millboard

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Millboard Decking

Installation and user guide

EN-US

Contents

Tools & Equipment

These are the tools/equipment that you need to install Millboard decking.

Miter saw/jigsaw/handsaw

Millboard decking boards can be cut with standard wood cutting tools (i.e. miter saw, jigsaw, handsaw). We would recommend using a carbon-tipped saw blade.

Personal Protective Equipment

When handling Millboard products, it is advised to wear long sleeves and gloves. When cutting products it is advised to wear a N99 dustmask, ear defenders and safety glasses. Knee pads are recommended to be worn when installing decking.

Power drill and driver

Standard Power drill drivers can be used to install our Durafix® screws through the boards. Impact drivers are not recommended to be used when fitting Millboard decking.

Tool set

Standard carpentry tools will be needed to complete the installation, including: tape measure, a pencil, set square, planer, utility knife, surform and a drill bit set.

Level

A level is used to ensure that the subframe posts are set upright, as well as being used as a straight edge to ensure the joists/bearers are flush level with each other.

String line

A string line is used to ensure the boards are installed straight.

Other items that may be required (supplied by others):

Silicone spray (for use with the Durafix screws)
Polyurethane wood glue (for use when gluing miter joints)
Superglue (for use when gluing miter joints)
Packers (for use at the sides/end of boards, also to help the boards finish flush)

Key Points

1. **Planning -** If the installation of Millboard is taking place in conjunction with other building works, or as part of a bigger project, ensure that care is taken not to transfer substances, such as dirt and dust, on to the surface of the boards. The product should be covered or even installed after other construction work has taken place.

2. **Handling -** Be careful not to drag the boards off the pallet or over each other, as this could cause abrasion or marking on the surface.

3. **Pre-install -** Lay the boards out prior to installing, to achieve the desired mix of grain pattern and tonal variance *

4. **Working with the boards -** As Millboard is a hand-molded product, slight variance in the board dimensions should be expected. This guide details best practise when working with the product.

5. **Subframe -** The subframe should be designed and built to complement the premium quality of the boards and built to last. The incorrect 'USE CLASS' grade of lumber or poor subframe design and construction is likely to reduce the life or structural performance. Joist center spacing is critical and is prescribed within this guide

6. **Screws -** Our Durafix screws have been designed to be used with our Millboard decking. Other screws should not be used through the face of the boards. We provide very precise instructions in this guide regarding our Durafix screws, in order to achieve best possible finish for the decking. Please ensure that these instructions are followed accordingly.

7. **Board gapping -** We recommend 3⁄16" gap between the side of boards and a 1⁄16" gap at the end of the boards. Consistent board gapping should be adopted throughout the install. We recommend a 1⁄2" gap between the boards/subframe and any abutting structure (wall, house doors)

8. **Edging profiles -** We recommend that our purpose-made edgings are installed to all steps and perimeters of the deck that will be subject to impact and regular foot traffic

9. **Taking care -** If the board surface becomes dirty during installation, this should be cleaned as soon as possible using warm soapy water and a brush. Within this guidance we provide advice regarding cleaning and upkeep. If you have any further queries please contact us accordingly

10. **Limited warranty -** Millboard shall be under no liability in respect of any defect arising from improper installation caused by failure to follow our instructions as set out in this guide.

For best results, please ensure that you have read and understood our guidance prior to starting your project.

*On delivery of our products, if you find the color unacceptable or believe them to be defective in any way, please contact us.

Product Range & Usage

Range	Name	Size		Recommended use
Decking Boards	Enhanced Grain	1¼" x 5" x 141¾"		Square edged boards used for decking areas. Boards can also be used as the fascia of a deck or as a picture frame as long as it is just for aesthetical purposes.* Important note: See page 12 ref fascia
		1¼" x 6⅞" x 141¾"		
	Weathered Oak	1¼" x 7⅞" x 141¾"		
	Lasta-Grip	1¼" x 7⅞" x 141¾"		
Fascia	Fascia Board	1¼" x 5¾" x 141¾"		Fascia boards are used as a decorative cover for the subframe. They are used under the edging profiles.
Edging	Bullnose Board	1¼" x 5⅞" x 141¾"		Rigid edging boards with one bullnosed edge.
	Flexible Bullnose Edging	1¼" x 2" x 94½"		Flexible edging profiles used on the edges of decks and steps bending to a minimum radius of 48".
	Flexible Square Edging	1¼" x 2" x 94½"		

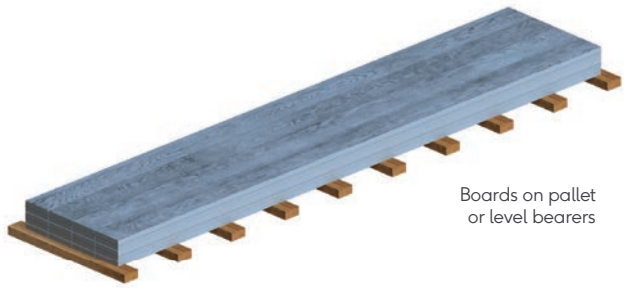
* Square edged decking boards will exhibit more wear when used on edges that will sustain impact. Edging profiles should be used in these locations

Storage and Handling

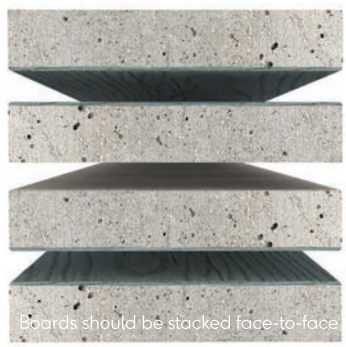
Millboard should always be stored on a flat surface or level bearers a maximum of 16" apart and stacked face-to-face, not back-to-face.

