Monarch Decking Board Installation Guide

06.30.25 US

NewTechWood®

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~ Appendex ~

IMPORTANT NOTE:

Read All Sections Before You Start

For the most up to date information, please visit our website @ www.newtechwood.com

Prior to installing any composite decking, it is recommended that you check with local building codes for any special requirements or restrictions. The diagrams and instructions outlined in this guide are for illustration purposes only and are not meant or implied to replace a licensed professional. Any construction or use of NewTechWood must be in accordance with all local zoning and/or building codes. The consumer assumes all risks and liability associated with the construction and use of this product.

1. Safety

When dealing with any type of construction project, it is necessary to wear appropriate safety equipment to avoid any risk of injuries. NewTechWood recommends but is not limited to the following safety equipment when handling, cutting, and installing NewTechWood: gloves, a respiratory protection, long sleeves, pants, and safety glasses.

2. Tools

Standard woodworking tools may be used. It is recommended that all blades have a carbide tip. Standard stainless steel or acceptable coated deck screws are recommended.

3. Environment

A clean, smooth, flat, and strong surface is needed to install NewTechWood's products correctly. Please check with local building codes before ever installing any type of decking. If installation does not occur immediately, NewTechWood's products need to be put on a flat surface at all times. It should NEVER be put on a surface that is NOT flat.

If there is masonry work being processed, please cover the deck boards entirely to avoid the deck boards being worn or damaged by the dust and waste material generated from the masonry work.

4. Planning

Plan a layout for your decking before starting it to ensure the best possible looking decking for your project. Building codes and zoning ordinances generally apply to permanent structures, meaning anything that is anchored to the ground or attached to the house. So nearly every kind of decking requires permits and inspections from a local building department. We recommend drawing out a site plan of your proposed project that you intend to do to minimize errors and make your perfect decking.

Please Note:

Pressure wash on a scrap piece of material before using a pressure washer on the profiles to make sure that your settings will not damage the Ultrashield coating.

5. Construction

NewTechWood UltraShield is NOT intended for use as columns, support posts, beams, joist stringers, support against a force, or other primary load-bearing members. NewTechWood must be supported by a code-compliant substructure. While NewTechWood products are great for retrofits, NewTechWood's products CANNOT be installed on existing decking boards.

6. Static

Static can also be more prevalent in areas that are of higher altitude because the humidity is lower.
For these areas, be careful of using conducive objects such as metal railing and chairs as static shocks might occur more often. A potential way to lower the amount of static shocks occurring is to apply an
anti-static product to your deck or use anti-static mats before doorways. NewTechWood's products have been tested against EN 1815 - Assessment of Static Electrical Propensity and have received values under the maximum standard of 2kV.

7. Ventilation

NewTechWood products CANNOT be directly installed onto a flat surface. It must be installed onto a substructure that is made into a frame, so there is adequate and unobstructed air flow under the decking to prevent excessive water absorption. If there is excessive water absorption to any area that does not have the protection of the cap layer, there could be some swelling that occurs. A minimum of 4" of continuous net free area under the decking surface is required for adequate ventilation on all decking, so air can circulate between adjacent members to promote drainage and drying. In the case that installation is below 4", it is recommended to look up the maximum rainfall of the area to determine what height would need to built to ensure no flooding of the deck occurs. We recommend a slope of 1-2% must be used on the frame towards the direction of the drainage to ensure that there is no free standing water.

8. Heat and Fire

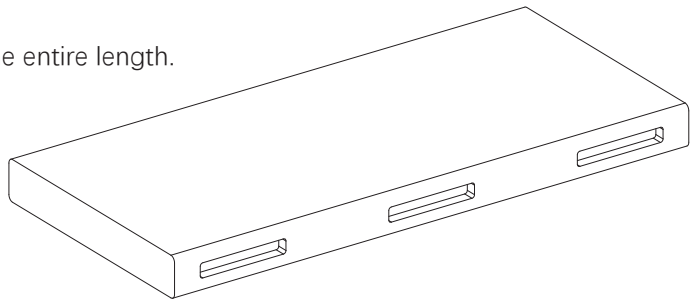
Excessive heat on the surface of NewTechWood products from external sources such as but not limited to fire or reflection of sunlight from energy efficient window products. Low-emissivity (Low-E) glass can potentially harm NewTechWood products. Low-E glass is designed to prevent passive heat gain within a structure and can cause unusual heat build-up on exterior surfaces. This extreme elevation of surface temperatures, which exceeds that of normal exposure, can possibly cause NewTechWood products to melt, sag, warp, discolor, increase expansion/ contraction, and accelerate weathering.
Current or potential NewTechWood customers that have concerns about possible damage by Low-E glass should contact the manufacturer of the product which contains Low-E glass for a solution to reduce or eliminate the effects of reflected sunlight.

9. Acclimate

Acclimating at least 2 days prior to installation is recommended. Acclimating the boards will get rid of any unwanted shrinkage issues seen during and after installation. Always remember when allowing the boards to acclimate at the job site it is important to put it on a flat and even surface. If put on an uneven surface there is a possibility that the boards could warp to the shape of the terrain.

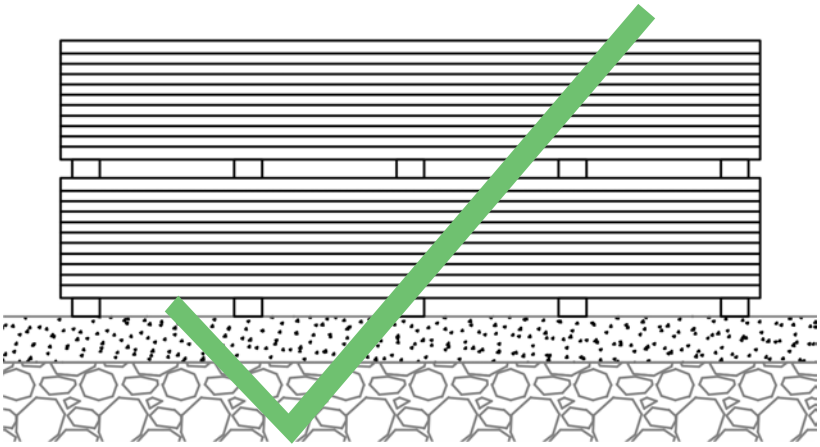
10. Routing

Solid boards can be routed for hidden fasteners to be placed in them,
as shown in the Diagram below..
Please Note: Boards should never be routed the entire length.

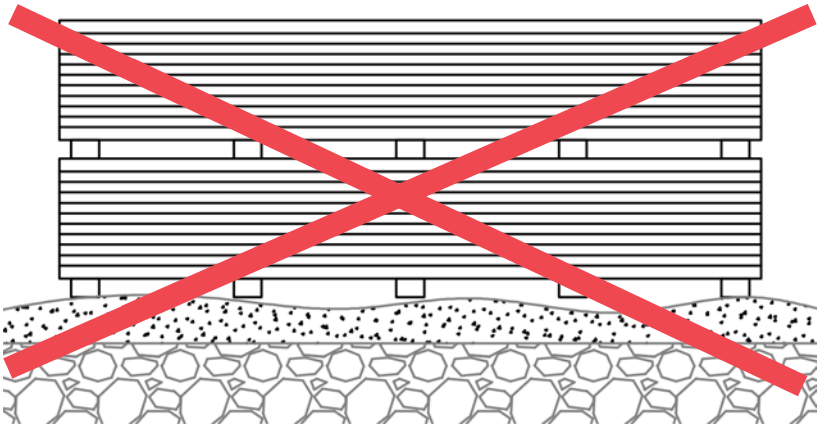


11. Storage

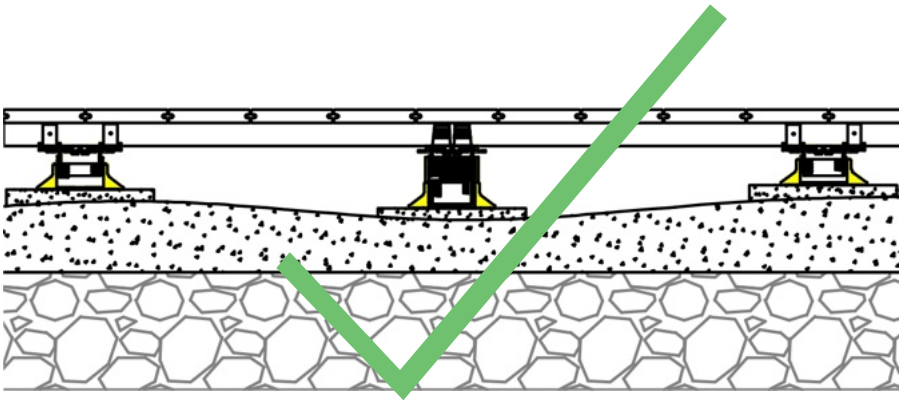
NewTechWood's products always need to be stored on flat solid surfaces. Surfaces such as dirt and grass are not sufficient as they can move over time.



NewTechWood products shown above put on a flat surface on joists, this is the correct way for storage.



NewTechWood products shown above on an uneven surface which will make the products prone to warping and distortion.



NewTechWood products shown above can be on pedestals or jacks if the surface is uneven. Consult with the pedestal or jack manufacturer before using the product to ensure its compatibility with NewTechWood's products.

12. Fasteners

i) Driving the Screw at a 90 degree

When fastening NewTechWood's products, all screws that are face fastened should always be driven in at a 90 degree angle to the decking surface. Toe 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, as shown in **Diagram A1**.

