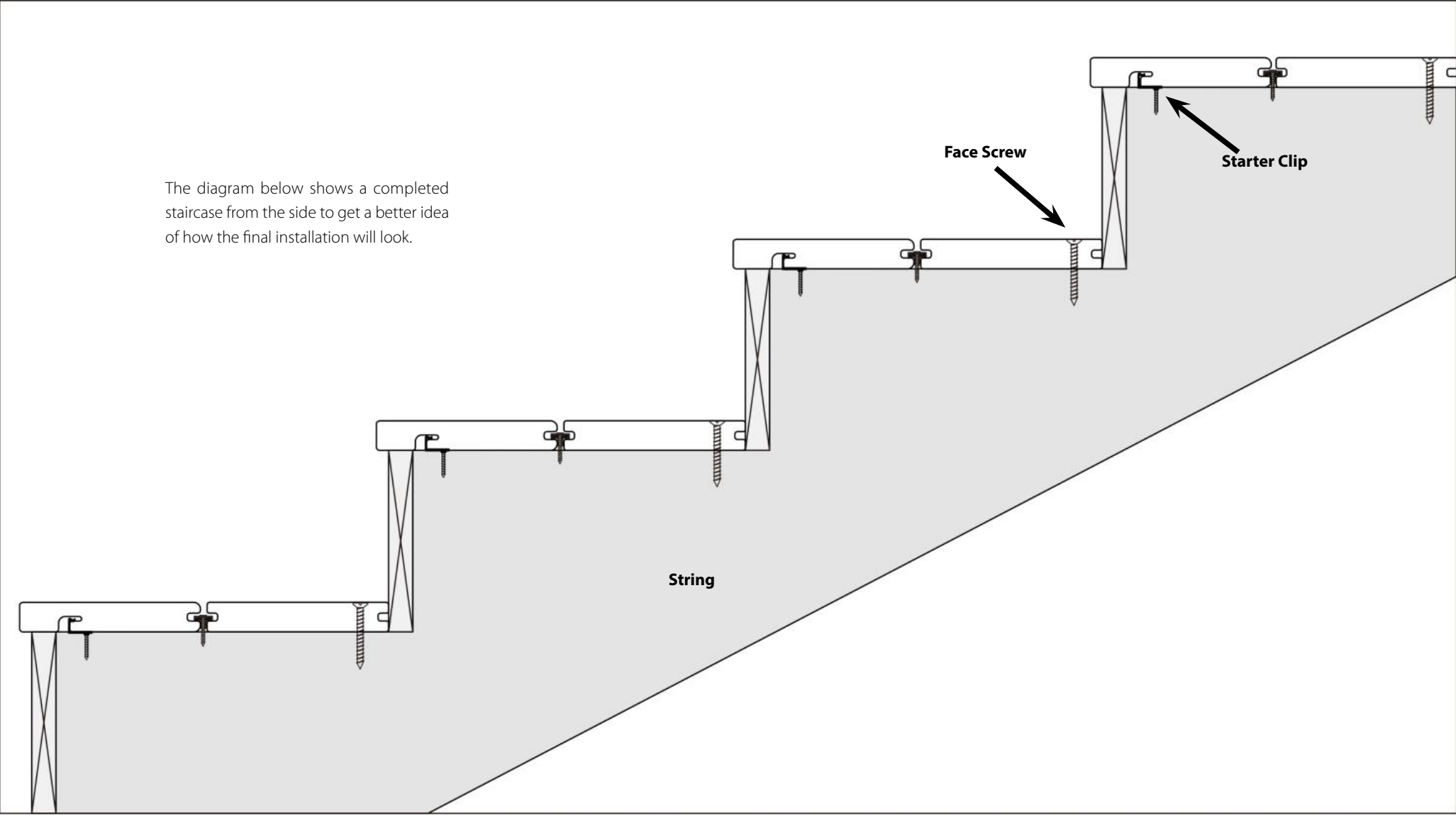
5. Finally, finish your last board by face fixing into the board at every joist as show.

Note: Remember to pre-drill before face fixing into the board. Also face fixing must happen at a 90 degree angle and must be at least 1" 1/2 by 1" 1/2 (25.4 by 25.4 mm) from the ends and the width of the board.