Be careful not to drag the boards off the pallet or over each other, as this could cause abrasion or marking on the surface. Damage may not be visible immediately but the Lastane layer could be adversely affected with exposure to UV, this would not be covered under the terms of our limited warranty. Only move the pallet if the boards are safely strapped to it.

Wear gloves and long sleeves when handling the boards and take care when lifting them. We recommend that two people carry the boards.



Boards on pallet or level bearers



Boards should be stacked face-to-face

Boards stacked face-to-face

Color

Millboard has been designed to replicate the natural variances of hardwood and is manufactured to have tonal variance in the color.

We go to extraordinary lengths to recreate the look of natural products and therefore intentionally add secondary toning colors. This painstaking process means that there may be variance within the same board or between boards.

Buying all the Millboard decking you need at the same time should help to ensure that the color is consistent and we would always recommend laying out the boards before installation, to create an effective, subtle blend. Antique Oak boasts more tonal variation per individual board than any of the other colours in the Millboard range.

As with all things constantly exposed to ultraviolet light and all weathers, natural weathering will occur slightly in time. This is normal for decking. On delivery if you find the color unacceptable or believe them to be defective in any way, please contact us.

Color tone may vary from batch to batch

It is best to lay boards out a day before installation, to ensure tone and grain variation is accounted for, and also to help the boards acclimatize to the project location. If there are any foreseen issues with the boards, this should be highlighted with Millboard before installing.

As with natural wood products, various grain patterns (i.e. Quarter sawn, plain sawn) will reflect the light differently so may appear a different shade to the eye. This is intentionally replicated with the Millboard products.

Different grains patterns

Pre-Install & Framework

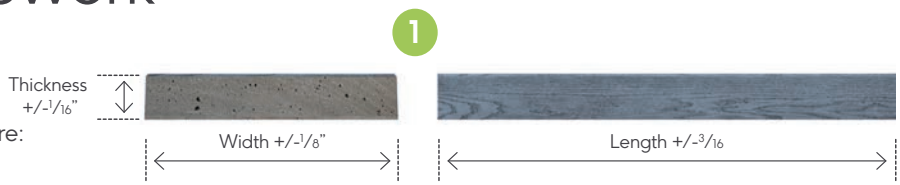
Millboard is a hand-molded product; slight variation in the board dimensions should be expected. Tolerances we deem as acceptable are: length +/- 1/16", width +/-1/8", thickness +/- 1/16". (1)

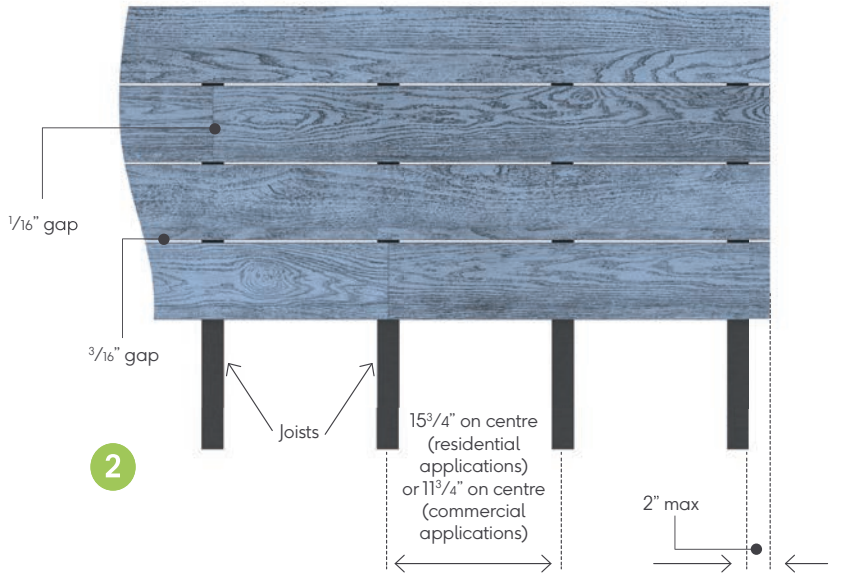
Installing boards flush: Packers may be required to shim up a board to create a flush finish between two boards.

Installing to a string line: We recommend installing boards beside a string line. The boards may not be perfectly straight when delivered, and can be straightened as they are being installed. Adjust the gaps between boards to be aligned with a string line.

Board ends: Please bear in mind that as the ends of the boards may need to be trimmed to make them square, this will reduce the length of the boards which could then affect the required joist spacing.

Decking falls: We recommend that decking is built with a fall of 1:100 (1/8" per foot) away from any buildings. This is not a regulation requirement but does help to negate pooling which in turn helps o reduce dirt retention and algae build-up, and hence reduces maintenance.