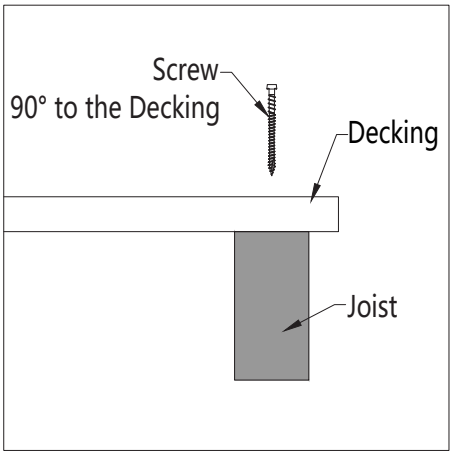


Diagram A1

Please Note:

1. The decking boards must max. overhang the ends of the joists to avoid water accumulating on the joists.
2. It's necessary to pre-drill the screw holes for face screwing the Monarch decking board. The drill bit size is 1/16" smaller then the screw thread size.

ii) No colored chalk

Use white chalk, straight boards, or string lines as templates for straight lines. **NEVER USE COLORED CHALK.** Colored chalk will permanently stain NewTechWood's products and are highly not recommended.

iii) Stainless Steel Screw

All screws that are face fixed should always be stainless steel.

vi) Fastening on a Sister Joists

All fasteners should be on their own independent joists, when two boards ends meet each other there must be a sister joist with a min 3/16" to 13/16" between the sister joists for water to go down between the joists. Excessive water buildup at the ends over long periods could result in swelling. The end of each board must sit on its joist, as shown in **Diagram A2**.

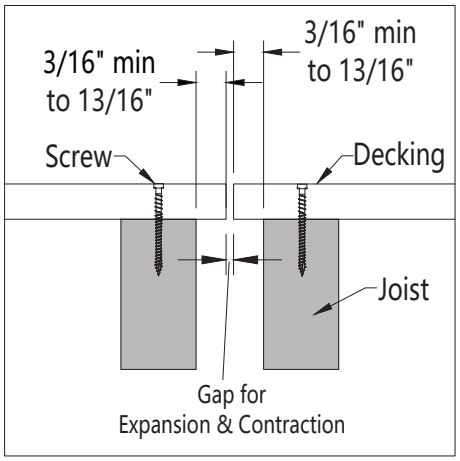


Diagram A2

v) Position of Fasteners

When face fastening always go in at least from the ends and edges of the board by 1-1/2" , as shown in **Diagram A3-1**.

Please follow **Diagram A3-3** and **Digram A3-4** to position the screws for the Monarch Decking Board to avoide splitting the board.

Please Note:

1. We recommend using our screw location template, as shown in the **Diagram A3-2** below. Please visit our website, www.newtechwood.com, to download the template. Please read carefully the paragraph (vi) below on how to use the template.
2. Please print the template with a 100% scale and check if the lenght 6-1/4" and width 3" are correct.

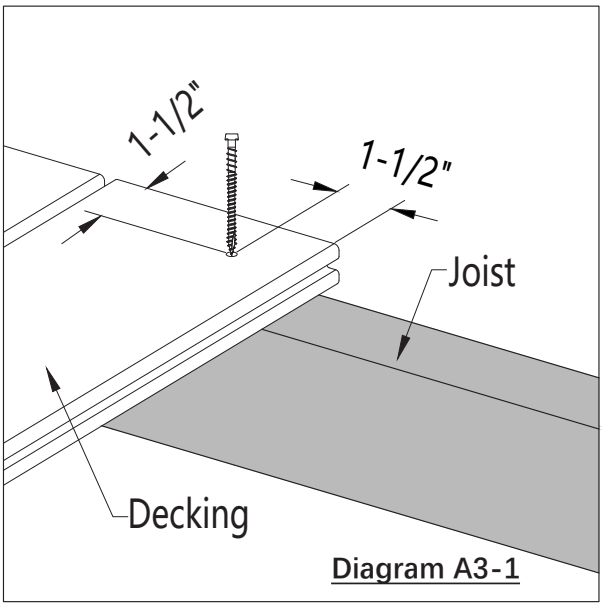
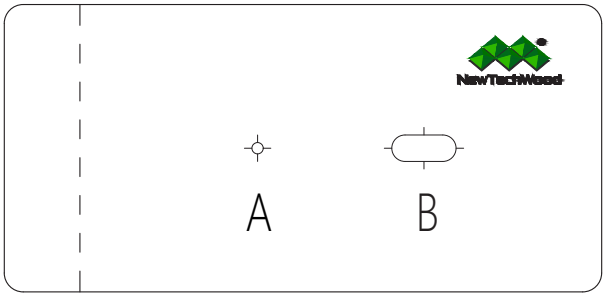


Diagram A3-1



Screw Location Template for Monarch Decking Installation

Diagram A3-2

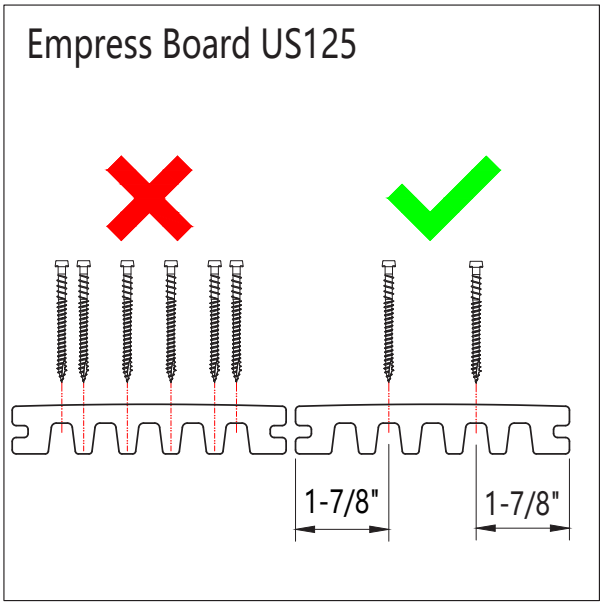


Diagram A3-3

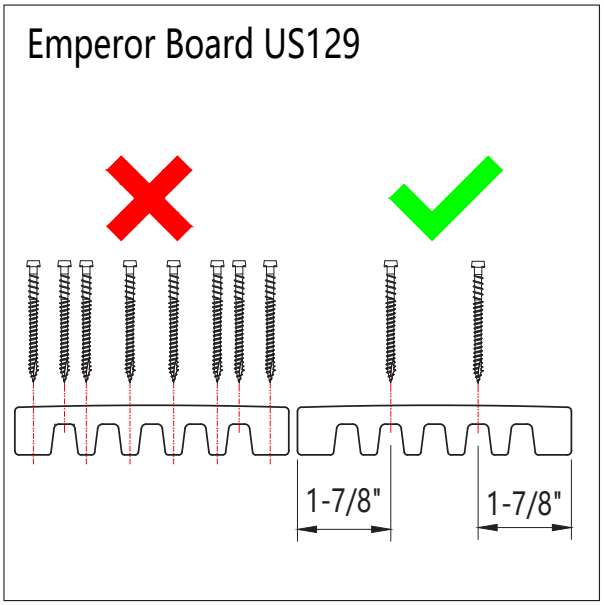


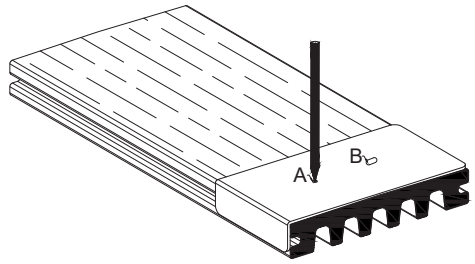
Diagram A3-4

vi) How to use the screw location template for Monarch Decking

Please Note:

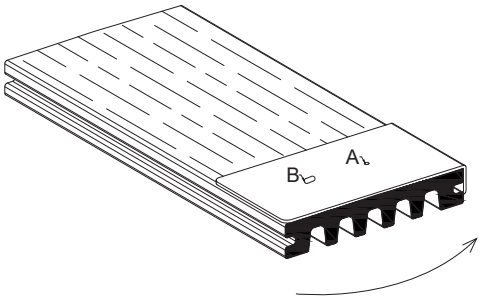
The template is only for the Monarch Decking installation., please follow the steps from the diagram below.

Step 1



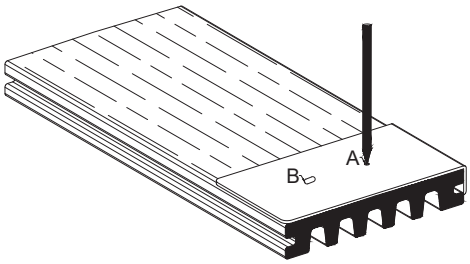
Place the template across the board and make sure the template flush to the boards edge and put a mark on hole A. The hole B is for helping to align the holes and we will not marking and screwing through that hole.

Step 2



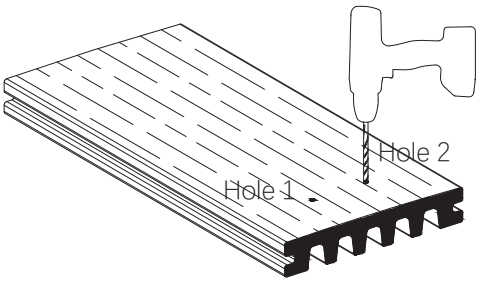
Flip the template to another side, and make sure the template flush to the boards edge.

Step 3



Shift the template until the previous marking appears inside the oval hole B then put a mark on hole A.

Step 4



Pre-drill the holes on the marks before driving the decking screws.

vii) Choose of Screws

Always use screws designated for use with composite decking material. Some screws require you to predrill. Please read the screw manual instructions before installation. 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 to use, always check first with your local home centers and hardware stores to see if they have screws that are engineered specifically for composite wood. These screws will always work and give NewTechWood's products the best looking outcome, using other screws that are not recommended for composite could potentially damage/harm the decking. If you are unsure which screw to use, contact your manufacturer for more information.