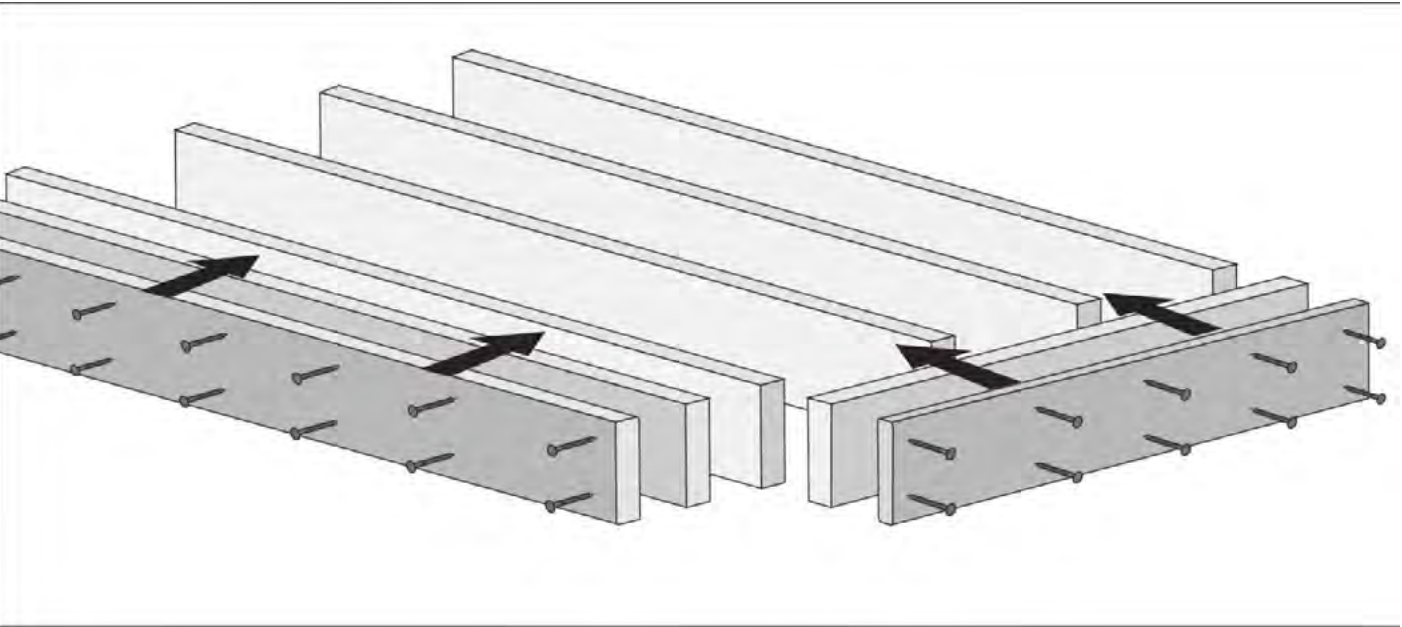
**Bullnose Installation (Continued):**



**Fascia Board Installation**

**Installing against the width and length of decking**

1. The fascia should be installed on the rim board of the frame. The fascia should be installed as shown below. The distance between screws must be less than or equal to 300 mm (12 inches). Two screws must be used 1" 1/2 away from the ends



2. First pre-drill the holes for the fascia board. The fascia board should be drilled with 0.5mm smaller holes than the screw and fixed at the centre and both ends.

3. The fascia board will be installed into the the block wood and through the joist.

Note: NEVER install the fascia by drilling into the decking ALWAYS install the fascia into the joist and ALWAYS pre-drill the fascia board.

## End Cap Installation

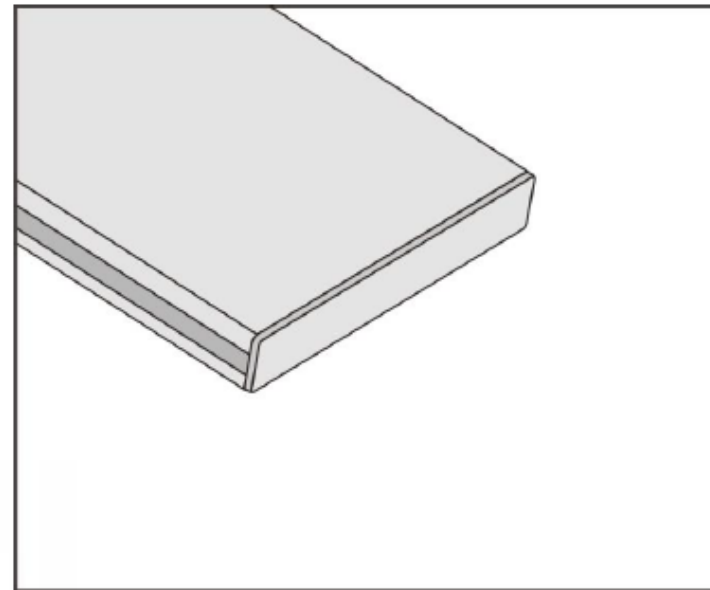
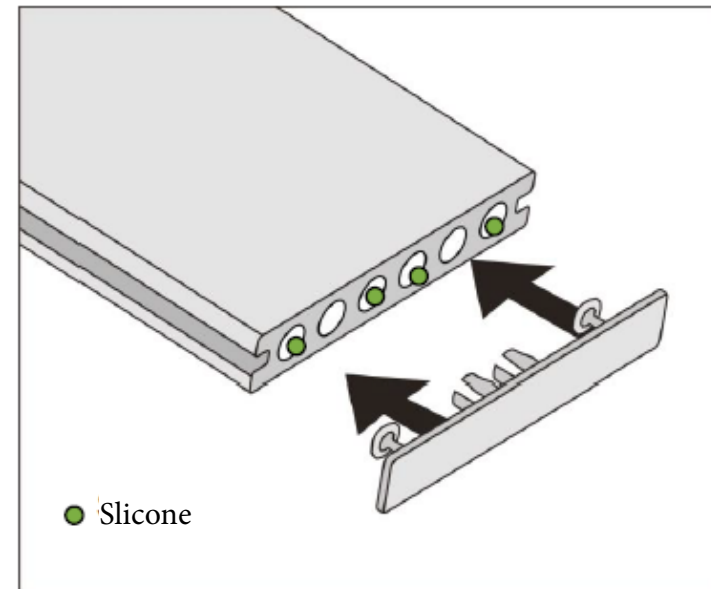
### Installing the end cap