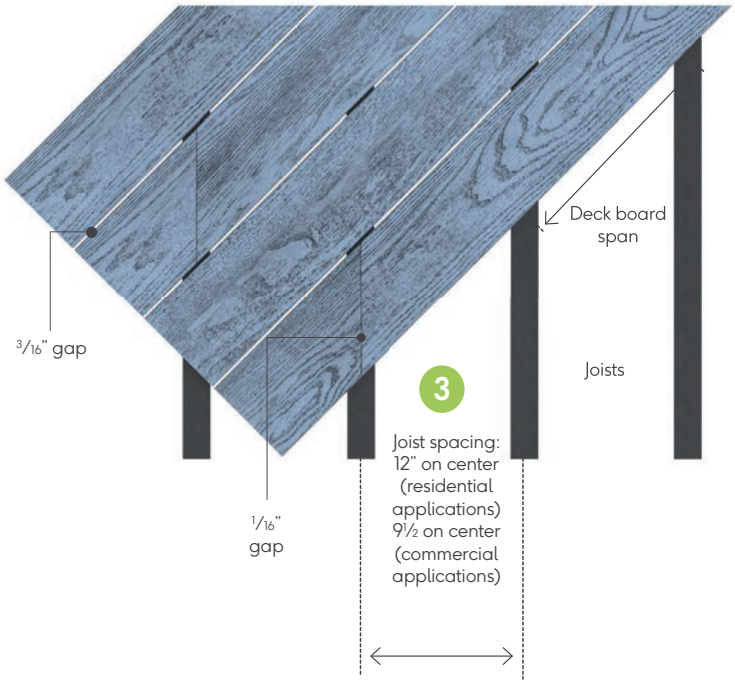


Joist centres for boards at 90°

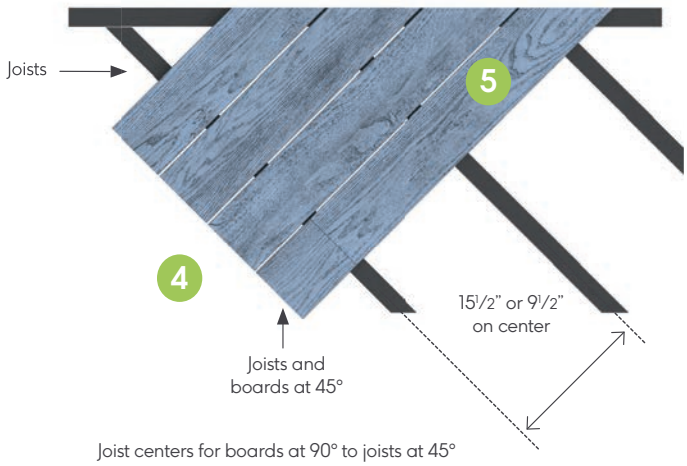
Joist spacing: Joist spacing of 15 3/4" centres is recommended for normal residential use. On commercial use, bridges, balconies, moorings, doorways and steps, we recommend 11 3/4" centres. (2)

For laying boards 45° to the joist, reduce the joist centres to 11 3/4" for residential and 9 1/2 for commercial use, (3)

Alternatively turn the joists round to be at 90° to the board direction (4) as this is less wasteful of material and time. If you need to cut Millboard down along the length, reduce the joist centres accordingly. A minimum of three joists is required for any cut boards. (5)



Joist centres for boards at 45°



Joist centers for boards at 90° to joists at 45°

Subframes

The subframe of a decking area is one of the most important parts of having a deck installed. While the subframe is generally hidden, it is crucial for the deck's longevity. Millboard decking can be installed on Plas-Pro (recycled plastic), DuoSpan (aluminum) or pressure-treated wood subframes. If lumber is used for the subframe, the relevant building codes should be followed. Use fasteners designed for subframes, and apply high-quality deck tape to the tops of joists.

More information on subframe choices can be found in our in-depth subframe guide
www.millboard.com/en-us/subframes

For more in-depth installation details on the DuoSpan or Plas-Pro please refer to our PDF installation guides and 'How to' videos on:
www.millboard.com/en-us/installation-guides

Cutting Products

Millboard products can be cut with standard wood cutting tools and machinery (i.e. miter saw, jigsaw, hand-saw). We recommend a carbon-tipped (TCT) saw blade. It also mills very cleanly with a router and can be bored or drilled with ease.

It's advisable to connect a dust extraction vacuum to any machine or power cutting tools and to wear an N99 dust mask, safety glasses, gloves and long sleeves when working with Millboard.

Make sure that the boards are adequately supported when cutting. Boards can be cut face-up or face-down

We recommend that all ends are squared off with a slight back cut of around 2-3 degrees before they're installed.

Reduced dust cutting: For situations where the creation of dust needs to be kept to a minimum then Millboard can be cut with a hand saw or by using a wet cutting saw such as a Makita 18V LXT Cordless 5 in. Wet/Dry Masonry Saw.

Disposal of Millboard material: Dispose of board off-cuts by disposing as general waste or sending to a municipal incinerator for energy replenishment. Don't burn them at home.

Miter saw with extraction

Tip:

If there is a breeze/wind when cutting the boards, locate the saw up wind so that excess dust is blown away from the operator & project. Suitable dust extraction/vacuums fitted to saws will help to reduce excessive dust.

Fastening to the Substructure

Methods of fastening Millboard decking

Use Durafix screws to fasten Millboard. They can be driven through the face of the boards or through the side using the DuoFix side-fixing guide. (6),

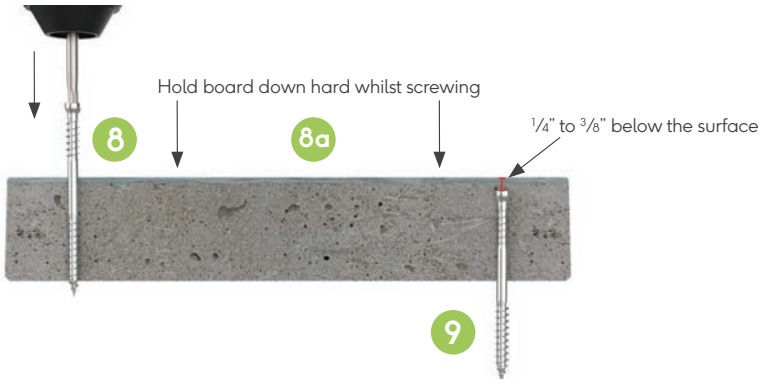
DuoFix side-fixing Guide

Duo-fix Side fastening guide: The DuoFix guide creates a 1/4" gap between boards. DuoFix should be used in accordance with the instructions on the DuoFix box. These can also be found on -
www.millboard.com/en-us/installation-guides