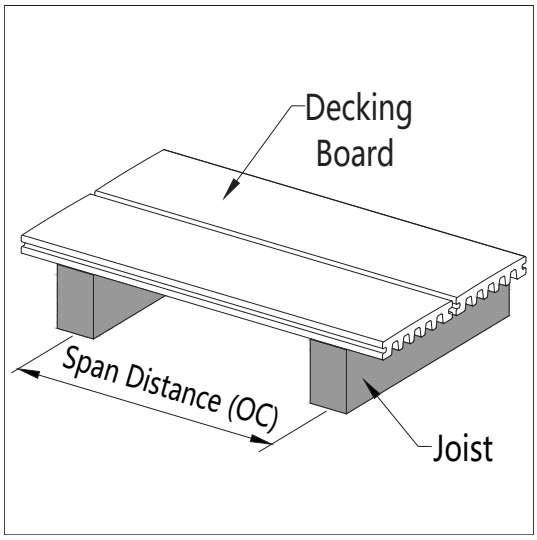
Recommend screws from other manufacturers: Cap-torx screws by Starborn Industries.

Please Note:
It's not recommended to use the Decking Plug & Screw to fasten the Monarch Decking Board.

13. Joist Span

First, determine the decking span, that is , how far apart your joists will be.

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



Maximum Decking Spans on Center-to-Center

Region	Profile	Dimensions	Residential Span	Commercial Span
North America	US125 Grooved Empress Board	5.5 x 1 inches	16 inches	Only to be used for residential
	US129 Solid Emperor Board	5.5 x 1 inches	16 inches	Only to be used for residential

Joist Spanning on Center-to-Center with Angled Decking Installations

Degree of Angle	Dimensions	Spacing
90	5.5 x 1 inches	Refer to the above tables
60	5.5 x 1 inches	2 inches less than the stated above tables
45	5.5 x 1 inches	4 inches less than the stated above tables
30	5.5 x 1 inches	1/2 the distance stated in the above tables

14. Expansion and Contraction Values

NewTechWood deck boards will experience expansion and contraction with changes in temperature. Expansion and contraction are most significant where extreme temperature changes occur. Fastening the deck planks according to the gapping requirements noted in the following table accommodates for this movement.

Length (Feet)

Installation Temperature (Farhenheit)	3	8	9	10	12	13	13	16	18	Gap (in)
32	1/16	1/8	1/8	3/16	3/16	3/16	1/4	1/4	5/16	
41	1/16	1/8	1/8	1/8	3/16	3/16	3/16	1/4	1/4	
50	1/16	1/8	1/8	1/8	1/8	1/8	3/16	3/16	3/16	
59	1/16	1/16	1/16	1/8	1/8	1/8	1/8	1/8	3/16	
68	3/64	1/16	1/16	1/16	1/16	1/16	1/8	1/8	1/8	
77	3/64	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	
86	3/64	3/64	3/64	3/64	3/64	1/16	1/16	1/16	1/16	

Please Note:
If you are still unsure of what gapping to use, contact us and we will give you the correct gapping requirements based on your environment and area.

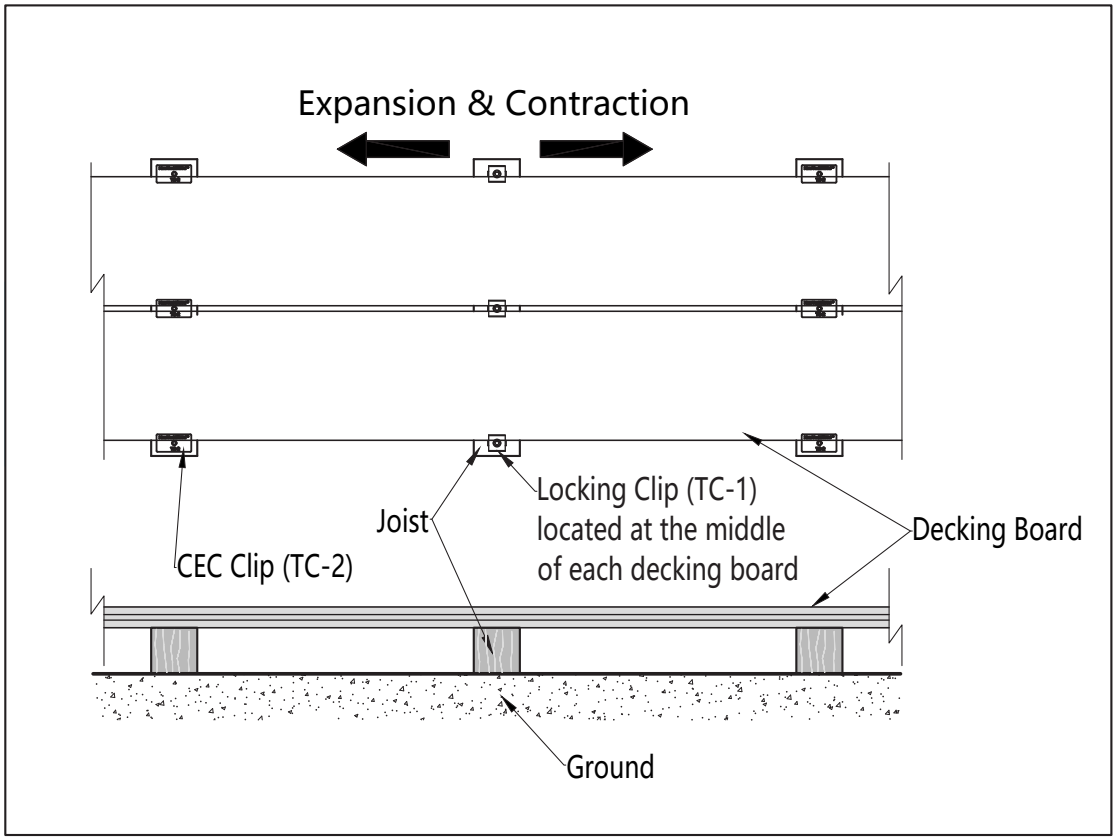
15. Locking the Decking Boards

NewTechWood deck boards must allow for expansion and contraction with changes in temperature. The decking boards must be locked at one fixed point but only one point to allow the remaining board to expand and contract freely.

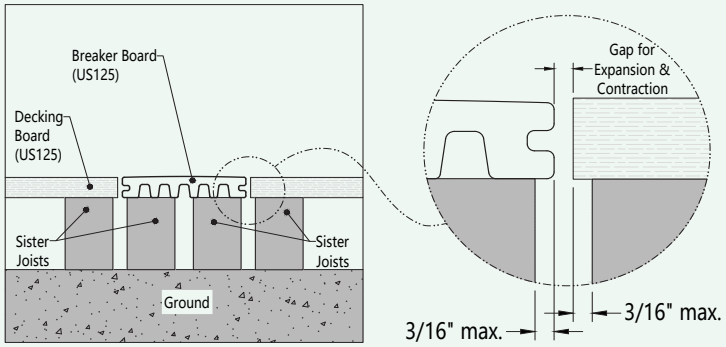
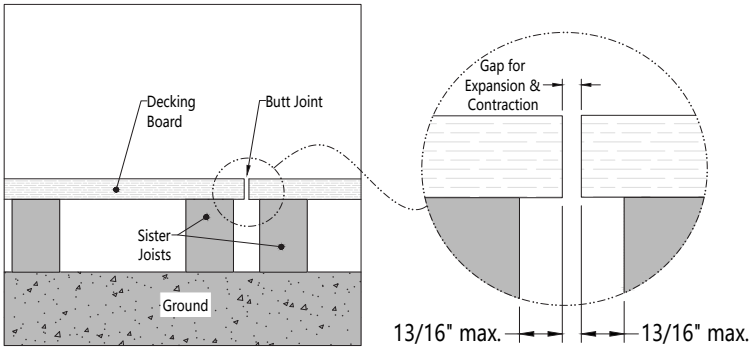
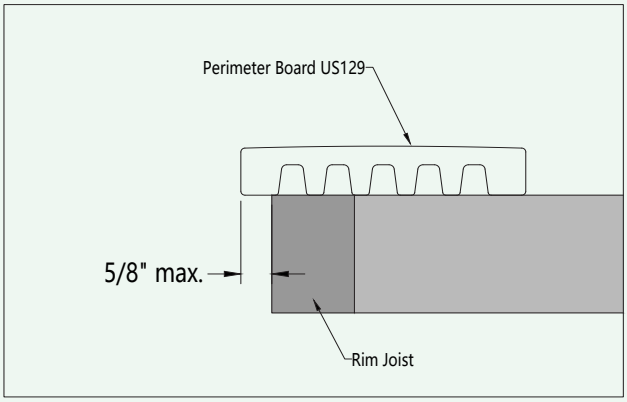
Please Note:

It is essential that USE ONLY ONE locking clip TC-1 for the Grooved Empress Board US125

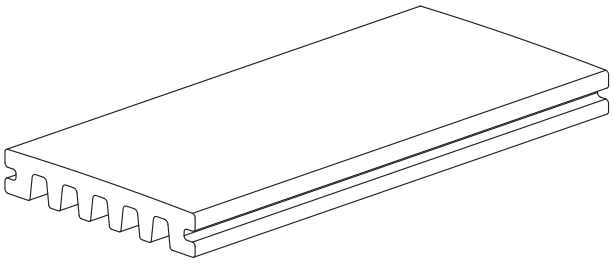
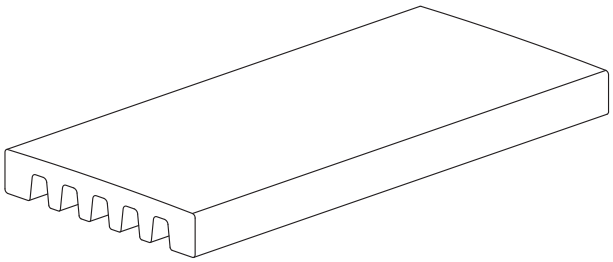
We recommend locking the decking board in the middle in one board configuration to allow for evenly expansion and contraction to take place on both ends, as shown in the Diagram below.



