

ShadowDeck™

Nail Free Timber Decking System

ShadowDeck™ Installation Guide



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www.ShadowDeck.co.nz

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Proudly made
in New Zealand

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Disclaimer

This installation guide is only a recommendation only. Please consult your local council and the building code for exact specifications.

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ShadowDeck™ Product Range

ShadowDeck™ Fasteners

A box of ShadowDeck™ Fasteners contains:

- 250 x ShadowDeck™ Fasteners
- 280 x SPAX stainless steel 6g x 50mm torx head, self-drilling screws
- 25 x Butt-End joints
- 1 x T-20 torx head bit

Note: One box will fasten 12 square metres using 140mm wide decking or 10 square metres using 90mm wide decking with a 400mm joist span

ShadowDeck™ Product Range

- ShadowDeck™ Deck Wrench (Essential tool)
- ShadowDeck™ 12mm House2deck Spacers
- ShadowDeck™ Decking Oil (Commercial Grade)
- ShadowDeck™ Anti-Slip Coating
- ShadowDeck™ Picture Frame T Shaped Fastener
- ShadowDeck™ 80mm Butt-Joint Double Screw Fastener
- ShadowDeck™ 100mm Butt-Joint Biscuit for 90° & 45° cuts

Note: Top up packs are available in 25's, 50's & 100's

ShadowDeck™ Custom Timber Profiles

- ShadowDeck™ Dome Decking 140x21mm
- ShadowDeck™ Picture Frame Profile 140x21mm
- ShadowDeck™ Bull Nose Profile 137x21mm
- ShadowDeck™ Fascia Board 180x19mm

ShadowDeck™ Installation Guide

Welcome to ShadowDeck™ New Zealand's leading nail free timber decking system.

Congratulations on your decision to install a ShadowDeck™. This installation guide will help you to achieve the ultimate finish the ShadowDeck™ way.

Please note that this is only a guide as all decks are different. However this should provide a useful reference tool when installing your ShadowDeck™. Please take your time to review the relevant information for installing and maintaining your ShadowDeck™.

What is a ShadowDeck™ ?

ShadowDeck™ is a decking system which uses pre-grooved timber and a hidden fastener to create a nail free finish. This system allows the timber to expand and contract with the seasons which helps to prevent timber from twisting and splitting. In effect it allows the deck to breath.

Benefits of a ShadowDeck™

- Unbeatable finish every time
- No more popped nails... barefoot friendly
- Smarter looking, longer lasting, deck surface
- DIY friendly, stronger, safer & faster to install
- Helps prevent timber from splitting and twisting
- New Zealand's only BRANZ appraised Hidden Deck Fastener
- Lets your timber deck expand and contract with the seasons
- ShadowDeck™ timber has a dome profile which helps to shed water & prevent cupping
- ShadowDeck™ timber is factory-oiled on all sides to add durability and stability

Planning your ShadowDeck™

It is important to take some time to plan the layout of your ShadowDeck™. For best results we recommend running the finished decking boards parallel to the house. This highlights your decking timber and hides the 3mm gap.

To work out the decking board requirement, see the formula below.

Width x Length = m²

$$3\text{m} \times 4\text{m} = 12\text{m}^2$$

Linear Metres in One Square Metre

1m /board width + 3mm gap = Linear Metres +10% wastage

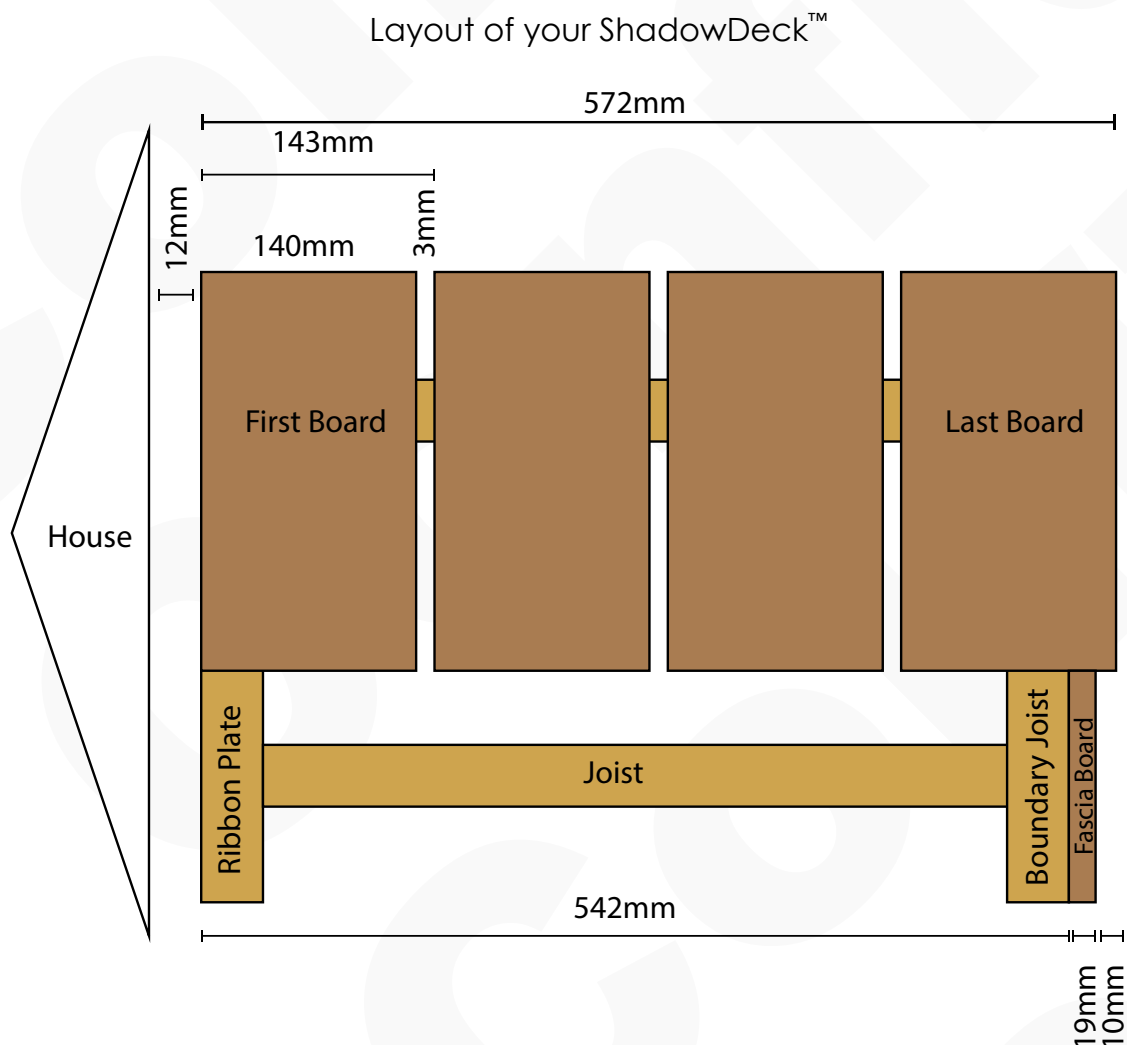
$$1000/143 = 7.7(7 \times 1.1)$$

Total Linear Metres

$$\text{m}^2 \times 7.7 = L$$

$$12\text{m}^2 \times 7.7 = 92.4\text{m}^2$$

Note: You will also need to account for ShadowDeck™ 180x19mm fascia boards around the outside of your decking