Using Durafix deck and fascia screws

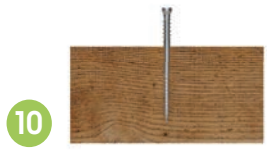
The screws should be given a liberal coating of spray silicone lubricant before use (7), When driving the screws in, push firmly down on the screw as it is driven in. Don't let the screw spin on the surface. (8)
At the same time apply pressure to hold the deck board down onto the subframe, to stop it riding up the screw (8a). Drive the screw head 1/4" to 3/8" below the surface of the board. This should leave a minimal witness mark (9).

When installing the boards through the face with the Durafix screws, there is no need to pre-drill or countersink, just drive the screw straight in. We advise using a standard drill driver with the TX15 bit provided and not an impact driver to fix the Durafix screws to the decking as this can damage the Lastane surface leaving a larger mark where the screw has entered, It can also break the drive bit and screw head, as well as impede the board from being fastened directly against the subframe.



Silicone spray on Durafix screws

Millboard decking can be installed onto lumber joists using Durafix 60mm (2 3/8") screws. (10)

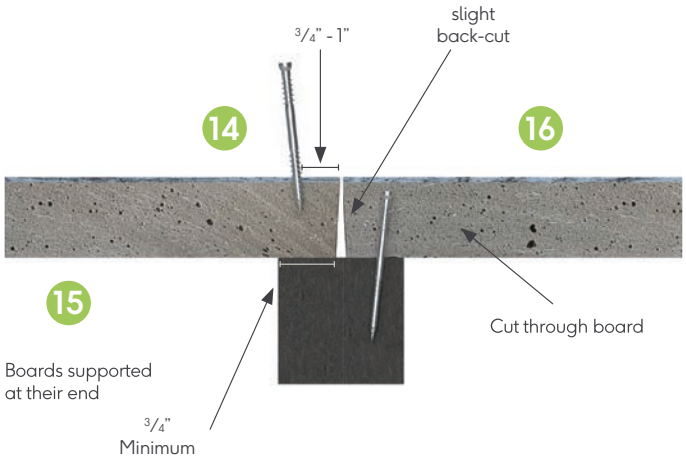


When fastening onto Plas-Pro (11) or Duospan (12), use Durafix 45mm (1 3/4") screws.

When installing fascia boards to substrates less than 1 1/8" thick, use Durafix 35mm (1 3/8") screws.

Failure to use our Durafix screws with the bit provided or not installing according to these guidelines may invalidate the warranty and affect the overall look of the deck. Two screws per board should be used where the board crosses a joist. Use three at the ends of the boards. (13)

The screws at the ends of the boards should be driven at a slight angle to prevent being too close to the end of the board (14), positioning the screws 3/4" - 1" from the ends and 3/4" minimum from the sides of the boards. Board ends should be supported by a minimum of 3/4" (15).

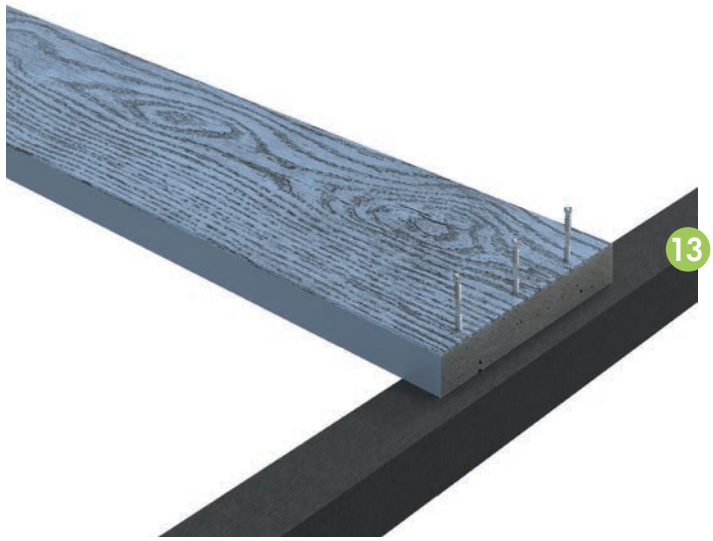


Cuts must always be positioned over the joist.
We recommend that all ends are squared off with a slight back cut of around 2-3 degrees before they're installed (16).

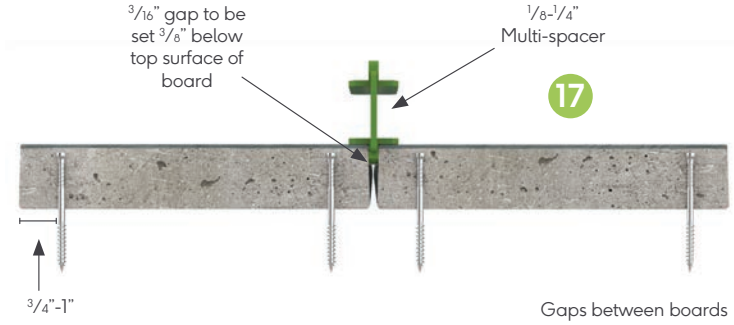
This back-cut makes it easier to adjust butt joints if required, by carefully running a handsaw along the gap to make the butt joint square and evenly gapped.