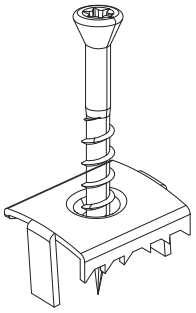
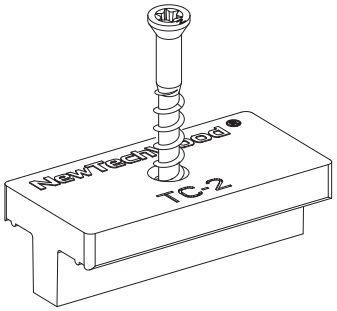
16. Maximun of Overhang

Description	Max. Overhang	Diagram
Breaker Board Sister Joist	3/16 inches	
Butt Joint Sister Joist	13/16 inches	
Perimeter Board	5/8 inches	

Monarch Decking Boards

Coding	Description	Board
US125 Grooved Empress Board	Used as the Decking Boards	
US129 Solid Emperor Board	Used as follows, 1. Perimeter Ending Boards 2. Decking Boards	

Monarch Decking Parts

Coding	Description	Diagram
TC-1 **Metal Clip**	Used as the Locking Clip	
TC-2 **Plastic Clip**	Used as the CEC Clip Controlled Expansion & Contraction	

Installation Procedure

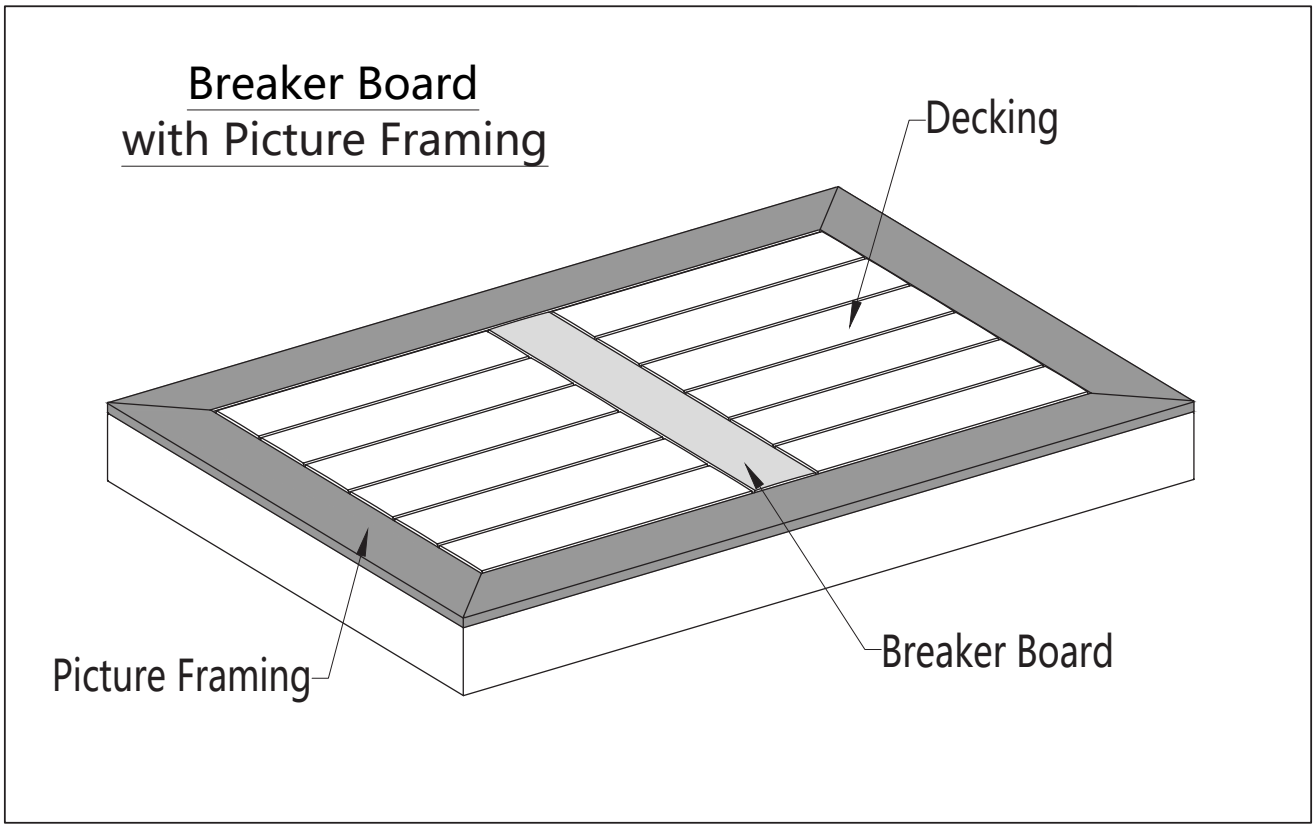
1. Framing
2. Perimeter Ending Boards Installation
3. Decking Board Installation
4. Fascia Board Installation

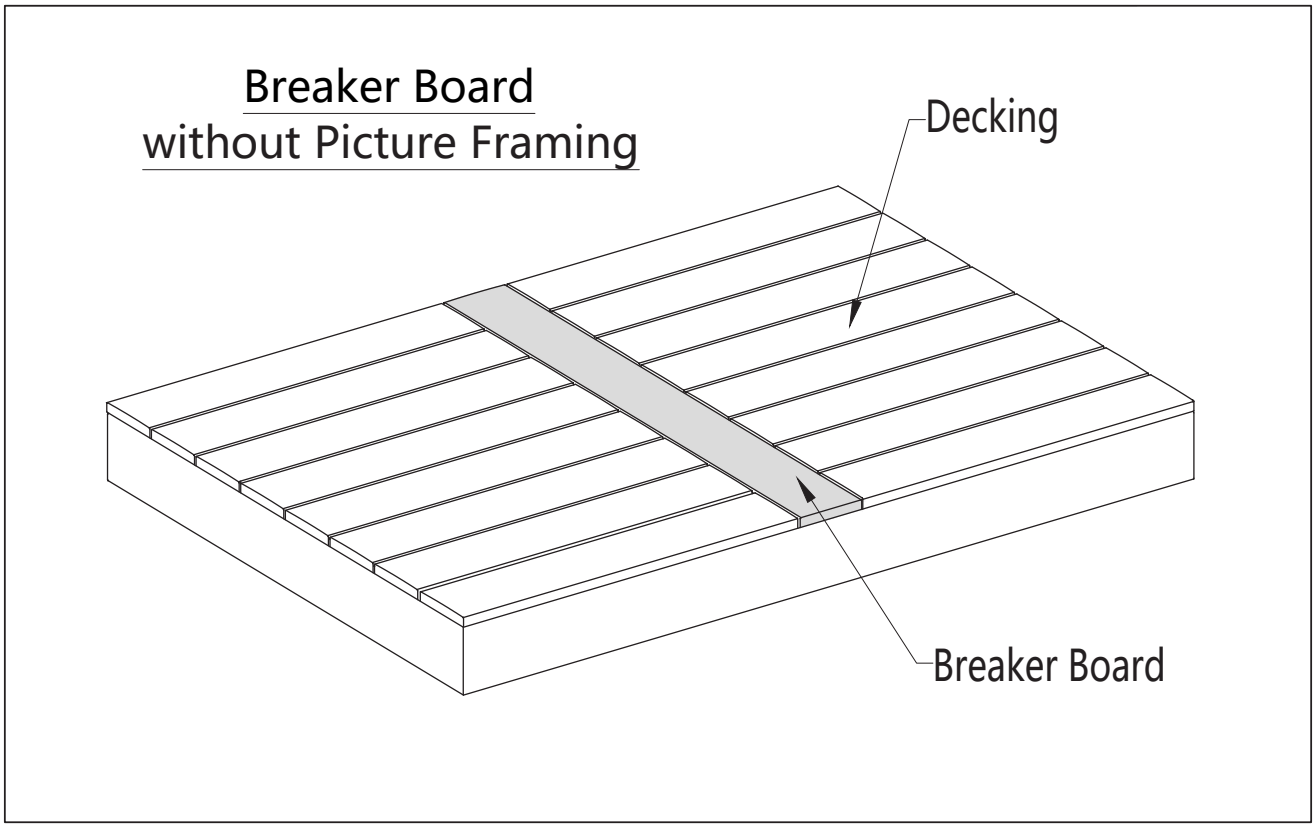
1. Framing

Measure the area planned to build the decking and make a layout drawing to design how to install your decking prior to your installation work.

Please Note:
It is recommended that you connect with your local distributor or the manufacturer for further instructions.

The below shows the recommended installation methods,
1.Breaker Boards with Picture Framing
2.Breaker Boards without Picture Framing




