



146 CX Decking

INSTALLATION GUIDE

A clever, reversible dual-finish composite board. Read this guide in full before commencing installation and keep it on hand throughout your build.



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General guidelines & precautions

Please ensure you read these instructions completely before commencing installation. With correct installation, PermaTimber® Decking will provide years and years of enjoyment. Please read these instructions before installing your deck and refer to them during installation.

Thanks to its special combination of materials, PermaTimber® Decking is a long-lasting, low-maintenance outdoor living product. PermaTimber® Decking maintains a natural look and feel yet can far outlast all-natural matter with an ability to handle even the toughest of conditions. Our materials are made from 87% recycled materials.

Due to the natural elements in PermaTimber®, it has some unique behavioural characteristics (expansion/contraction) that must be considered when installing. PermaTimber® contains nature-inspired elements, and as you would be aware, nature has different appearances. To ensure PermaTimber® does look natural, it may also experience variations in each board, and in some instances slight variations in colour, tone and grain.

As a result of this, Perma Composites® may have natural variation in each decking board and, in some instances, slight variation between a sample and final colour.

Before you cut or install: the customer/installer is responsible for inspecting each decking board for colour, finish, size and other issues prior to installation. For large projects, order all materials together so everything comes from the same batch. If boards on site are from different batches, contact your local distributor before installing. Colour variation is not covered under warranty. No structures of any kind should be fixed to the decking itself.

Warranty information is available at www.permacomposites.com. Download the latest version of this guide from www.permacomposites.com/brochure-installation-guide-library/.



Product Overview & Technical Specifications

Innovative in design, PermaTimber® 146 CX Decking delivers a stunning natural timber finish without any of the associated maintenance, made from a combination of high-quality recycled hardwoods and plastics.

Why 146 CX

- **Reversible dual-finish design** - fully reversible profile with heavy wood-grain texture on both faces and a different, unique colour on each side.
- **Low maintenance** - no staining, painting or oiling required. Light scratches sand out easily.
- **Quick & easy to install** - simple hidden fixing system.
- **Non-slip surface** - ideal for poolside and coastal locations.
- **Insect & salt resistant** - never fear white ants or termites again.
- **UV stabilised** - UV inhibitors keep colour holding and looking fantastic for life.
- **Eco-friendly** - made from 87% recycled materials, FSC-certified wood-plastic composite.

TECHNICAL DATA

Board dimensions	146 x 22 x 5400 mm
Max residential span	450 mm
Max commercial span	400 mm
Weight per board	22 kg
Weight per LM	4.1 kg
Weight per SQM	28.2 kg
Wet pendulum AS 4586	P5
Oil-wet incline AS 4586	R11

Board profile



Colours



Rosewood



French Oak



Tasmanian Oak



Spotted Gum



Ebony



American Oak

Item Code: DCX146SGRW

Item Code: DCX146EBFO

Item Code: DCX146AOTO

Swatches shown are a typical illustration only. Actual colours and textures are intended to vary between individual boards and batch numbers — always view a physical sample before ordering.

Edge Board profile



Colours



Rosewood
DCX146ROEB



French Oak
DCX146FOEB



Tasmanian Oak
DCX146TOEB



Spotted Gum
DCX146SGEB



Ebony
DCX146EBEB



American Oak
DCX146AOEB

Swatches shown are a typical illustration only. Actual colours and textures are intended to vary between individual boards and batch numbers — always view a physical sample before ordering.



SECTION 02

Fixings

The 146 CX system uses hidden clips for a clean, screw-free surface. Use only the fixings below with your 146 CX boards.



ProLock Dual-Rebate Deck Clip — DFX430T (timber subframe) / DFX430M (Metal Subframe)



Drivers — matched driver bits for clip screws



Start/Stop Clips — DFX008 (first & last rows and edge boards)



Mini Gap Clip — for a tighter (1.5mm) board-to-board gap. DFX215 (suits 225 decking) / DFX415 (suits 146 decking)



Mini Gap Anti-Creep Clip — one per board, locks board position. DFX315 (suits 225 decking) / DFX515 (suits 146 decking)



Stainless steel screws — DFX005 (timber subframe) / DFX006 (steel subframe)

Important Fixing Information

Only the ProLock Dual-Rebate Deck Clip is supplied with screws suitable for installation on timber or metal subframes.

PermaTimber® Mini Gap Clips must be secured using the correct screw for the subframe material:

- Use DFX005 screws for timber subframes.
- Use DFX006 screws for steel subframes.

DFX005 and DFX006 screws are not suitable for use with Start/Stop Clips. Use an appropriate screw compatible with the subframe material. An 8-gauge × 30 mm 316SS screw is recommended.

For clip, screw and board quantities for your specific deck, use the decking calculator at www.permacomposites.com.



SECTION 03

Subframe Information

PermaTimber® Decking can be installed onto any new or existing subframe, provided the frame is of sound strength, meets the recommended spans, and is in good condition.