Gapping Deck boards

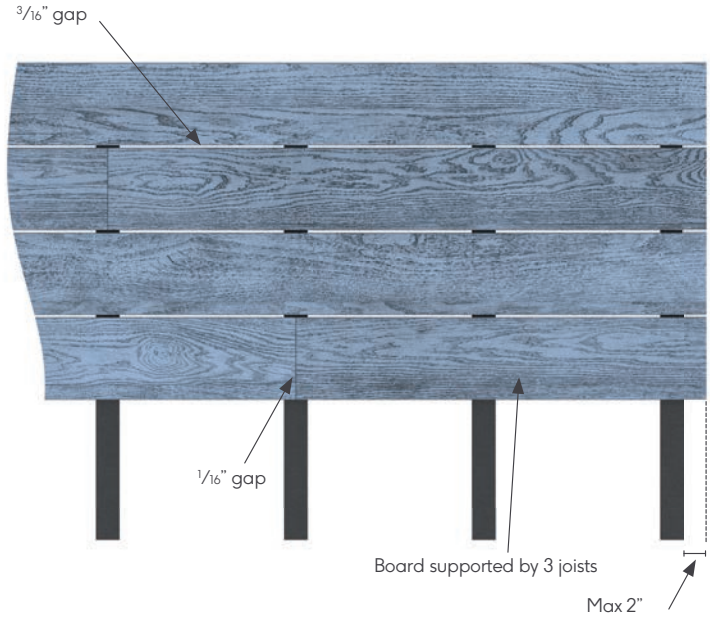
We recommend a 3/16" gap between the sides of boards and 1/16" gap at the ends on butt joints. The sides of the boards are not always square but have a varied taper, therefore the gap on the side of the board should be set 1/2" down from the top of the board to help keep the gaps consistent and the boards running straight,
The Multi-spacer (FP36P010) has been specifically designed to work with the boards and provides gap spacing of 1/8-1/4". (17).
When installing deck boards using the DuoFix Side Fastening Guide, there will be a 1/4" gap between boards.



Three screws at the board end



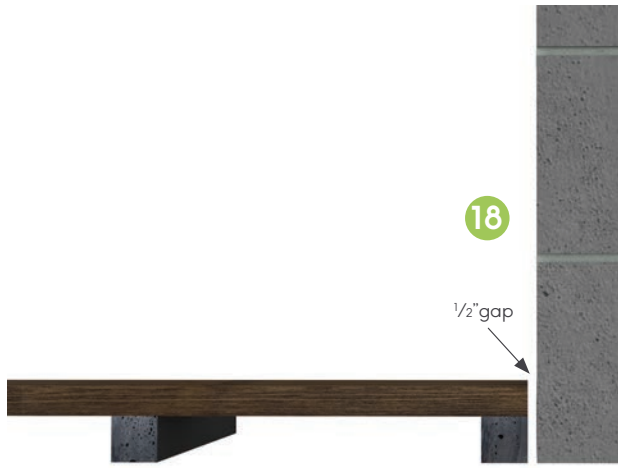
Gaps between boards



General gapping on boards

A gap between the boards smaller than 3/16" can lead to dirt build-up and can prevent drainage between the boards. It can also lead to the boards rubbing against each other causing a squeaking noise. Gaps bigger than 1/4" can result in items falling through or getting stuck, such as high heels, children's fingers, rings, keys, etc, as well as exposing more of the joist which is often not the desired look

A 1/2" gap should be left between the deck boards and any solid surface (house wall, door sill, post, garden wall, glass balustrade, etc) to facilitate drainage and allow for any movement. (18)
Whatever gap is used between the deck boards, we recommend maintaining the same gap between the deck boards and any edgings, picture frame or breaker boards, for aesthetic consistency. (19)
The flexible edgings should always be butted up tight to the deck boards for maximum support. (see page: 13)



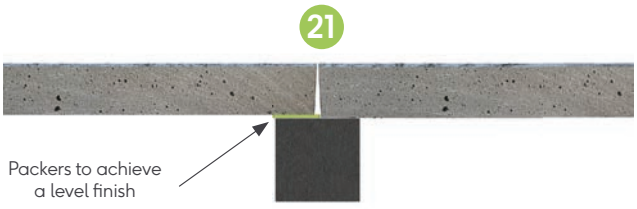
Gap between boards and solid surfaces

Keep Boards Straight

Always start installing the first row of deck boards to a string line. Fasten the first board at one end, then work along installing screws as you go, adjusting spacing or to the string line as necessary. We recommend checking the boards against a string line every 5th row, As there may be slight variation in width and thickness, packers can be used, or one board can be planed (by a maximum of 1/16"), to create a flat finish between two boards. (21)

Tip:

It is best practice to not screw the end of the deck board down until the next board has been offered up to it to check for alignment.