Breaker Board
without Picture Framing
Decking
Breaker Board

1.1 Ladder Joist Framing for the Breaker Board

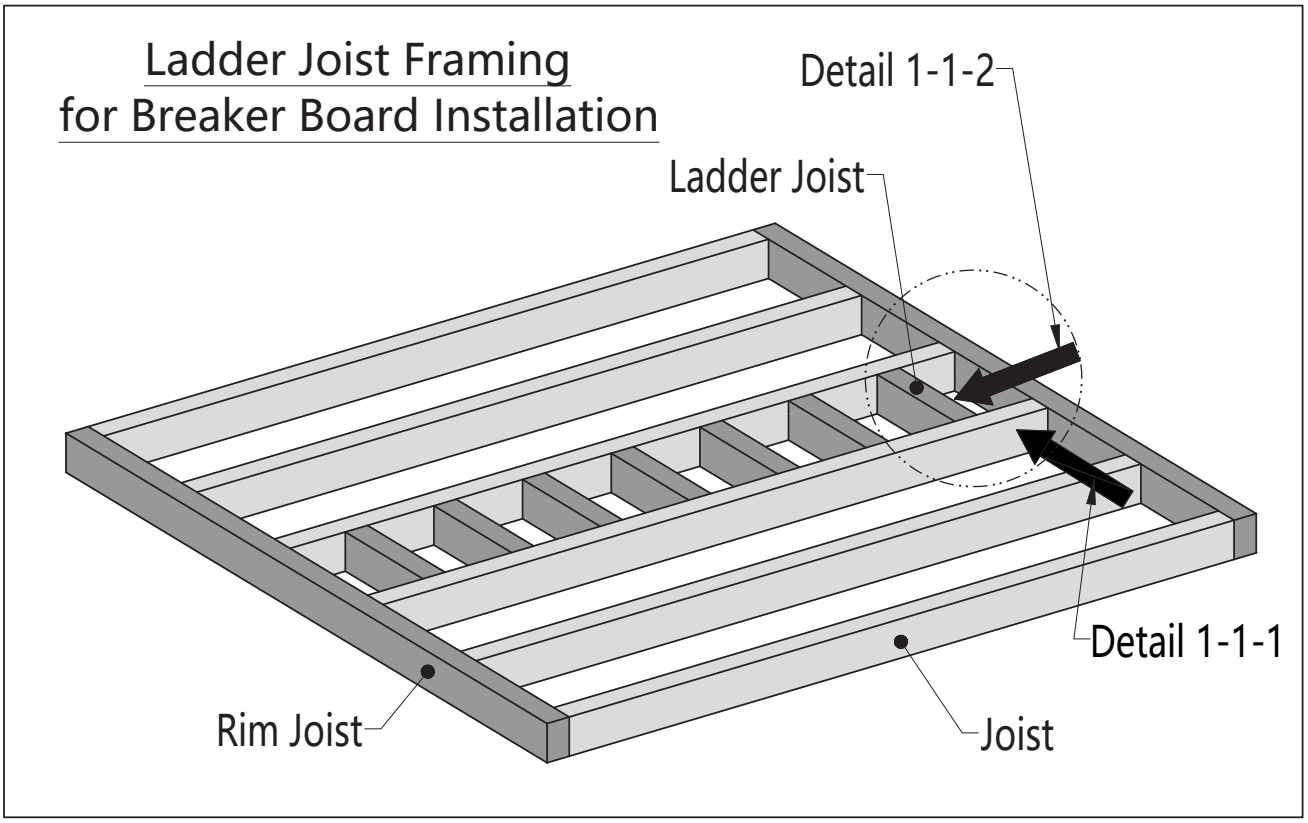
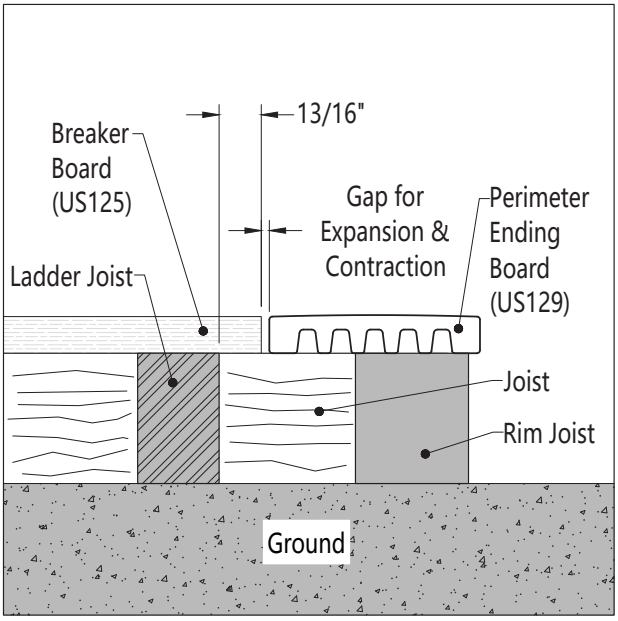
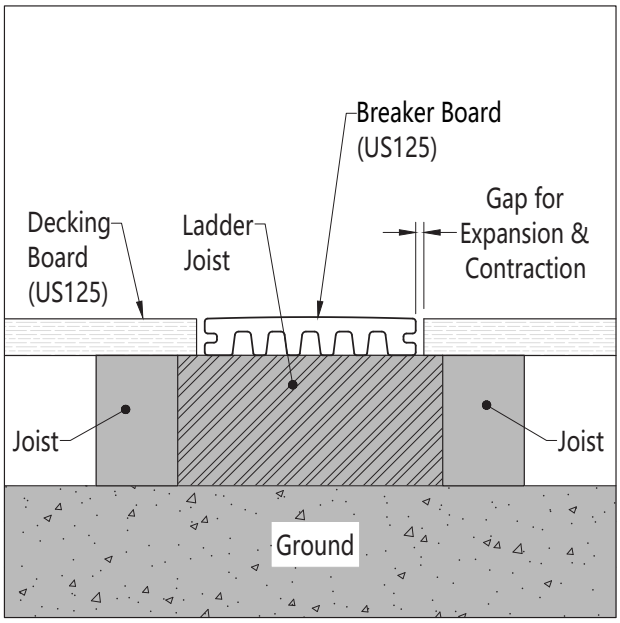


Diagram 1-1



Detail 1-1-1



Detail 1-1-2

1.2 Sister Joist Framing for the Breaker Board

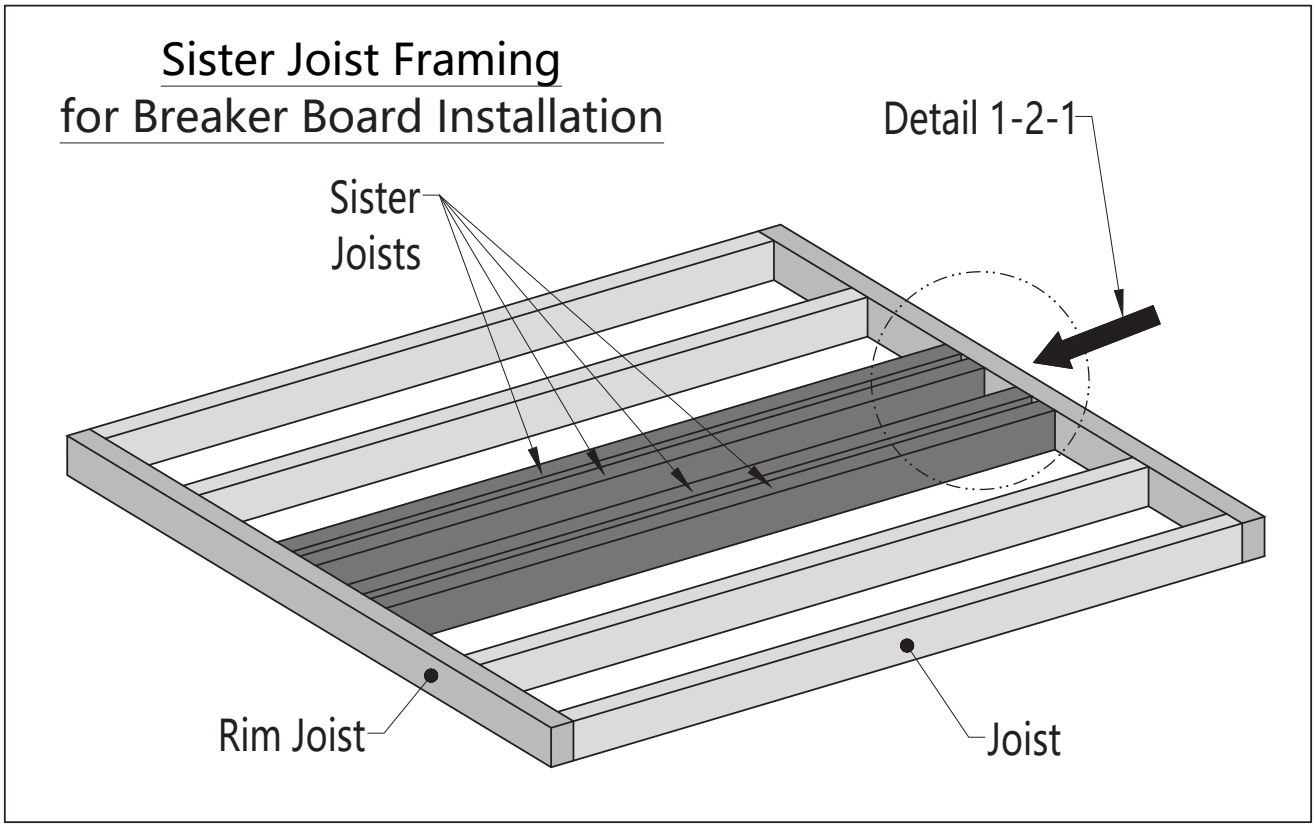
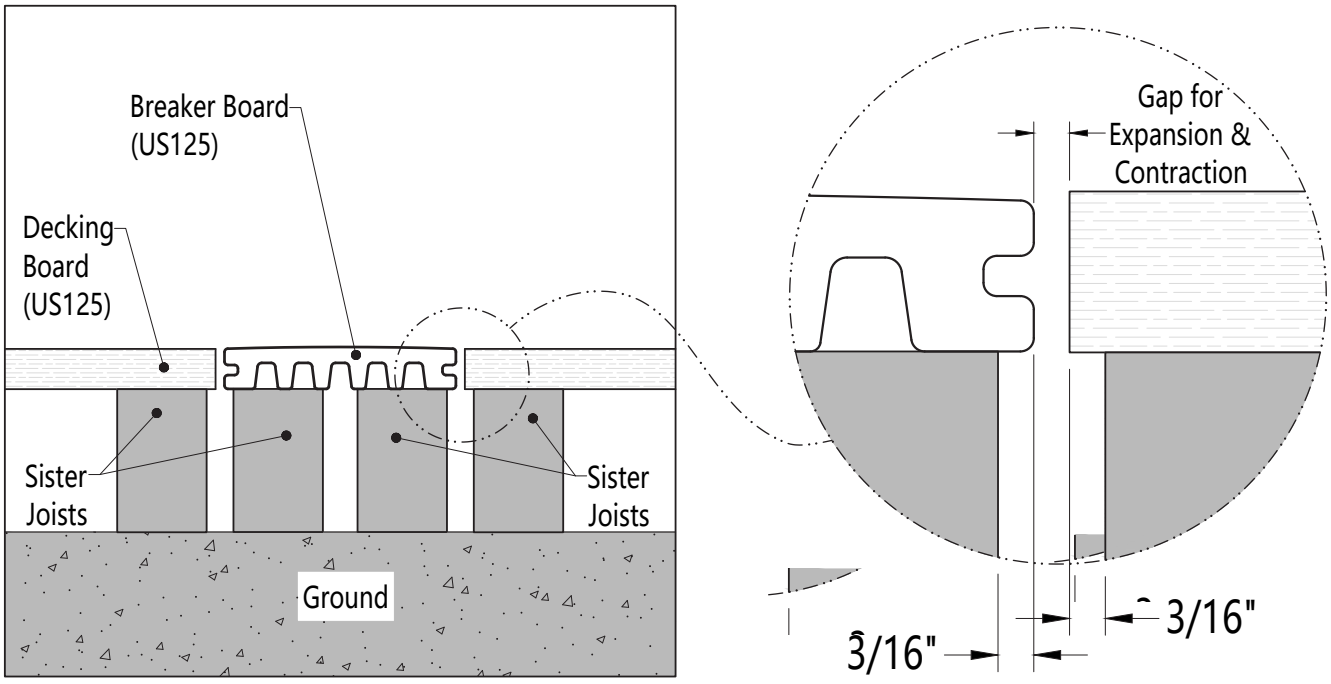