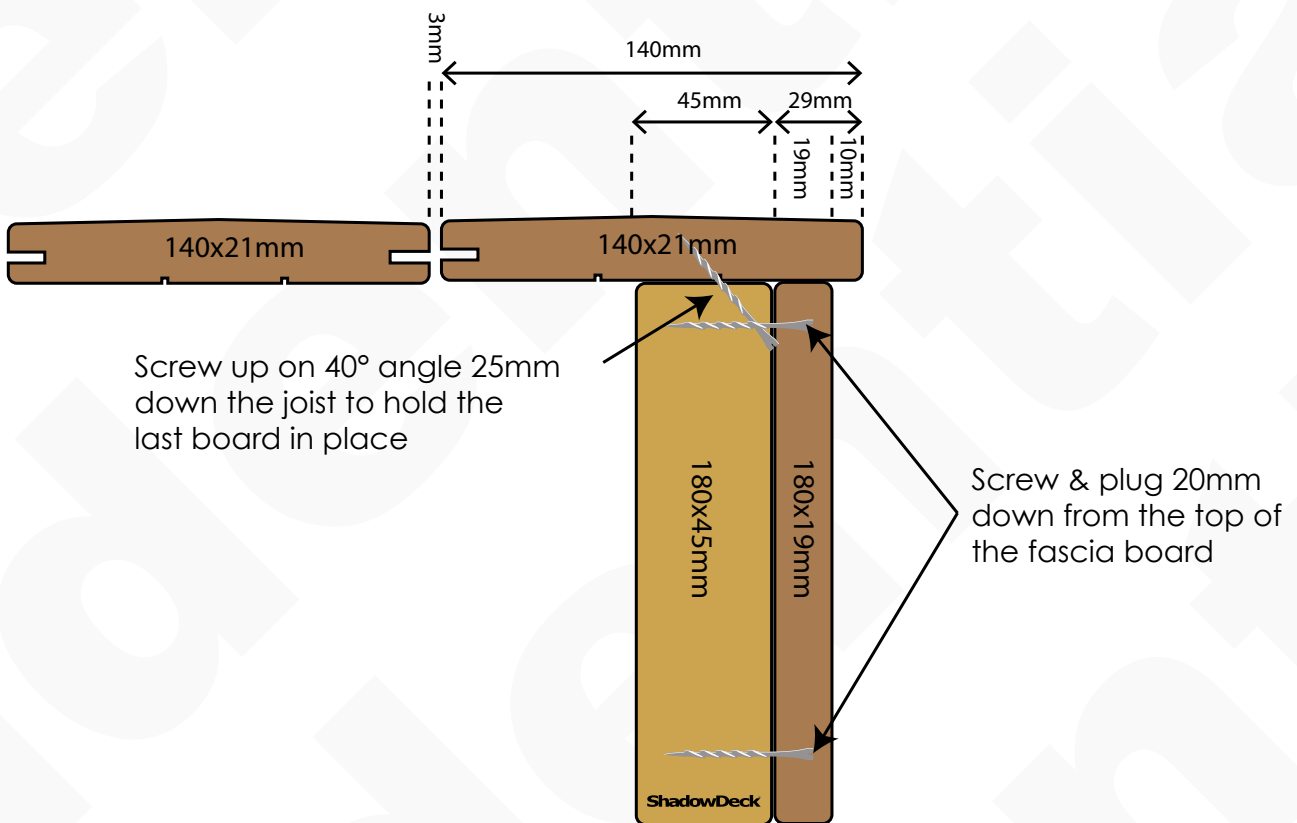


The standard width of the decking boards is 140x21mm with a 3mm gap. You can then divide 143mm (140mm board width & 3mm gap) by the width of the deck to ensure you use the full width of the decking boards from start to finish. (See Diagram 1) This helps to avoid having to rip down any boards. Make sure your perimeter joists ends 30mm shorter than your last decking board. This will allow the fascia board to tuck up nicely under the last decking board with a 10mm clerk.

Allow a 12mm space between the house and your first decking board. See ShadowDeck™ 12mm House2Deck Spacer. If you use a ShadowDeck™ 12mm House2Deck spacer, then your first board will start 12mm out from the house.

Example: If you wanted to build a 2m deck out from your house, you divide 2000mm by 143mm which gives you roughly 13.98 boards. To ensure you end up on a full board and avoid having to rip a decking board down, you round up to 14 boards and times 143mm, to give 2002mm. If you add the 12mm for the space between the house and the first board, this will give you a deck width of 2014mm.

ShadowDeck™ Deck Edge Cross Section



To find out the measurement of your outside boundary joist, you will need to subtract 30mm from this finished measurement. $2014\text{mm} - 30\text{mm} = 1984\text{mm}$. This will allow for a fascia board to be fitted to this boundary joist and give a 10mm overhang.

The ShadowDeck™ 137x21mm Bullnose profile is also 3mm smaller than the standard

140x21mm decking profile so if you are going to use this finish, take this into account when planning your boundary joists so you allow a 50mm overhang. See Bullnose profile.

If your decking boards are running parallel to the length of the house, then your joists should run perpendicular to the house at 400mm centres. Once you have your boundary joists in place, evenly space your joist at approximately 400-450mm centres.

Picture framing the perimeter of your deck will give you a superior detailed finish and it is important to take this into consideration when setting out your deck. See Picture Framing your ShadowDeck™.

When picture framing your deck with a picture frame board or a Bullnose board, you will need to add extra joists where the picture frame board and the butt ends meet. This is to pick up your ShadowDeck™ T Shaped Fastener which will locate your picture frame board at the correct height of your decking board. Another joist 45mm out from this joist is needed for a 3mm fastener to be fitted. See notes on 'Picture Framing yourShadowDeck™'.

If you are going to add seating, hand rails, or overhead structures, then you will need to consider adding posts and nogging out around these structures to pick up the decking boards.

With lighting, water or gas services, make sure you plan ahead to have these utilities in place before your decking goes down.

For an estimate of how much timber and fasteners you will need to order, you can use our handy online calculator at www.ShadowDeck.co.nz One box will fasten 12 square metres using 140mm wide decking.

Transport, Storage and Handling

All decking timber should be kept dry until installation. On site storage of decking should be in a cool, dry place, kept off the ground by placing on bearers. (about 100-150mm high) If decking is left outside, covering with a tarp to protect from the elements is also recommended.

Ventilation

Free air circulating under the deck is essential as it helps to minimise cupping and warping following installation.

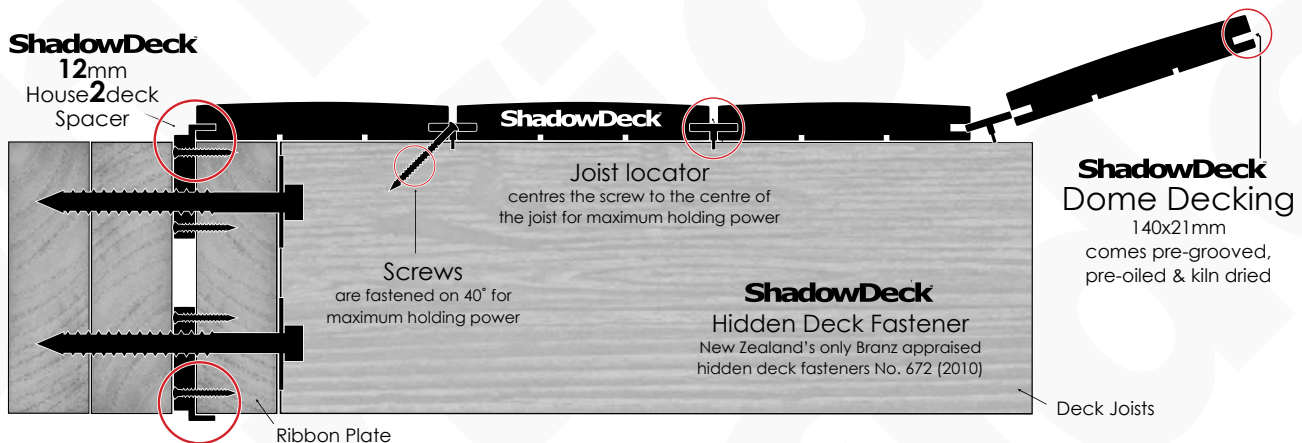
Proper ventilation ensures the possible difference in moisture levels between top face and the underside of the decking is minimised extending the life of the deck.

The underside of the deck should have at least 450mm clearance from the ground which, in conjunction with adequate board spacing. Our ShadowDeck™ fastener give an even 3mm ventilation gap.

Note: Failure to provide suitable and adequate ventilation at construction is a major cause of early decking failure

Installing the First Board

Once you have fixed your ribbon plate with the ShadowDeck™ 12mm House2Deck Spacers and finished framing your deck you can start laying. Slide the first decking board into the ShadowDeck™ 12mm House2Deck Spacer. Tighten the first decking board using the ShadowDeck™ wrench. Insert a ShadowDeck™ Fastener into the slot and move into place using the joist locator on the fastener. Screw down on a 35-40° degree angle using the screws provided. Ensure that you do not over tighten the screw as this will bend the lip of the fastener, making it difficult to get the second board in.



Installing Decking Boards

Using our ShadowDeck™ 140x21mm pre-grooved domed decking, place a ShadowDeck™ fastener on top of the joist and slot the fastener into the grooved edge of the decking timber.

Move the locator pin so that it touches the side of the joist which will ensure the fastener and screw are centered on the joist.

Use the ShadowDeck™ Deck Wrench to pull the decking board in tight and straight into your fastener. This gives a uniform 3mm gap between the decking boards.

Fix the fastener to the joist using the screws provided on a 35-40° degree angle. Ensure that you don't over tighten the fastener as this will warp the fastener and make the next board difficult to pull in. Work along each joist to ensure the boards are pulled in tight and straight.

Repeat this process until you come to the last board.