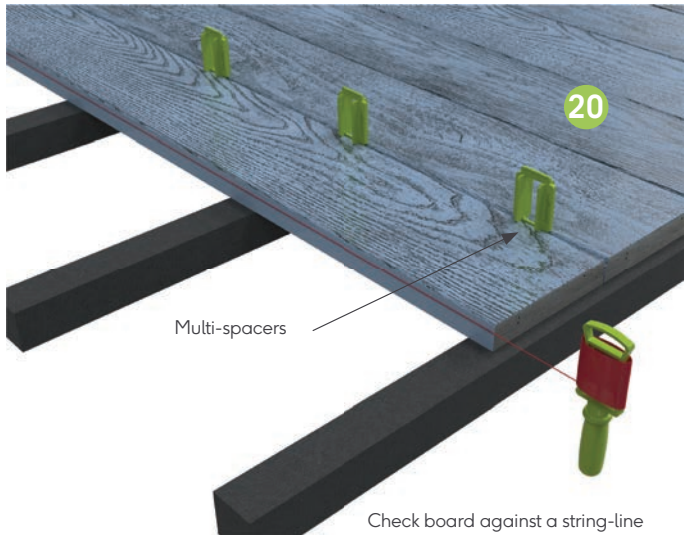


Packers under the board

Gap around the edge

Tip:

When installing decking over large areas with straight runs, it is sometimes easiest to carefully measure and install every 5th row of boards to a string-line. Then, infill between these with 4 rows of boards, using the multi-spacers, ensure consistent gapping before installing all 4 rows at once.



Check board against a string-line

Deck Edging & Fascia

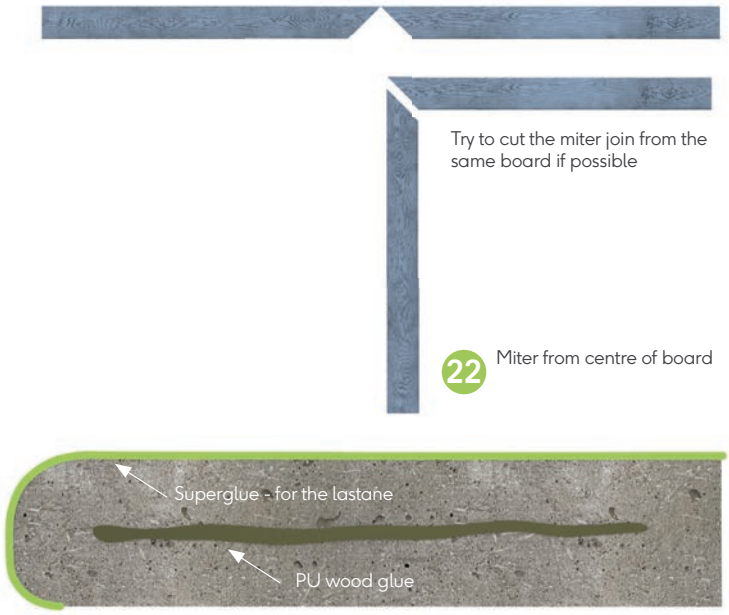
We recommend that our purpose-made edgings are fitted to all steps and perimeters of the deck rather than using a standard deck board. Where the deck edge is likely to sustain impact or wear, such as a step, we do not recommend using a standard square edge deck board.

Any visible cuts need to be coated with Millboard Touch-up Coating. This coating should not be used on the surface of the boards. The edging profiles should sit over the top of any fascia boards used to cover the subframe. (23)

When mitering the edging or fascia profiles for a corner, it is best practice where possible to cut the miter from the same board to account for natural variance in grain and sizing. (22)

Gluing miters

All mitered corners must be glued together. We recommend using a thin bead of gel PU wood glue on the core material and a continuous bead of super glue for the Lastane.



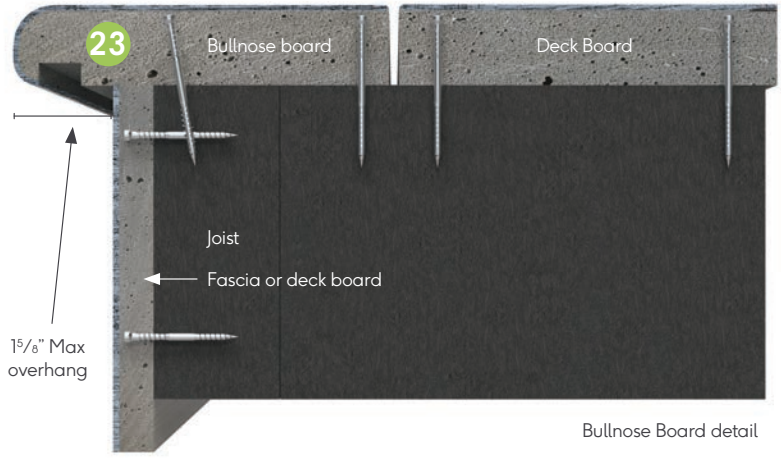
Location of glue on miters

Fascia Boards

Fascia boards are used under the decking or edging profiles to cover the sides of the subframe. They will bend to a radius of 48" (at 68°F) and need to be installed with two Durafix 35mm (1 3/8") screws at 12" on center.

Joining fascia boards

When two fascia boards meet along the deck, these should be jointed together on a 22.5° angle back cut so that one piece slides under the other. The upward facing cut should be painted with touch-up coating prior to being installed and should not be glued.
If a fascia joint finishes on a curve, the boards should be joined on a 45° angle and glued together prior to being fitted in place. Take care to support the glued joint while bending it.