Diagram 1-2



Detail 1-2-1

1.3 Sister Joists for Butt Joint

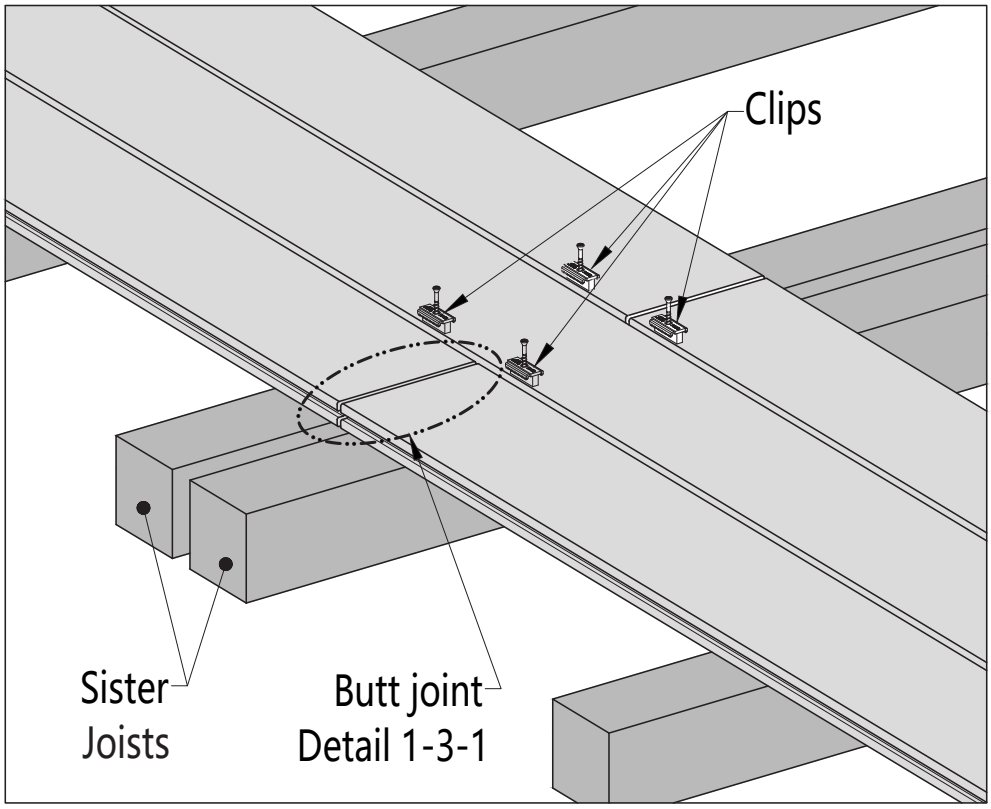
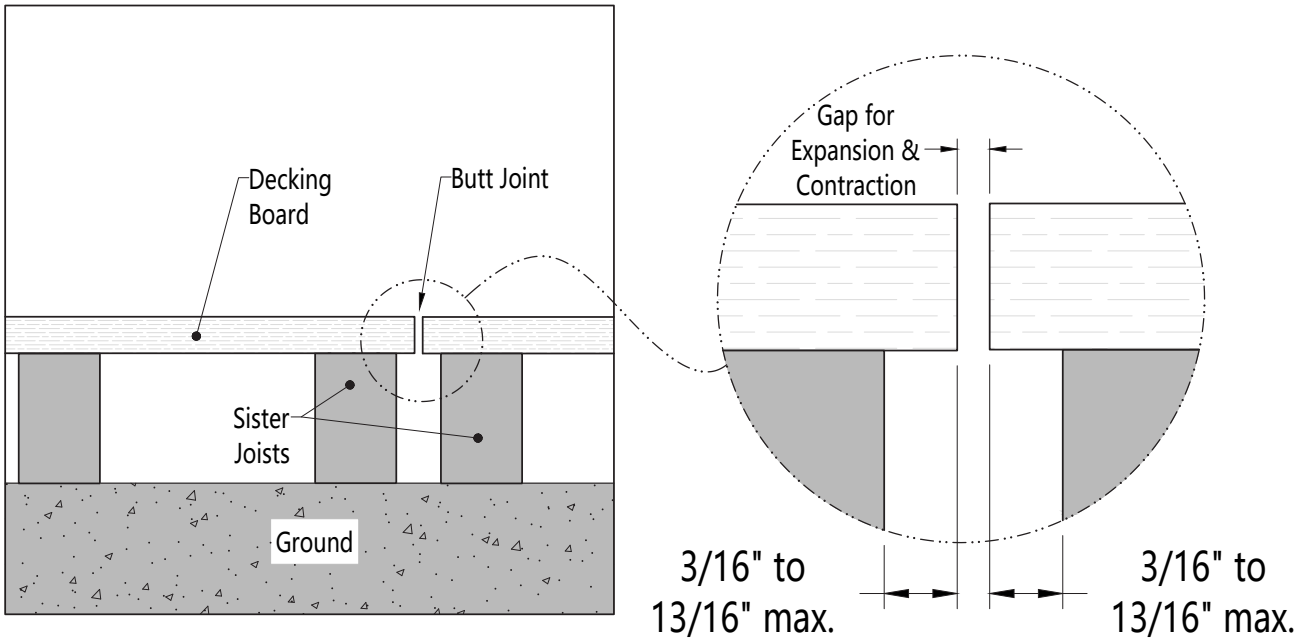
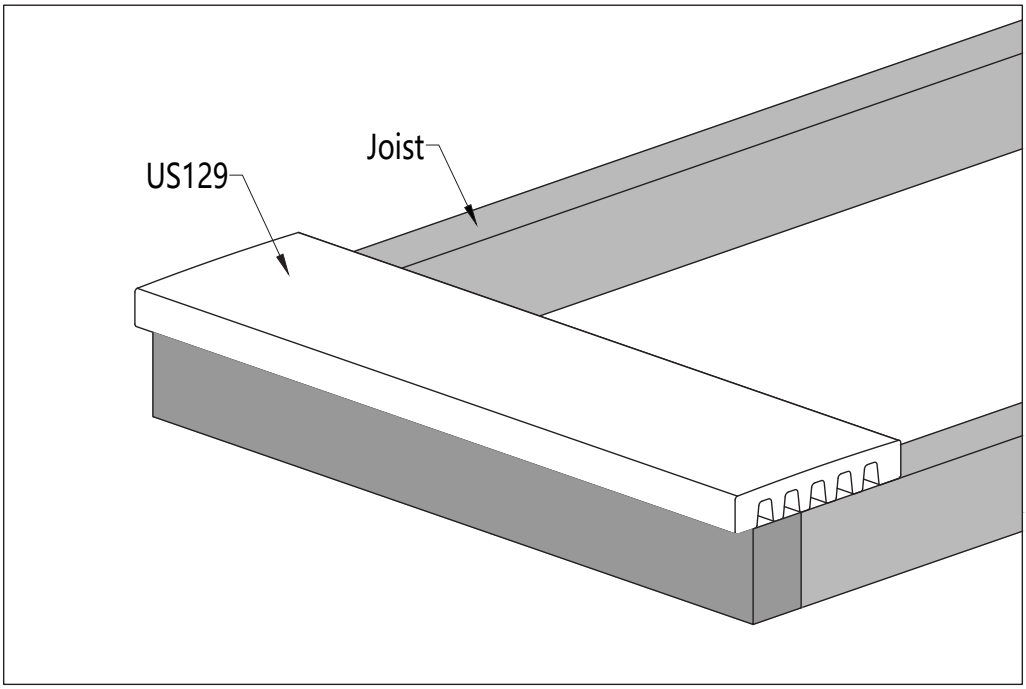


Diagram 1-3



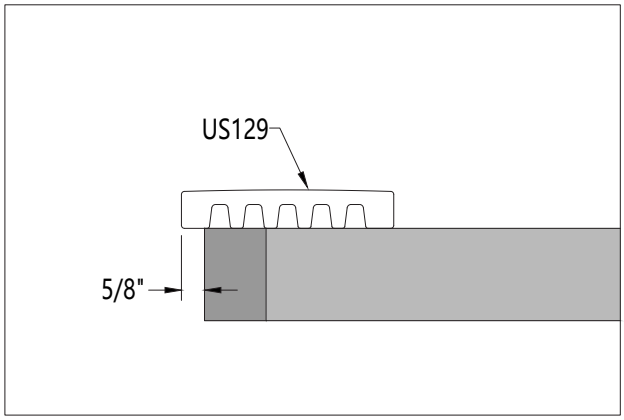
Detail 1-3-1

2. Perimeter Ending Board Installation



Step 1

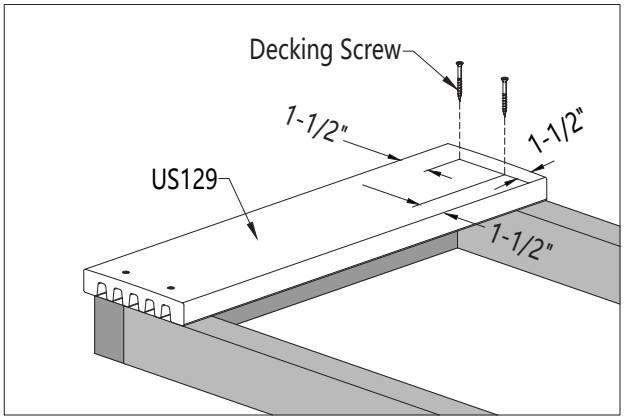
Measure and chalk the border line accroding to your decking layout design for an even and appropiate cantilever distance, 5/8".