Installing the Final Board

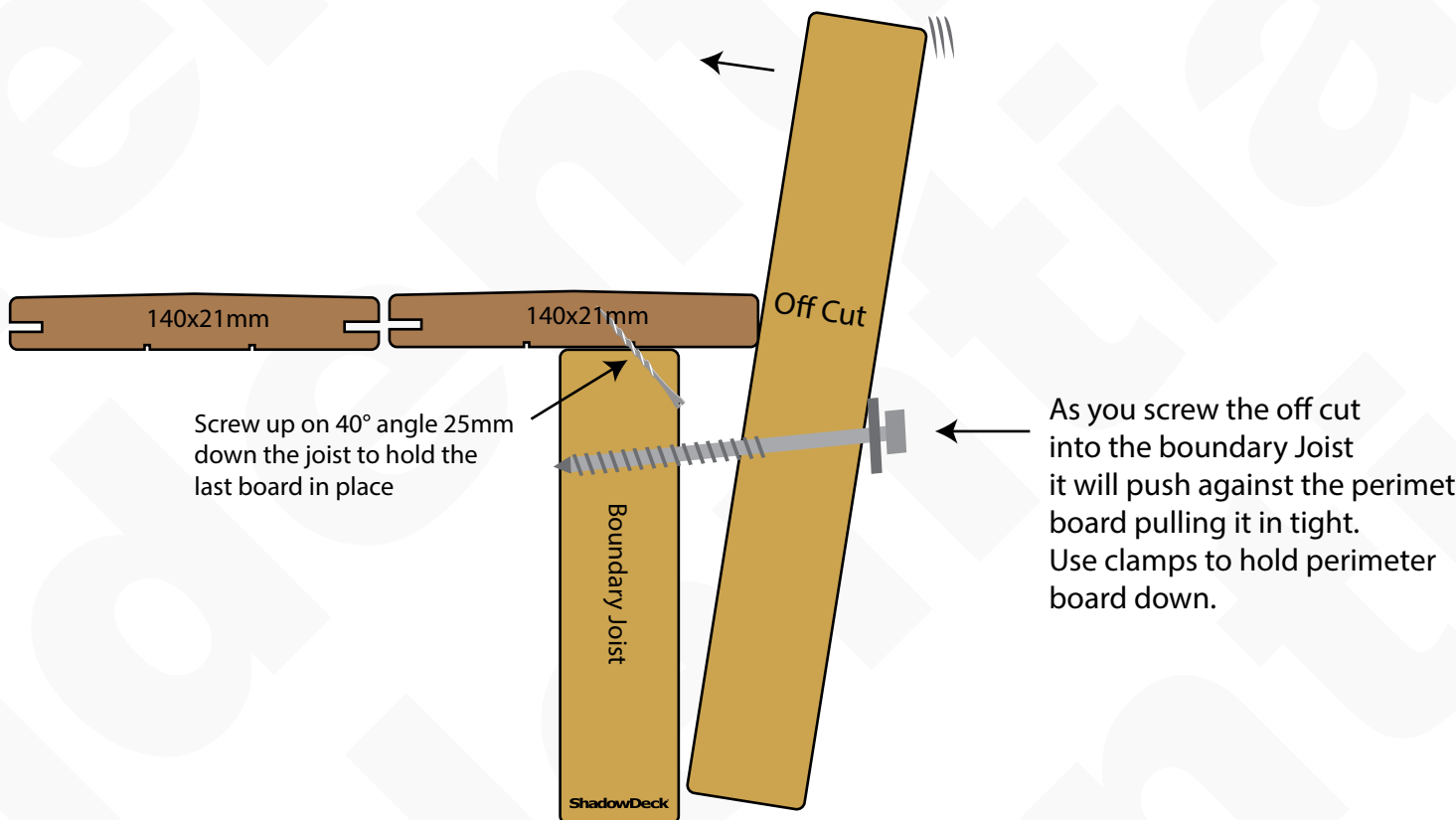
The final outside board is fixed in a similar way as the first board with the inside face secured with a ShadowDeck™ Fastener.

To secure the outer edge of the final board, screw up on a 40° angle, 25mm down from the boundary joist face. This should be repeated at 400mm centres along the boundary joist.

It is recommended to clamp to hold the last board down while you are fixing it. You may also choose to use glue for added strength.

Note: You can use an off-cut to push the last board firmly into the fastener. Horizontally screw this off-cut into the boundary face to tighten the last decking board into the fastener. You can then screw up through the boundary joist into the bottom to fix the last board down. See diagram below.

Tightening the Perimeter Decking board using an Off-Cut

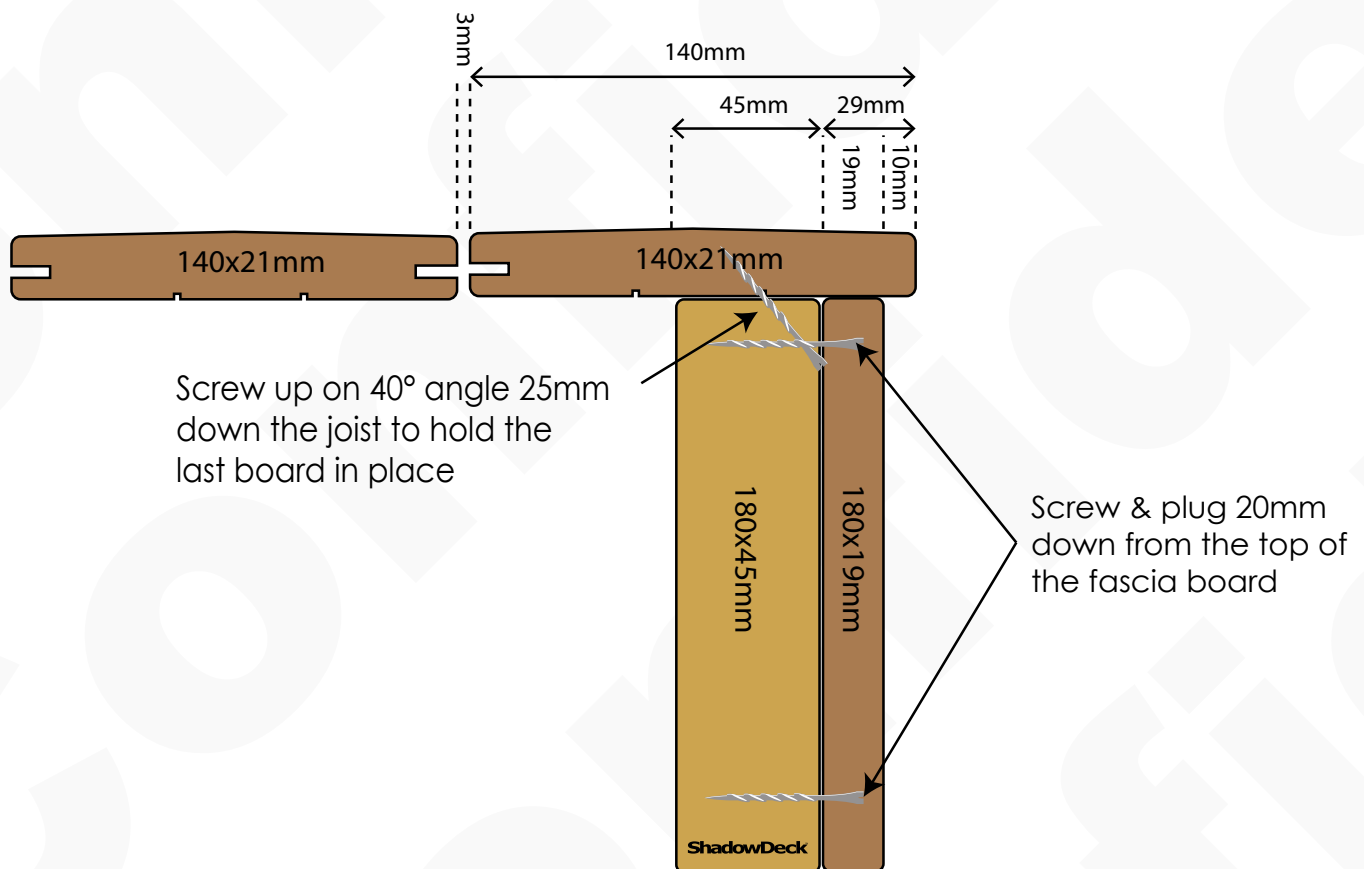


Installing the ShadowDeck™ 180x19mm Fascia Board

Once you have your 30mm overhang, you can install the first fascia board to the outside perimeter joist. Screw and plug 20mm down from the top & bottom edges of the fascia board. Glue can be used between the board and the joist for best results. This will decrease the number of plug & screws required.

Please note, fascia boards come in 180x19mm widths.

Fitting the Fascia Board



How to do a ShadowDeck™ Butt-Joint

A ShadowDeck™ Butt-Joint provides a seamless, clean finish between two decking board ends by ensuring the boards are set at the same height. This adds strength to the joint, increases the durability, prolongs the life of your decking timber and keeps your butt joints from lifting.