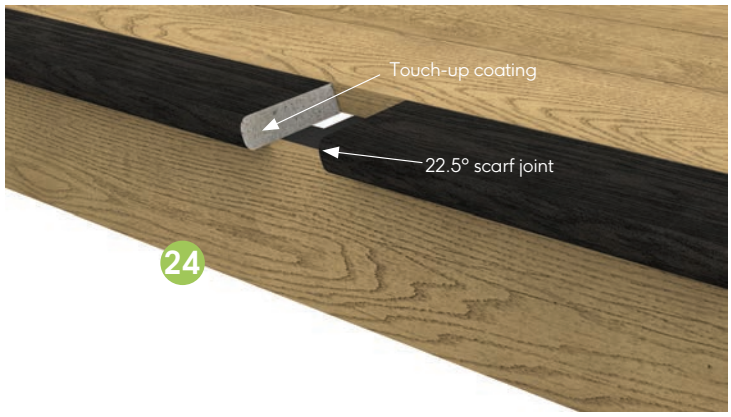
Bullnose Board detail

Bullnose Board Edging

The Bullnose Board is a 5 7/8" wide edging with a bullnosed front edge. It is a rigid product used for straight runs on edges of decks, steps and seating. The maximum overhang of the Bullnose board is 1 5/8" from the front of the fascia. Both the standard deck boards (1 1/4" thick) and the thinner fascia board (5/8"thick) can be used as a fascia under this product. The maximum size of cut-out for LED lighting under this board should be 5/8" x 3/8" and should be a minimum of 7/16" from the front of the board edge. (23).

Bullnose Board butt joints

These boards would normally be fully supported along their entire length but can span up to 16" on center and should be installed with two Durafix screws every 12". When two Bullnose Boards come together along the deck, these should be joined together on a 22.5° scarf joint so that one piece slides over the other. The upward facing cut should be painted with touch-up coating prior to being installed and should not be glued. (24)



Bullnose Board or Fascia Joint

Flexible Edgings

The Flexible edgings are a 2" wide profile with either a bullnose round or square edge. Use these profiles to add curved details to deck edges, steps and seating edges.

They bend to a 48" radius (at 68°F) and need to be fully supported by a joist a minimum of 1" along their entire length, with a maximum overhang of 3/8" from the front of the fascia. (25).

Top Tip:

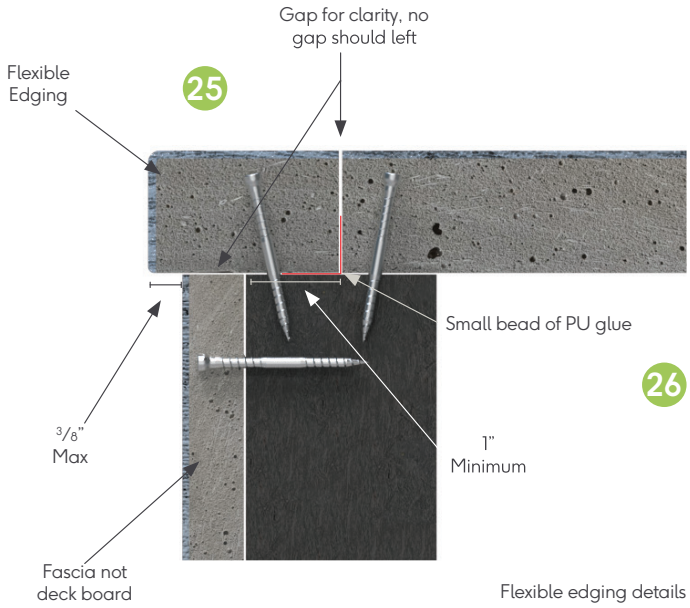
Install the fascia board slightly higher than the joist and plane down to the joist to create a full flat seat for the edging to sit on.

When installing the flexible edging, start from the end with a double screw point and work along, screwing at 6"-8" intervals as you go. Some screw holes may be partially visible on the flexible edgings.

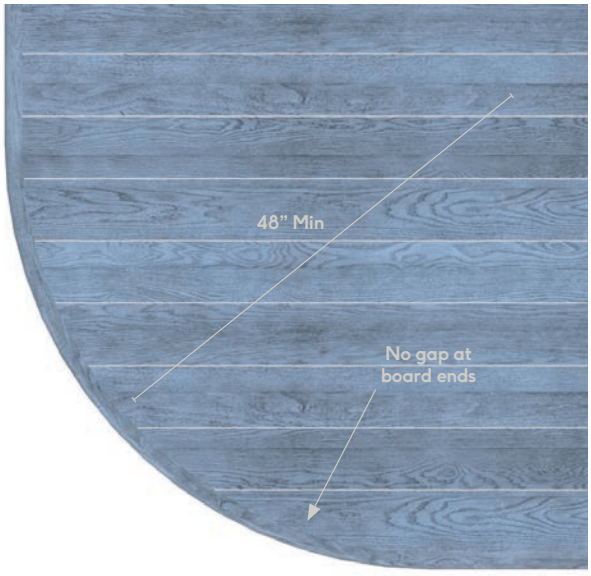
Top Tip:

Make sure you use plenty of silicone spray on the screws and keep the downward pressure on the screws for as long as you are driving it in, until the screw head has gone at least 3/8" below the surface.

The flexible edging should sit tight up against to the deck board, to give it maximum support. Apply a small bead of PU glue at the back before screwing the flexible edging in place. (26).



Flexible edging details

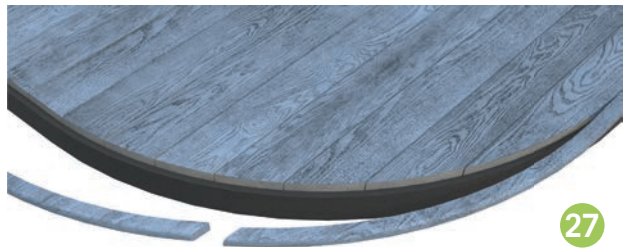


Edging used around a radius

Flexible Edging Joints

If possible, try to make sure that the joins on flexible edging don't start or finish on a curve, If the radius of the curve is bigger than a full length of edging then pre-glue enough lengths together to run around the curve in one piece. (27).