Detail 2-1-1

Step 2

Put the Ending Board (US129) in place and fix if with screws, as shown in the diagram below.



Detail 2-1-2

3. Decking Board Installation

Step 1

Put the Second Decking Board in place against the installed Ending Board and fix it with screws, as shown in the diagram below.

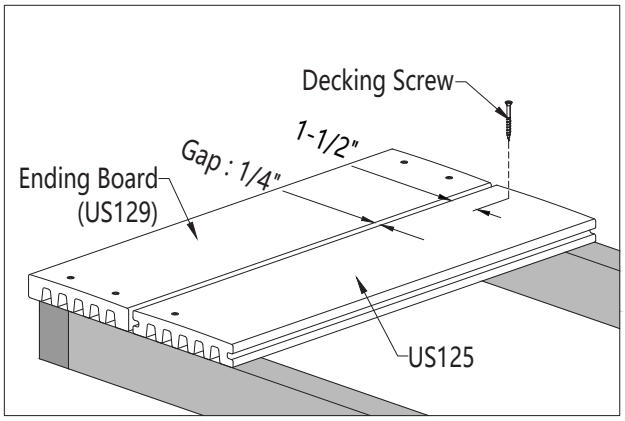


Diagram 3-1

Step 2

When you reach to install the second row decking board, insert the clips into the grooves of the board in order.

Please Note:
We recommended placing the locking clip in the middle of each board to allow for expansion and contraction on both sides evenly.

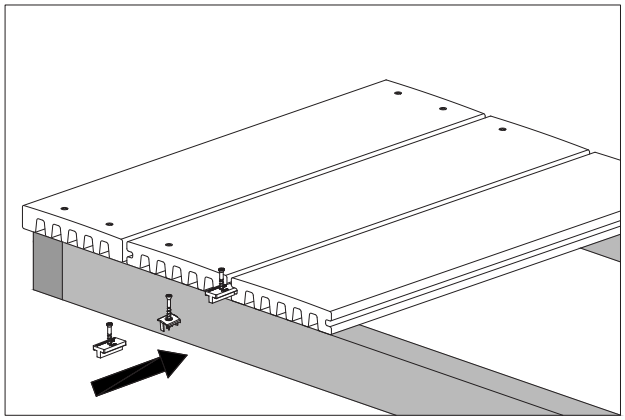


Diagram 3-2

Step 3

Put the clips in place.

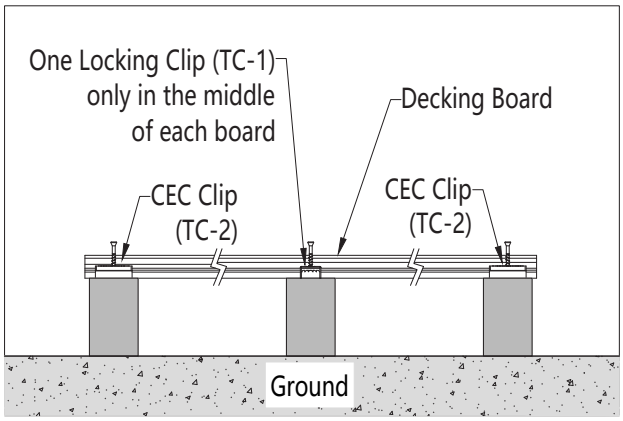


Diagram 3-3

Step 4

Drive the screws to fix the clips onto the joists securely. Complete the rest decking boards installation according to the previous installation steps.

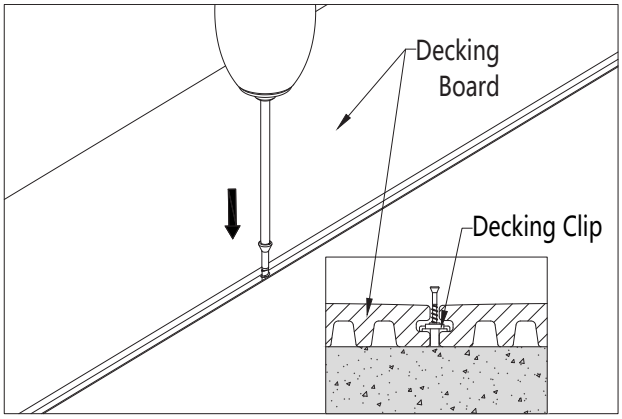


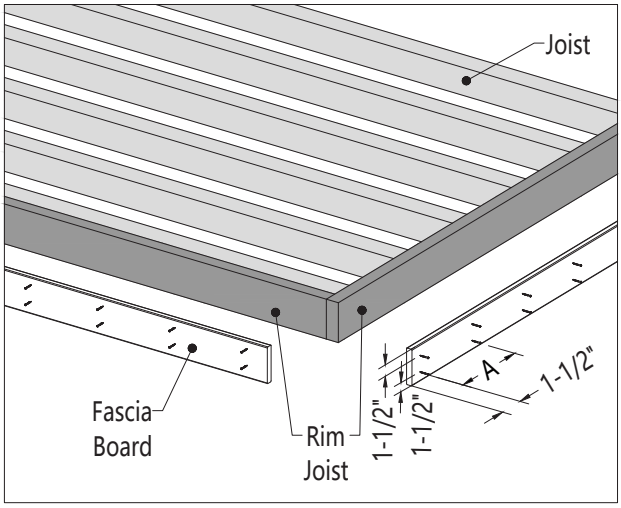
Diagram 3-4

4. Fascia Board Installation

Install the Fascia boards under the decking. Put the Fascia Boards in place and face fix it onto the Beam or Joist with screws.

For the board with a thickness of equal to or less than 3/8", use two screws every 12" on center, presented with A in the diagram below.
For the fascia board with a thickness of greater than 3/8", use two screws every 16" on center, presented with A in the diagram below.

The first screw should be 1-1/2" from the top of the fascia board, and the second screw 1-1/2" from the bottom of the fascia board, as shown in the diagram below.

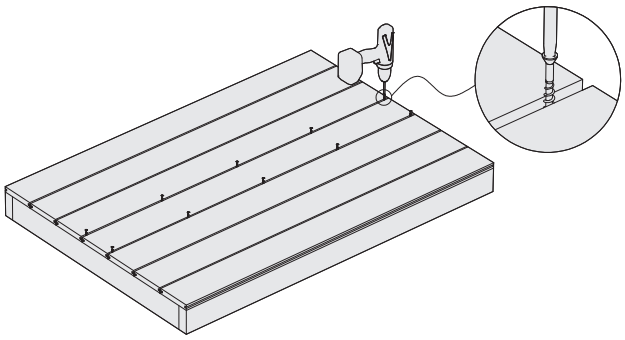


Please Note:
1. It is a must to pre-drill the screw holes with a slightly bigger drill bit to allow for expansion and contraction.
2. It is prohibited to install the fascia board onto the decking board. Aleays fix the fascia boards on to the joist or beam with screws.

5. Replace the board

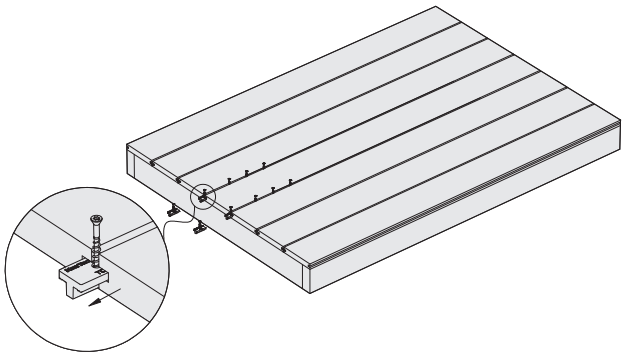
Step 1

Loose the clips for the board.



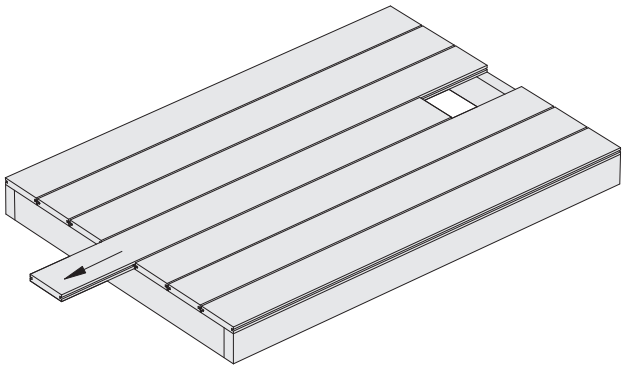
Step 2

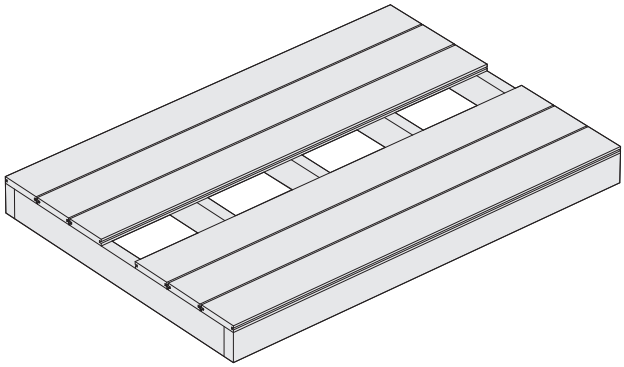
Take out the clips from the board.