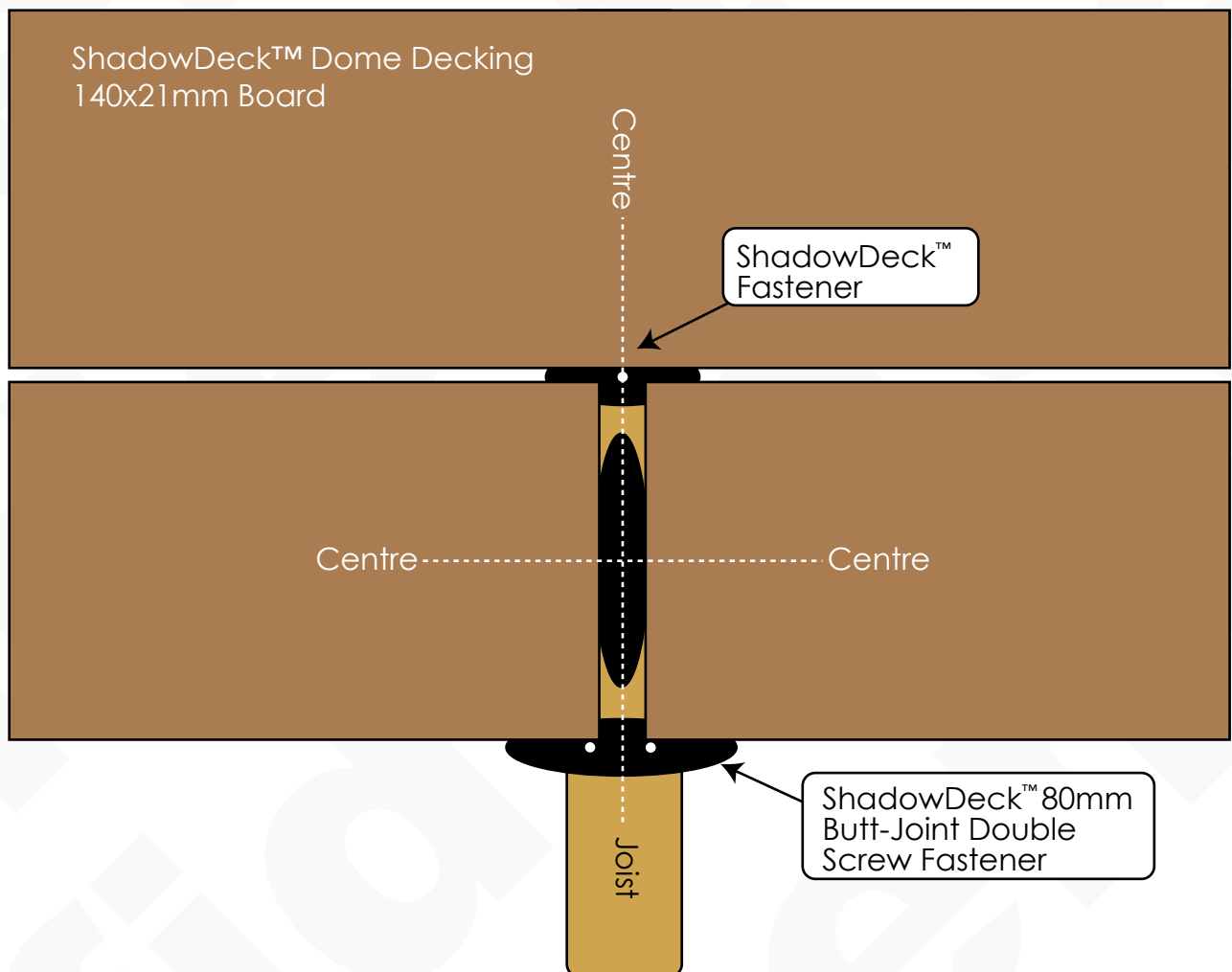
Ensure your mitre & square cuts are clean & accurate. Lightly sand to deburr the edges to give a clean hairline joint.

Each decking board end is biscuit cut and a ShadowDeck™ 100mm Butt-Joint Biscuit is inserted into the slot.

Note: After inserting the 100mm Butt-Joint Biscuit, you may use a little glue between the joints for extra strength.

Butt the ends of the boards together and fasten down the edges with a ShadowDeck™ 80mm Butt-Joint Double Screw Fastener.

ShadowDeck™ Butt-Joint



Note: We do not recommend you ariste the edges of your butt-joint using a plane as this highlights your joints. This also channels water into your butt-joints. This is an outdated technique and will shorten the life of your deck. When building a ShadowDeck™ the aim is to blend the Butt-Joints, not highlight them.

The image below shows how a finished ShadowDeck™ Butt-End Joint looks.



When you need to do a 45° mitre butt-joint, simply use the same steps as joining a butt-joint. For more detail see 'Picture Framing your ShadowDeck.™'

Creating a Mitre Butt-End Joint



ShadowDeck™ 12mm House2Deck Spacers

The advantage of the ShadowDeck™ 12mm House2Deck Spacer is to create a clean and tidy 12mm space between the house and deck and to help pick up the first board. Most importantly this space is a building code requirement for all new decks as it allows the water to drain away from the house.

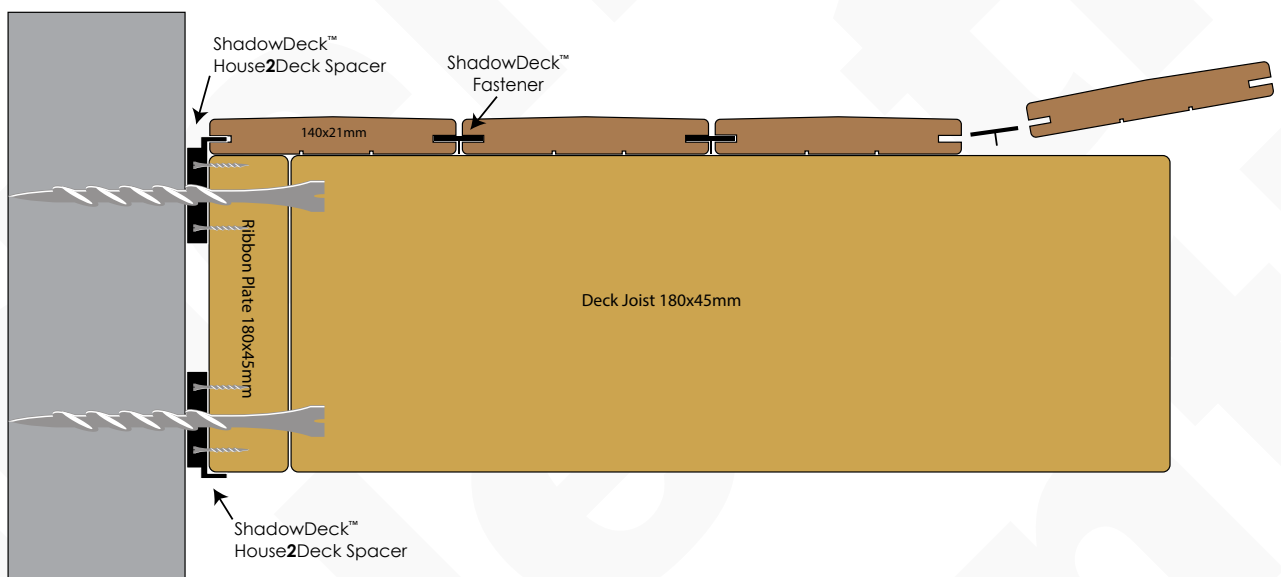
It is recommended you use the ShadowDeck™ 12mm House2Deck Spacer at 450mm centres. You will need a 12mm House2Deck Spacer on the top and bottom of your ribbon plate to ensure your ribbon plate is square & level to the house.

Note: To set the ShadowDeck™ House2Deck spacers at the right height, use a pre-grooved off-cut decking board. Place the pre-grooved off-cut on top of the joist, position the House2Deck spacer on the back of the ribbon plate and insert the off-cut into the spacer so it is flush to the top of the ribbon plate.

Once you have screwed your ShadowDeck™ House2Deck Spacers at 450mm centres along the ribbon plate, you can pre-drill through the centre hole using a 12mm drill bit. This 12mm hole will be used to fix your ribbon plate to the wall using an M12 coach bolt with a square washer.

Note: Please ensure your ribbon plate is level and square to the house. If it is not level and square, pack out to ensure your first board is straight.