When joining two lengths of 2" edging around a curve, it is best to join them on a 45° angle so one fits behind the other. Glue this joint with superglue and hold together for 10-15 seconds.
Then continue to screw the flexible edging around the curve.



Taking care of your Millboard

If the board surface becomes dirty during installation, this should be cleaned as soon as possible using warm soapy water (dishwashing liquid) and a brush.

Clean your decking when required to remove leaves and general dirt particles.
Protect the boards from any surrounding construction work, especially if there are silicone renders being applied. If possible try to complete all rendering at least 2 weeks before decking installation as migration off the walls from rain can still wash down dust onto the deck and stick to the surface release agent on the new boards. Overspray from painting can also mark the surface of the boards. Stubborn marks may be removed with a range of different cleaners depending on the mark. Please contact us for more information at **(651) 346-3068.**

Pressure washers can be used carefully on Millboard decking for cleaning and rinsing.
We recommend:

- A PSI no greater than 2,000 should be used, with a 40 to 60 degree spread fan tip
- The head should always be kept around 12" away from the surface
- Please note that using pressure washers may increase the chance of screw holes becoming more visible
- Direct, prolonged and intense contact could damage the surface of the boards

Frequently Asked Questions

Where can I use Millboard decking?

Millboard decking is extremely versatile and can be used in practically every outdoor space (subject to building control). Create decks, siding, balconies, roof gardens, boardwalks, bridges, pontoons, seating, steps, planters and more. Millboard can be used as the decorative face for most outdoor designs, as long as it is fastened to a structural element.

Does it expand or contract?

As Millboard is made from a resin mineral composite, it is stable in comparison to wood or composites based on wood. The amount of movement that is acceptable is up to 0.2%. We recommend a 3/16" gap between the sides of boards and a 1/16" gap between the ends of boards. A 1/2mm gap should be left between the boards and any solid surface to aid drainage.

Why do my boards have water puddling on the surface?

Surface water will always be more prevalent on Millboard due to it being made from a non-porous composition. Laying the boards to a slight fall away from a building will help to drain the water off the surface, though it will not drain all of the water off the boards. Adhere to relevant gapping in this guide to assist drainage, the boards have a cupping tolerance of 1/16". Surface water can be taken off the surface of the boards with a brush or large squeegee. Frost or ice can be removed by spreading white salt across the board surface.

My boards have just been laid and have a slight oily/shiny finish?

As the boards are a molded product we use a release agent in the manufacturing process. When the boards are first delivered this release agent is still on the surface. This may result in the boards looking like they have a shiny or waxed surface or have small particles of dirt and water puddling. This release agent will come off the surface within 6-8 weeks due to natural weathering.

This process can be accelerated by cleaning the boards with warm soapy water and a stiff brush after installation.

Can you use it for load bearing applications (i.e. structural)?

It is not recommended to use Millboard decking in structural applications. Millboard decking would need to be fastened to a structural frame, either made from DuoSpan, Plas-Pro or lumber.

Does Millboard decking get hot in the sun?

As with all composite products, the surface of the boards tends to be hotter than wood when exposed to direct sunlight. Darker colors particularly will feel hotter and may be uncomfortable to walk on in bare feet. Under direct sunlight and high temperature, footwear may be necessary Special caution should be taken when using decking in areas near heat/UV reflective glass, or around pools

What tolerances should be allowed?

There will always be a slight variance in the board's dimensions due to the fact that we mold from natural oak, and due to the pressure of the molding process. Despite this, we calibrate the boards to maintain as consistent a profile as possible. The manufacturing tolerances are: Width: ± 1/8". Length: ± 1/16". Thickness: ± 1/16". The dimensions of the Weathered Oak style may vary more between molds due to the fact that they are molded from timeworn oak with minimal changes to the dimensions. When working with the boards, packers may be required to create a flush finish between two boards.

What screws should be used to attach Millboard decking?

Following extensive trials, we recommend and supply Durafix stainless steel screws, designed specifically for Millboard - this is a requirement of our limited warranty. There's no need to pre-drill or countersink Millboard decking, the unique Lastane material coating flexes back over the screw-heads, leaving a minimal witness mark. This may be more visible on the lighter colors.

Can I use a standard board as an edging piece?

Yes you can, only where the edge is merely aesthetic, such as a balcony edge, if this is your preferred finishing option. However, where the edge is likely to sustain impact, such as a step, we do not recommend using a standard board. Our edging boards have been specifically designed to withstand the knocks and scrapes associated with step edges and other associated applications. In high footfall areas or areas needed contrasting edges, it may be necessary to add metal edging to the edges of the area.

Will heat sources affect my decking boards?

Where heat sources are in prolonged proximity to the boards, the board surface may become affected. We would recommend keeping any heat source 3' away from the board surface. Non-combustible materials should be used in these areas. If using a barbeque, grill or fire pit, sit it on a stone or masonry slab. The slabbed area needs to extend about 3' outside the heat-source. Any embers or burning material needs to be removed immediately to prevent any damage or lasting marks to the Millboard surface. Patio heaters or infra red heaters are not known to affect the boards.

Does Millboard decking come with a warranty?

Yes. Millboard provides a Residential 25 year Limited Warranty or a Commercial 10/12 year Limited Warranty on decking products, to provide customers with piece of mind. Register your warranty at www.millboard.com/en-us/limited-structural-warranty-registration

Something else?

For any other technical, installation or care questions:

- Visit www.millboard.com
- Call our Technical Team at (651) 346-3068
- Email us at inquiries@millboard.com

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