Step 3

Take out the board.

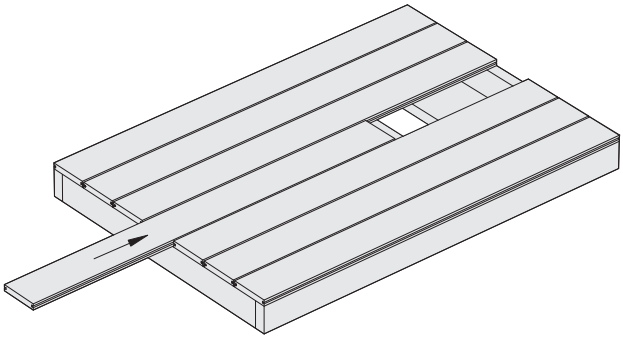




countined of 5. Replace the board

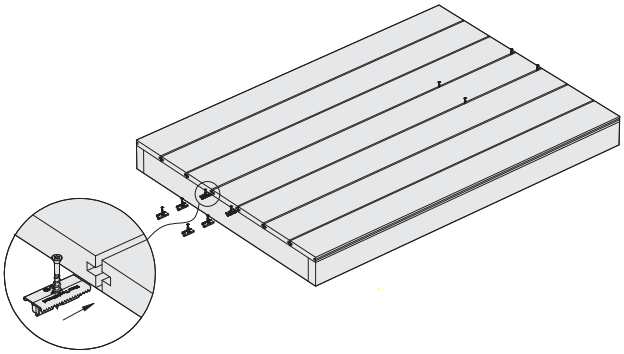
Step 4

Put the new board in place.



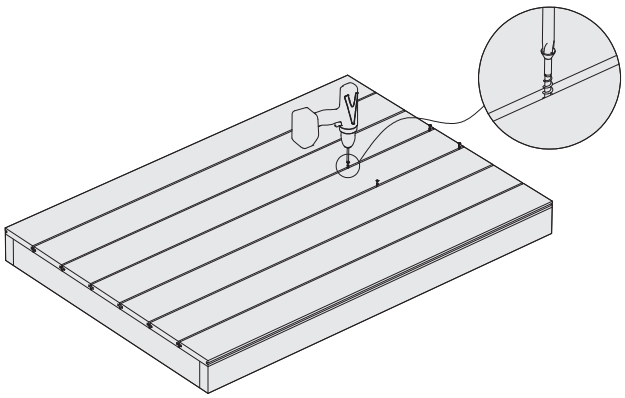
Step 5

Insert the clips into the grooves of the board in order.
Put the clips in place.



Step 6

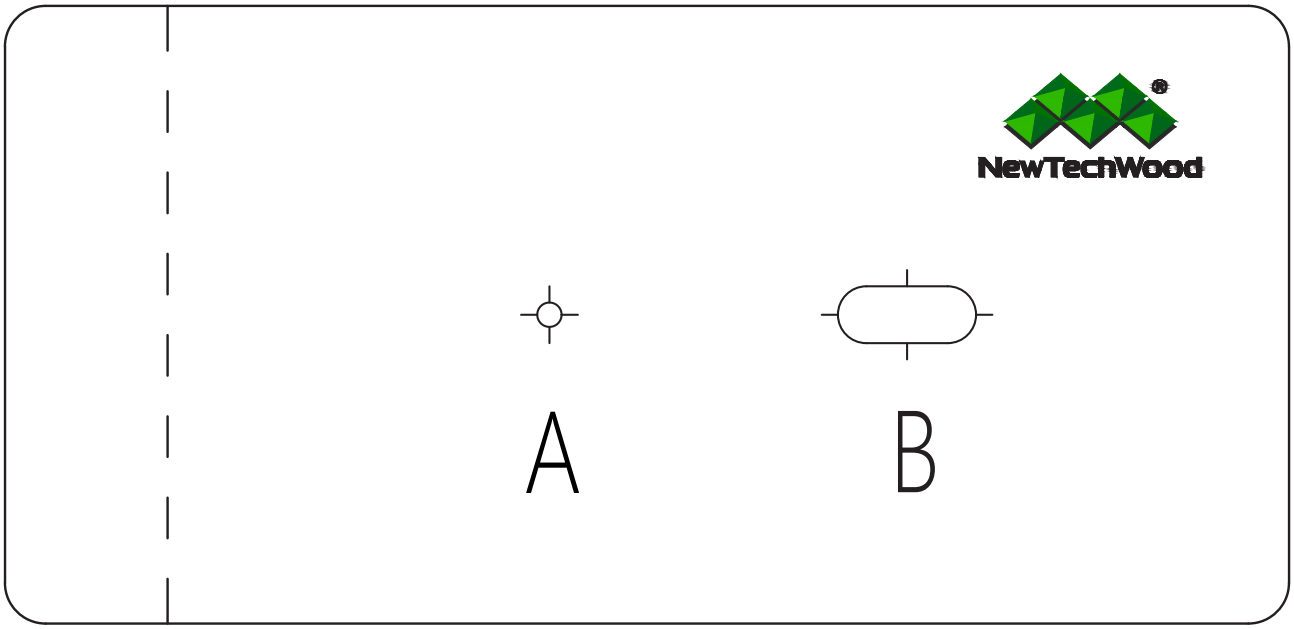
Drive the screws to fix the clips onto the joist.



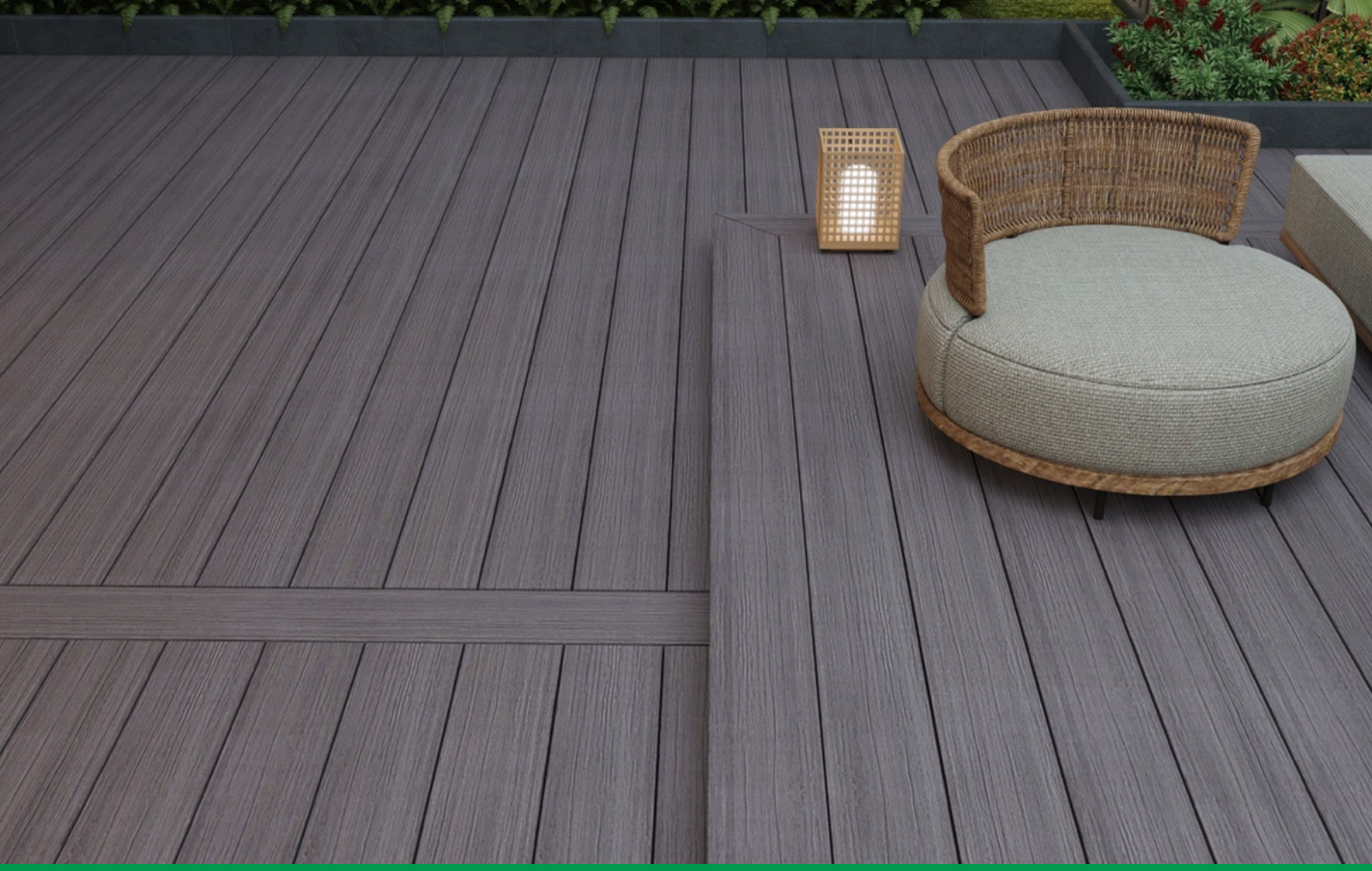
Appendix

Screw Location Template

Please Note:
Please copy this page in 100% scale. Check whether the length 6-1/4" and width 3" are correct.



Screw Location Template for Monarch Decking Installation



Monarch Decking Board Installation Guide

06.30.25 US

To obtain a copy of the most current version of this installation guide, visit us online at www.newtechwood.com

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