ShadowDeck™ House2Deck Spacer

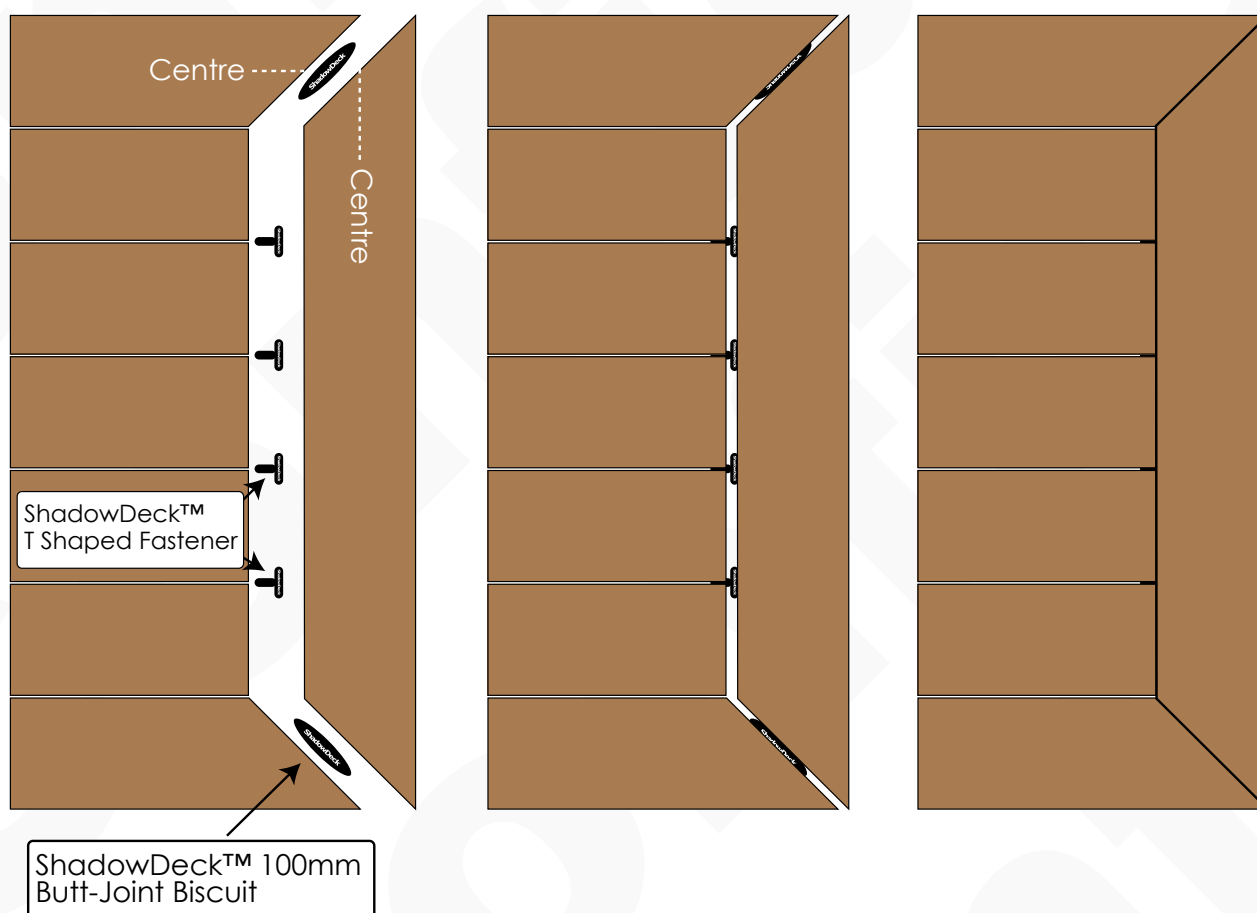


Picture Framing Your ShadowDeck™

Picture framing creates a beautiful border around the perimeter of your deck. This can be achieved by creating a mitre join on each board and using the biscuit cutter and a 100mm Butt-Joint Biscuit supplied with your ShadowDeck™ Fasteners.

When picture framing, you will need to allow a 30mm overhang for a 140x21mm picture frame profile, or for a Bullnose picture frame allow 50mm overhang on the last decking board. This is an important decision as it will determine the layout of your joists so getting this right at the start will save a lot of heartache later. It is important to lay out your joists correctly so your butt ends finish on a joist.

Picture Frame Diagram



Ensure that these butt ends are straight and cut to the same length so the picture frame board butts up tight against these butt ends. For best results, use a rail plunge saw to cut the ends of the decking boards so they are all even and ready to receive the ShadowDeck™ T Shaped Fasteners and the picture frame board. Once you have inserted the ShadowDeck™ T Shaped Fasteners into every 3mm gap, clip your picture frame board into these fasteners.

Insert a ShadowDeck™ T Shaped Fastener into each 3mm gap at the end of the decking boards. This will ensure the decking & picture frame boards are at the same

height and adds strength to the joints.

Make sure your picture frame board is tight against the butt ends and held down using clamps. This is important to ensure the picture frame board is fastened tightly to your perimeter joist.

Once you have clamped your picture frame board, you will need to fasten it. To fasten the outside edge of your picture frame board, measure down from your perimeter joist outside face 25-30mm (approx.) and mark all the way along. Screw up on a 40-45° angle into your picture frame board. It is important to avoid screwing through the face of your picture frame board.

Note: Most species of timber will shrink 1-2mm end grain so it is important to make sure your picture frame board is hard up against your butt-end joins.

Screw & Plug Technique

In some cases you will need to screw through the top of the decking board. The best method for hiding these screws is to plug the hole.

Drill a pilot hole with a small drill bit (4mm). Then drill the same hole with a larger drill bit that matches the plug size that you are going to use. Only drill down around 6-8mm with the larger drill bit, then screw your screw into the hole so the head of the screw is counter sunk by the same amount. You should take an off-cut of the same decking wood, and make the plugs using a plug cutter.

Apply glue to the bottom of the plug. The wood has grain so you need to align this with the grain of the plug for a professional finish. Push the plug in by hand and then give it a couple of taps with a hammer. Let the glue set for the recommended time period. Then take a sharp chisel and trim off the excess. Finally sand the surface flush and apply a small amount of decking oil using a clean rag or small brush.

Note: You can buy a plug cutter at most good hardware stores. You can also speed up time by purchasing a 2 in 1 drill & countersink decking tool.

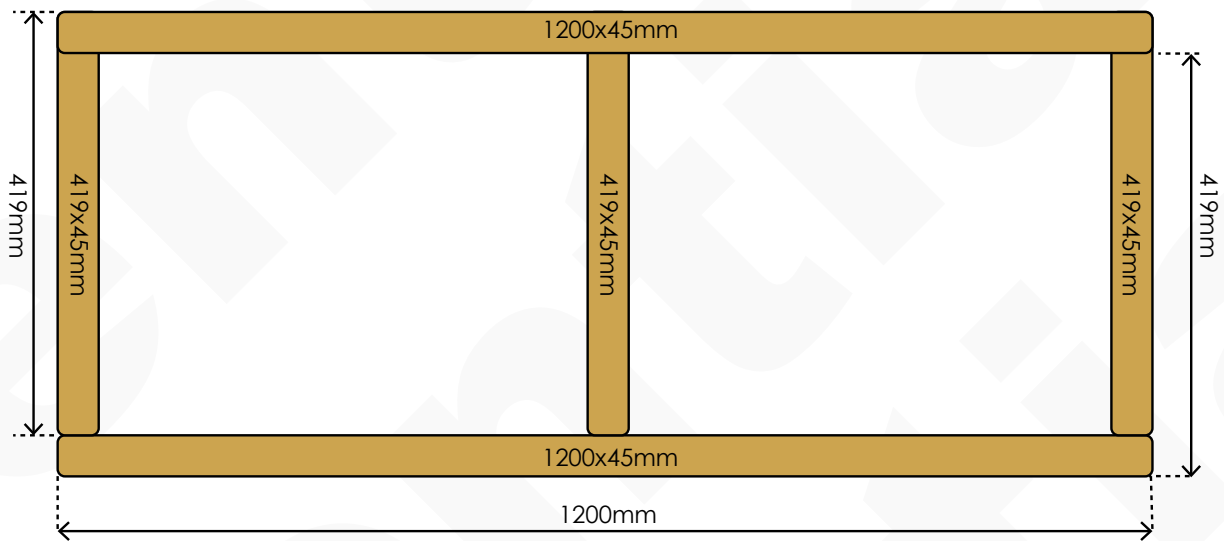
ShadowDeck™ Standard Steps

Steps can provide access and functionality to your ShadowDeck™.