1. Place the end cap in front of the hollow boards holes and push in as shown.

Note: A mallet could be used as well to push in the end caps.

2. The final finish should look like the Diagram below.

Note: A dab of silicon can be used on the end cap or inside the holes of the board in order to secure the end caps better.



General Cleaning: Keep it clean and your Ultrashield composite decking will reward you with years of low maintenance pleasure. Periodic cleaning of Ultrashield Composite decking is suggested, even if it appears clean, as it is important to prevent the build-up of pollen / debris that can cause mould. If unsure about the product being used to clean / remove stains from your deck, it is recommended that you test a small area in an inconspicuous place to determine if the product will cause any unwanted discolouration. Below is a more detailed instruction for taking care of your deck. You will see that there are some different methods for cleaning Ultrashield which has a protective cover.

### DIRT AND DEBRIS

Surface debris should be sprayed off with a hose. Use warm water with liquid soap and a soft non-metal scrub brush to remove dirt and debris within the embossing pattern. Scrubbing in the direction of the grain is best. If there is heavier dirt, you can use a low pressure washer with wide fan tips at a safe distance using a maximum pressure of 1500psi at a minimum distance of 30cm (12")

### TANNINS

Tannins can form when organic material gets stuck within the gaps of the deck and water starts to pool under it. Therefore, it is best to remove the debris within gaps with a garden hose, spatula, or soft brush. Keeping the gaps clean will reduce the chances of tannins from forming leaving your deck cleaner.

### ICE AND SNOW

Use calcium chloride or rock salt to melt the snow and ice. Build up of calcium chloride or rock salt may occur leaving a white residue, which can be easily removed with warm soapy water and a soft non-metal scrub brush.

### PROTECTION

We suggest a mat under your BBQ to protect from grease stains, and plastic protectors under metal furniture or planters to prevent gouging and potential rust stains.

### OIL/ GREASE/ FOOD

All oil / grease / food spills must be removed promptly. To clean use warm soapy water and a soft non-metal scrub brush. Grease and oil may require an all purpose cleaner if warm soapy water and soft non-metal brush do not work. Be sure to check with manufacturer's on which cleaners are appropriate to use on your deck.

### MOULD AND MILDEW

Mould and mildew occurs periodically in everyday environments. Therefore, surface mould and mildew can appear on the deck if decaying organic materials such as, but are not limited to, wood, leaf decay and pollen are present along with elevated temperatures, air and water. Therefore, we can only minimize the occurrence by removing these decaying organic materials as quick as possible. If mould and mildew are present use warm soapy water and a soft non-metal scrub brush to clean.

### IRREGULAR HEAT SOURCES / FIRE

Composite decking has the tendency to retain heat whenever presented directly or indirectly to it. Irregular heat sources, such as, but not limited to fire pits, fire places, and barbecue grills, and fire may damage the surface of the UltraShield decking. Proper caution should be taken with irregular heat sources and fire to ensure no damage occurs to the deck.

### MASONRY CONSTRUCTION

During masonry construction the deck must be covered AT ALL TIMES preferably with a sheet or tarpaulin or construction grade plastic film. Mineral deposits, left over from construction, can mix with water and evaporate leaving deposits behind which creates a white/haze on the deck surface. To prevent this problem ensure that masonry/cement construction is set properly before ever installing the decking material. If mineral deposits are left on the deck surface, regular maintenance is required in order to maintain the original look of the deck.



[www.wrg.ie](http://www.wrg.ie)