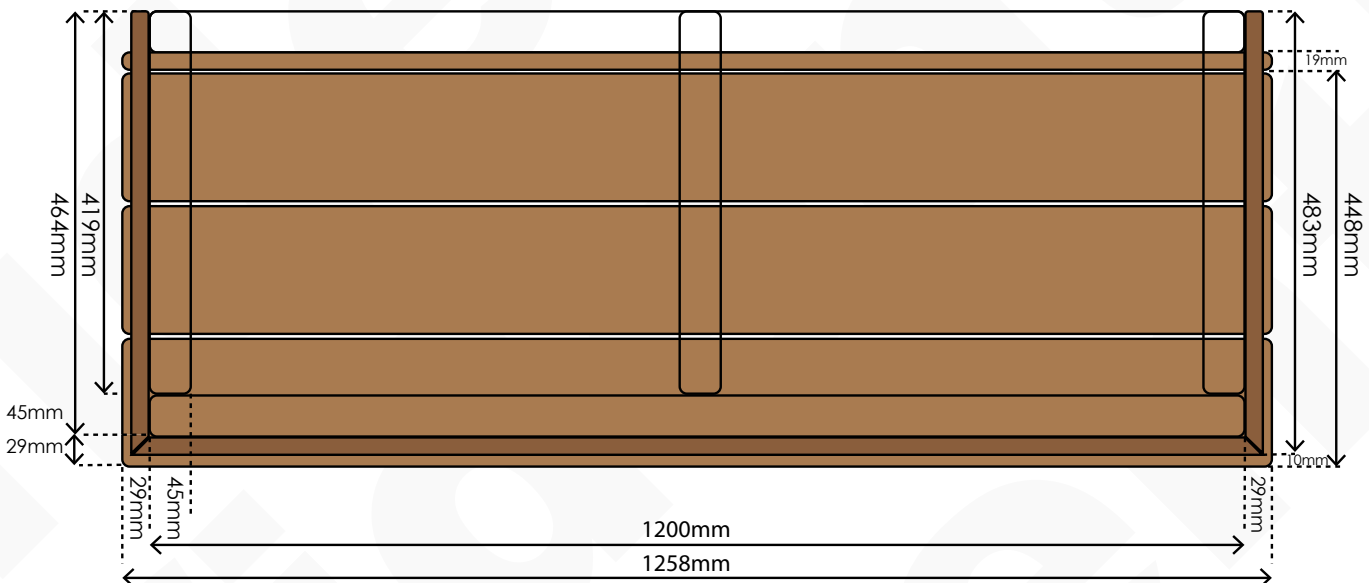
We recommend using **three** ShadowDeck™ 140x21mm decking boards wide to provide safe and comfortable access to your deck. As per picture framing, ensure the last decking board overhangs the joist by 30mm(approx.). If you are using the Bullnose profile, please allow 50mm overhang.

It is important to layout your framing to allow for this over hang. See example below for a 1258x448mm standard step layout.

Standard ShadowDeck™ Step Joist Layout



Standard ShadowDeck™ Step Layout



We recommend screwing and plugging 20mm from the top of the fascia board. Glue can also be used to provide extra strength. Once this fascia board is in place,

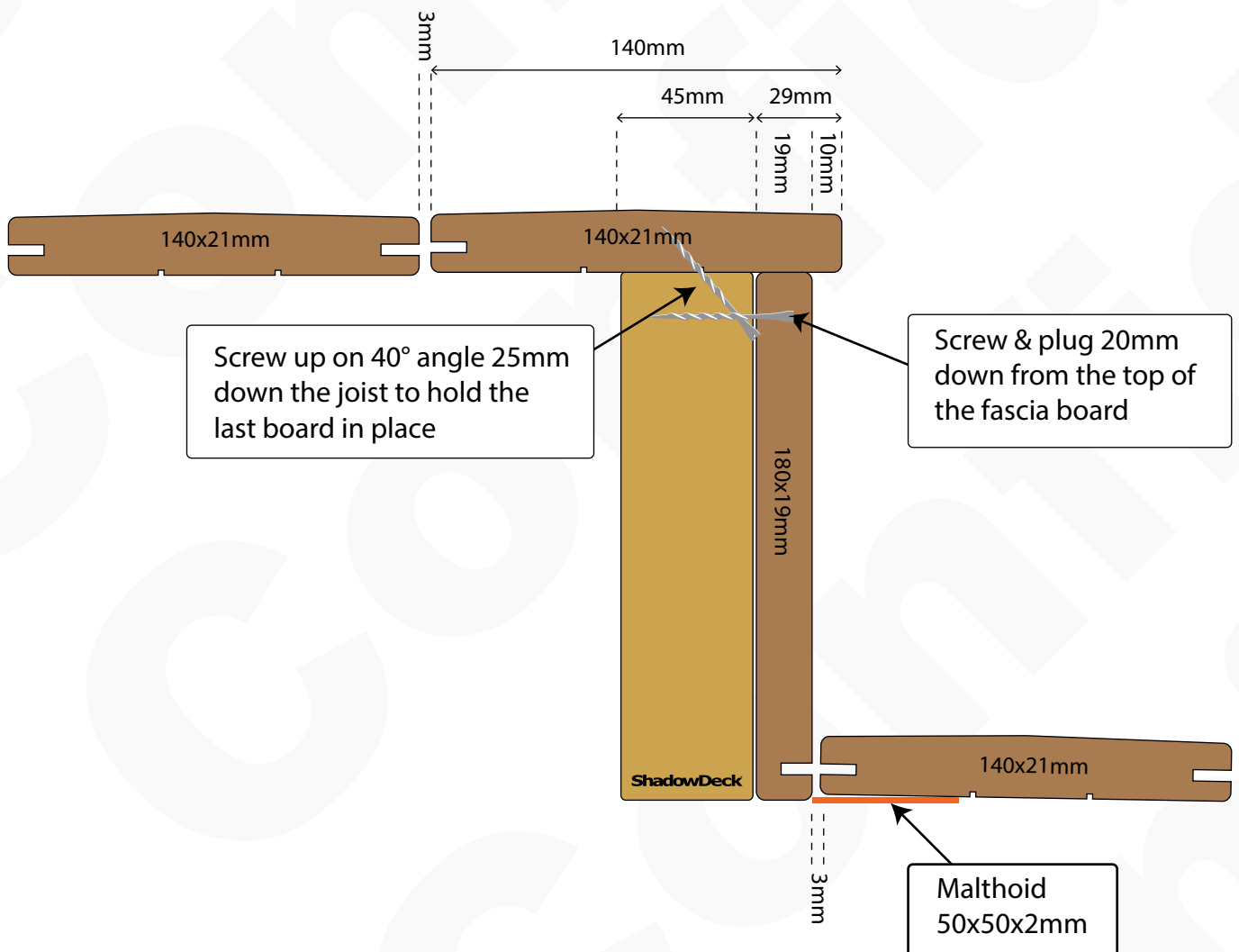
it can be biscuit cut into the bottom of the fascia board over the joist to set you up for the next step. The lowest you can cut using a biscuit cutter will be 8mm. The ShadowDeck™ decking is pre-grooved at 6mm from the bottom edge of your decking board so you will need to pack the joist 2mm to align the two slots up for the fastener. We recommend using 50mmx2mm Malthoid Bituminous as a packer. (not PVC plastic).

Insert fastener into fascia slot and screw down. Be careful not to over tighten and bend the fastener as you will struggle to put the first decking board down. You can then insert the next decking board and fasteners.

Note: Do not fit all fascia boards first. The top board needs to be screwed up on a 40° angle before the fascia board is installed.

Using a biscuit cutter, make a groove in the bottom of the fascia board, so you can fit a ShadowDeck™ Fastener in place and screw in. This will now set you up for the start of your next step. Repeat this process and screw and plug last board if required.

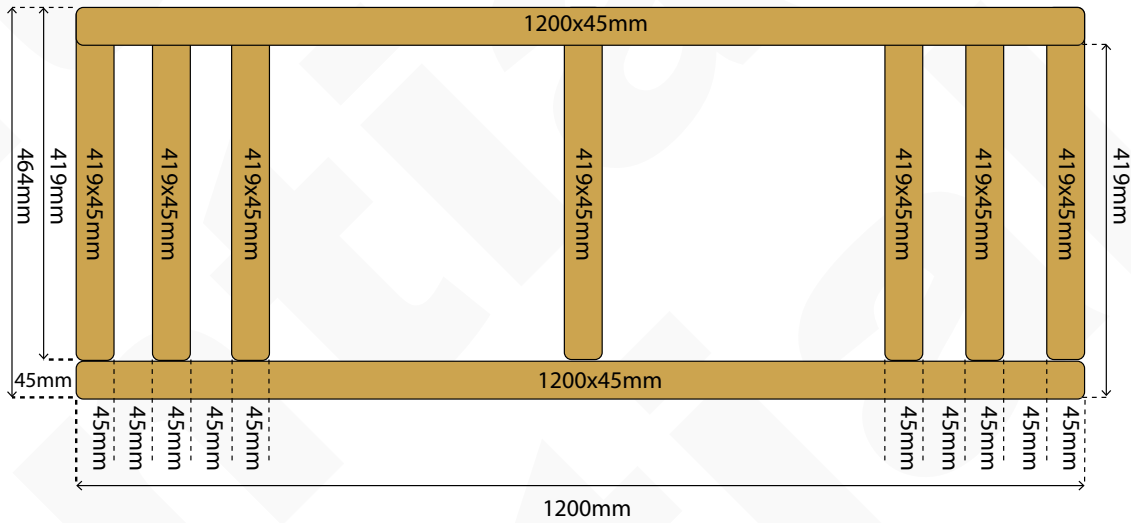
ShadowDeck™ Step Close Up Side Profile



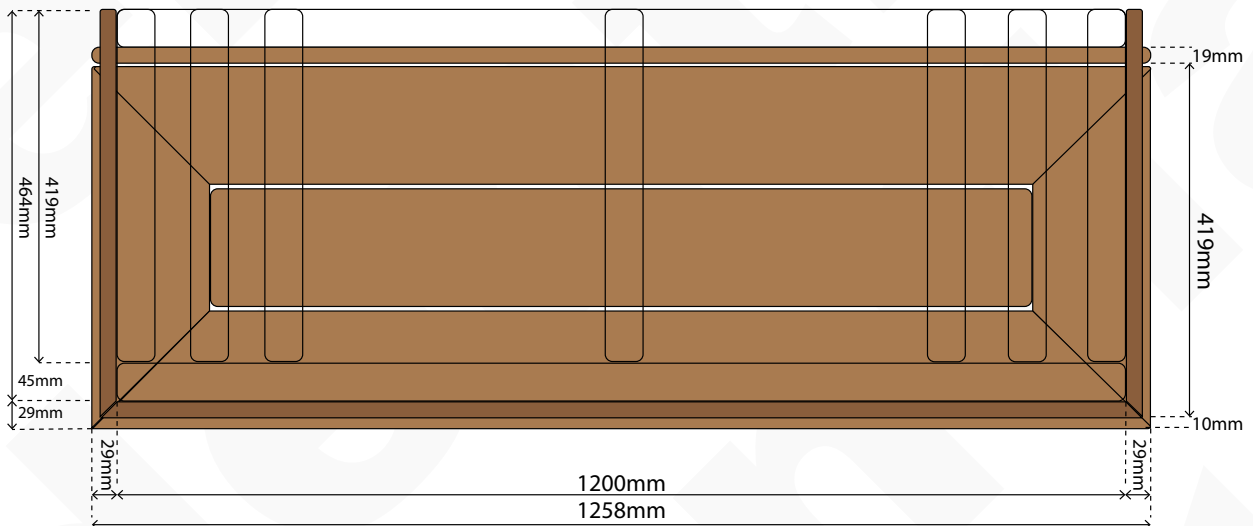
ShadowDeck™ Picture Frame Stairs

For the ultimate finish, you can picture frame your steps. You will need to add additional frame to pick up the picture frame as you would for a deck picture frame.

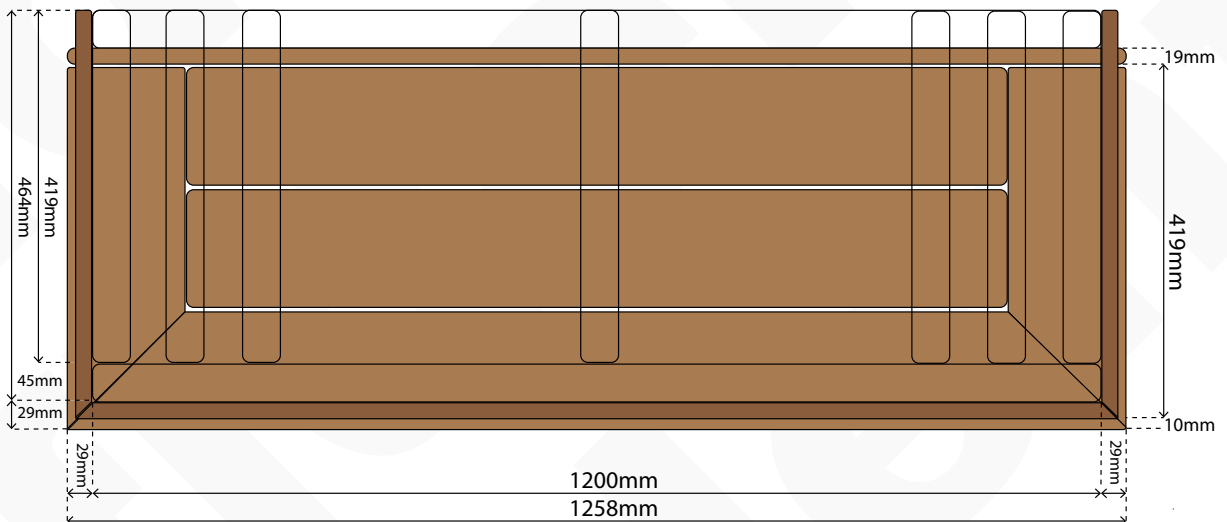
Picture Frame ShadowDeck™ Joist Layout



Picture Frame ShadowDeck™ Step Layout



1/2 Picture Frame ShadowDeck™ Step Layout



ShadowDeck™ Bullnose Profile 137x21mm

A Bullnose profile can be used for seating, stairs or deck edges. This Bullnose profile gives a unique finish to your ShadowDeck™ by giving it a softer look.

Allow a 50mm overhang as the Bullnose profile comes with a groove on the underside, especially designed for a fascia board to slot into this groove. You may have to pack out the fascia board to ensure a snug fit.

Screw up on a 40° angle, 25mm down from the top of the face of the perimeter joist into the underside of the Bullnose board to fix in place.

ShadowDeck™ Bullnose Steps

The ShadowDeck™ Bullnose Step finish is similar to the standard steps finished however instead of using a 30mm overhang on the last board, you use a 50mm overhang.

To create stairs using a ShadowDeck™ Bullnose board, screw from the bottom of the joist into the underside of the Bullnose to fix this in place. It is best to use clamps for this process so the board does not rise when you are screwing into it. This is similar to fixing the standard picture frame board detailed above.

Then using a ShadowDeck™ 180x19mm fascia board, slot into the underside groove in the Bullnose board. This does not require any fastening into the groove on the underside of the Bullnose board. You can also use glue on this fascia board for added strength.

Note: To ensure a snug fit into groove of the Bullnose, you can use some Malthoid to pack out the fascia board.

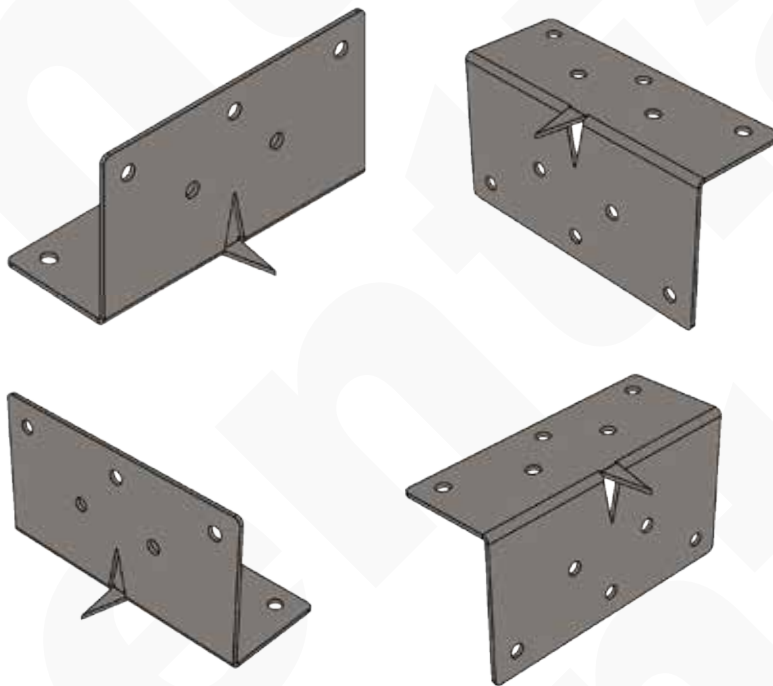
Ripping down a Decking Board

Sometimes there is no alternative but to cut a board to suit. The best place to fit this board is against the house where it won't be as noticeable. Please see 'Planning your Deck' to ensure you have measured correctly.

ShadowDeck™ Internal Fixings

We recommend using ShadowDeck™ L brackets for added strength on your boundary joists. This replaces joist hangers and halves the time for installation.

ShadowDeck™ 150mm L Joist Bracket



ShadowDeck™ Anti-Slip

ShadowDeck™ Anti-Slip is an invisible thin protective coating which prevents slipping in all conditions. Our ShadowDeck™ Anti-Slip coating solution achieves a rating more than double the council requirements. ShadowDeck™ Anti-Slip will work on any new or existing deck and will provide superior non-slip performance. Get in contact with us for more information.

Maintenance of your ShadowDeck™

A ShadowDeck™ is designed to stand the test of time and give you and your family years of enjoyment. We strongly recommend you clean and apply a fresh coat of ShadowDeck™ Decking Oil to your ShadowDeck™ each year to ensure the deck is kept in peak condition. The decking oil provides a barrier against the conditions and protects the wood in a similar way that sunscreen protects our skin from the elements.

You should first clean your ShadowDeck™ with a stiff brush (more often depending on the decks location) to remove any surface mould and clear gaps. You can use a mild solution of bleach (1 cup per 4 litres of water) to remove any build up of resin or extractives that may leech out of the timber over time. If your deck is above another surface below, be mindful of transfer of residue.

Once the ShadowDeck™ is clean and dry, you may apply a coat of ShadowDeck™ Decking Oil. For best results we recommend 2 coats with at least 5 hours drying time in between. You may wish to apply a third coat in three weeks time.

Please note, boards should be free of all surface marks and stains before coating.

Here are some tips to help keep your deck looking great and lasting longer

- #1 tip is not to have pot-plants sitting directly on your deck
- Keep your deck free of leaves and debris
- Move furniture around often so you don't get UV bleaching spots
- Do not water blast at close range as this breaks away timber fibers, effectively speeding up the deterioration process
- Treat your deck to a coat of oil at least once a year, this process will help the timber stand up to our harsh NZ weather

Tools Required for a ShadowDeck™

- Drop saw with fine tooth blade
- ShadowDeck™ Deck Wrench
- 18v Drill
- Sharp chisel
- Tape measure
- Sharp pencil
- Square
- Plug cutter & drill bits

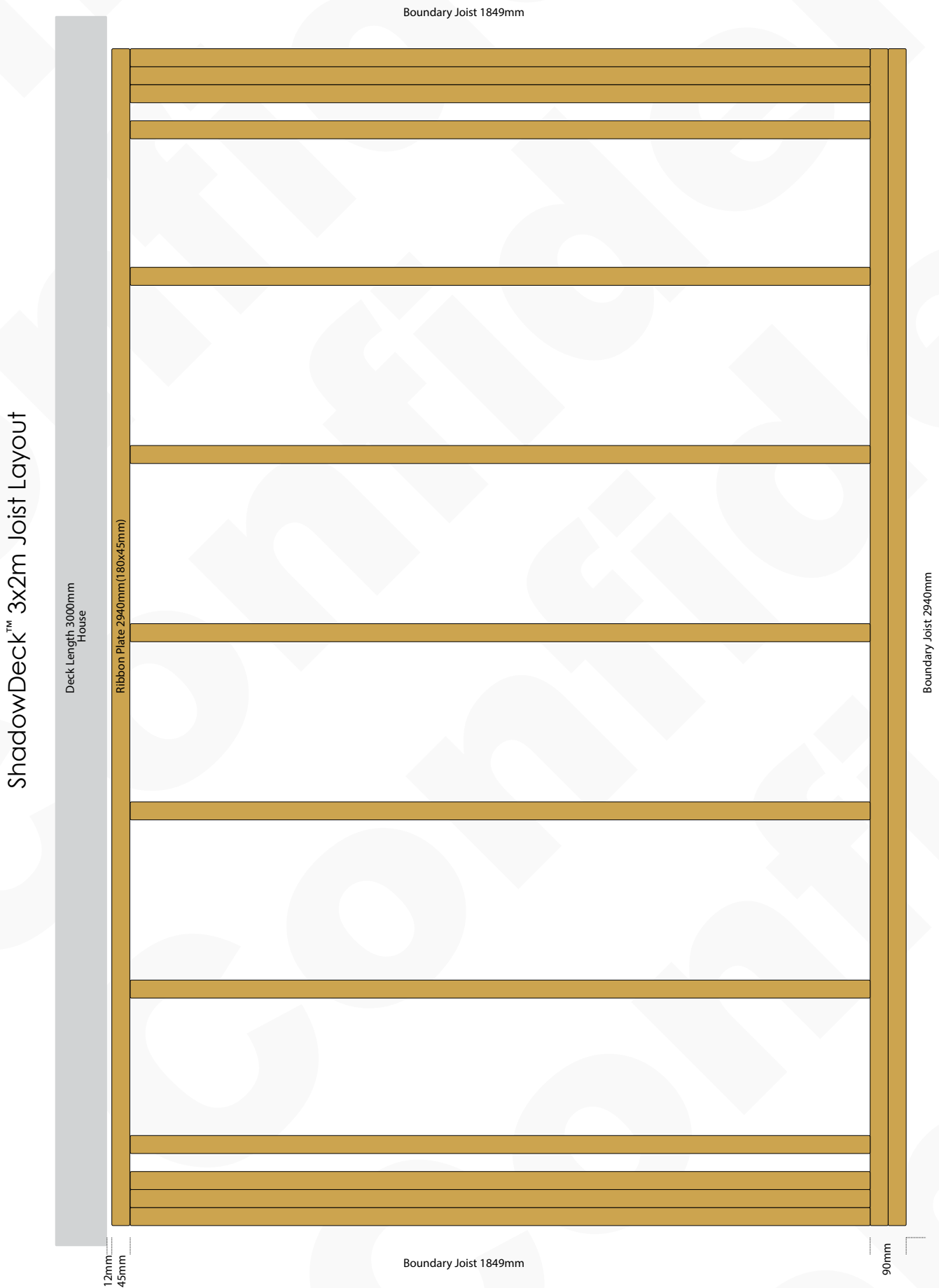
Tools Recommended for a ShadowDeck™

- Plunge saw
- Multi tool
- Jigsaw
- 2 in One drill bit
- Caulking gun for wood adhesive

Safety Equipment

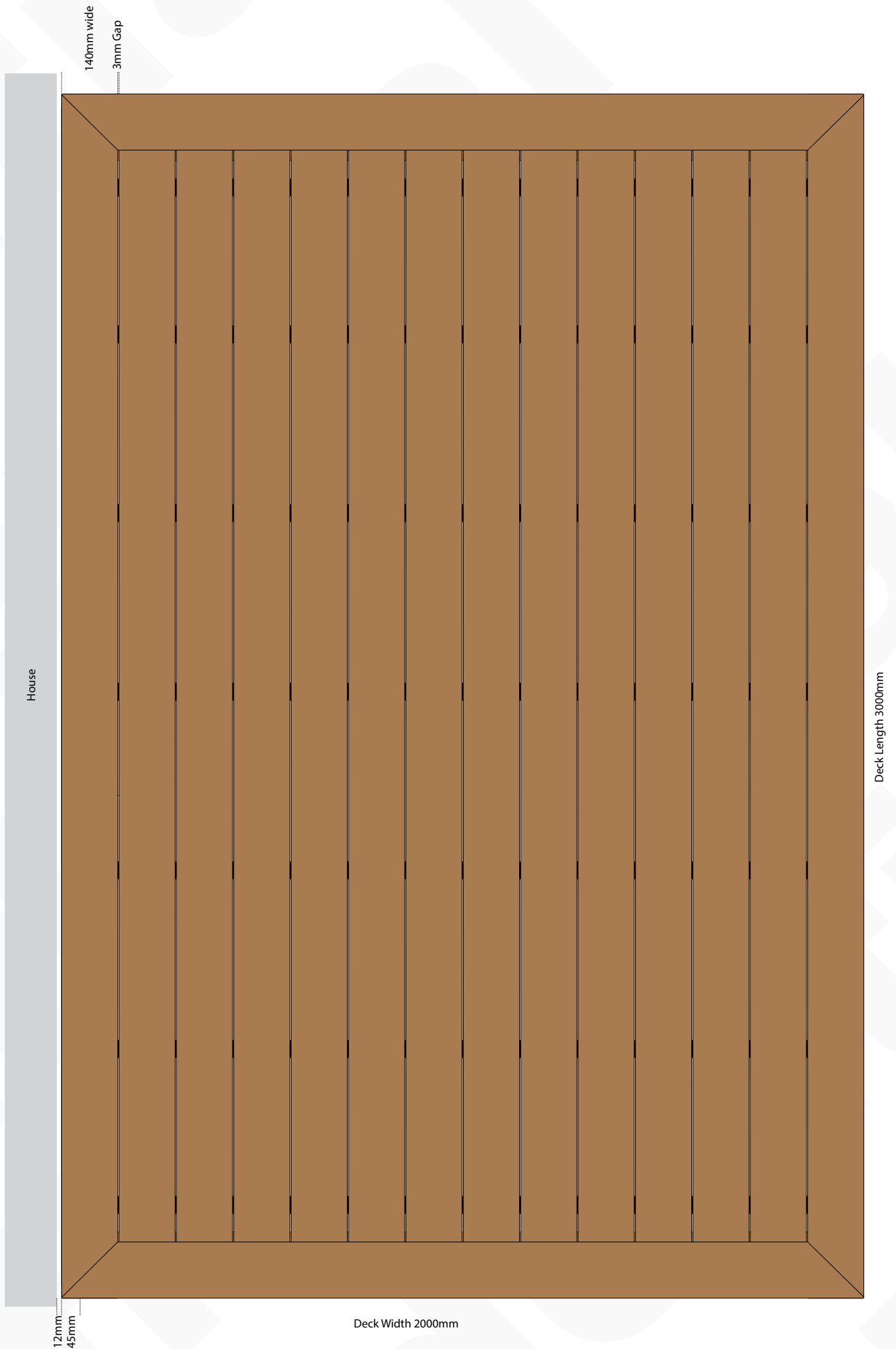
- Ear plugs or ear muffs
- Safety glasses or goggles
- Gloves
- Safety shoes

Appendix One: ShadowDeck™ 3x2m Joist Layout Example



Appendix Two: ShadowDeck™ 3x2m Deck Layout Example

ShadowDeck™ 3x2m Decking Layout



ShadowDeckTM

www.ShadowDeck.co.nz

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