Design your subframe to these rules

- All joists/supports run **perpendicular** to the decking boards.
- All perimeter edges of the deck are to be **supported by joists — no overhang of boards**.
- If a cut-out is required for an existing structure, it must be supported around **all edges** of the cut-out.
- Allow a **1–2 mm fall per metre** in the subframe, away from any adjoining structures, so water runs off easily.
- A minimum **100 mm clearance** is required beneath decking boards for airflow, and so water cannot pool underneath.
- Account for any significant loads such as spas, water features and large planters when setting subframe spacing.
- Perma Composites® can supply FRP joist systems. Contact us for stockists and information.

Before you lay a board

Once your subframe is complete, measure out the fit of the decking boards to determine whether any end pieces require trimming. If intricate cuts are needed, consult a professional installer or chat to a PermaTimber® consultant.

- Do not rip any piece of decking below **45 mm** in width. If a board would finish under 45 mm, cut the two adjoining boards and halve the difference so both remain over 45 mm.
- If laying a **commercial deck**, consult Perma Composites® before laying to confirm spans and product suits your install standards and loads.

Warranty warning: PermaTimber® fixings MUST be used to install your deck, or you risk voiding your warranty. Face fixing through PermaTimber® Decking across the whole deck is not recommended and may void your warranty. Face fix only at corners, edges and final boards as set out in this guide.



SECTION 04

Top Screw Fixing

Top screw fixing

Where top/face fixing is required (final boards, corners and edges only), use a stainless-steel-grade decking screw and follow these rules:

- **Pre-drilling and countersinking is essential.** The pre-drill size must be at least 1.5 mm greater than the overall thread width of the screw being used.
- Drive with **low to medium torque**. Do not overtighten or over-drive. The screw should clamp the board down and finish flush with the board surface.
- Keep face fixings at least **40 mm** from board ends and edges, driven at 90° to the board.
- Recommended screws: **DFX005** for timber subframes, **DFX006** for steel subframes (fixing clips only).



Expansion Gaps

The boards expand and contract due to differing weather temperatures, much like traditional timber does. When installing the decking, please refer to the expansion table to see what the expansion per metre length is for each of the boards. Half each side refers to how much expansion is caused on each side. For example, if the deck was installed at 20°C, each end will be expanded by 0.5mm per metre, equating to 1mm per metre, when compared to 0°C.

Note: When constructing your PermaTimber® Deck, be sure to always let the ends of the boards overhang the end of your last joist. Then cut all of the PermaTimber® Decking boards along the outside edge at the same time to stop the temperature for changing and changing the gap size. This expansion is per metre, not per board, and is expanding lengthways. Please make calculations based upon the length of your board.

The Table below refers to the expansion per metre length for the board when installing the deck. For example, if the deck was going to be installed in the winter at 0°C, the expansion will be 2mm per metre (10.08mm per 5.4m board) in summer at 40°C. Expansion per metre length has a safety factor of +/- 2%.

Ambient temperature at installation	Gap per metre of board, each end	Gap for a 5.4 m board, each end
0°C ≤ temperature < 10°C	1.3 mm	7 mm
10°C ≤ temperature < 20°C	1.0 mm	5 mm
20°C ≤ temperature < 40°C	0.6 mm	3 mm
Temperature ≥ 40°C	0.4 mm	2 mm

Installer's tip: always let board ends overhang the last joist as you lay, then cut all boards along the outside edge at the same time. This prevents the temperature changing between cuts and altering your gap sizes, and gives a perfectly uniform edge.

Important Note: This installation guide is intended solely to demonstrate the installation of the decking boards and associated clips. It does not provide instructions for the design or fabrication of the supporting subframe. All images are for illustrative purposes only.



Board Joining Methods & Breaker Boards

Always leave expansion joints when joining. Butt joints must always occur over a double joist, and staggering butt joints is the best way to manage expansion and contraction.

1 — Breaker boards RECOMMENDED FOR LARGER DECKS

A breaker board is simply a normal 146 CX board installed at 90° to the field boards. Running full boards with butt joints can result in gaps over 10 mm once boards cool and contract. Breaker boards are an effective way to eliminate this, and they let you use off-cuts to improve deck design and reduce wastage.

Breaker boards are supported by **double joists on either side** and held down by ProLock Dual-Rebate Deck Clip.



2 — Butt joints

Butt joints can be used, but to minimise visible expansion gaps, cut boards shorter and stagger the joints across the deck. Every butt joint sits over a **double joist** with the gap from the Section 05 table.



3 — Full boards

Full single-length boards can be used for decks **up to 5.4 m long**, providing the simplest installation and the cleanest finish.





Installation — Edge Board

Start from a step or exposed edge. For the best outcome, begin at the exposed edge or step of the deck and work back towards the wall or house. This puts a full board at the most visible edge, and gives you flexibility when finishing and fastening the leading edge board and fascia.

- 1. Plan the edge board position.** Set the edge board out along the deck edge and confirm the required overhang before fixing any clips.
- 2. Install the first row of Start/Stop Clips.** Fix them to the joists along the leading edge, positioned straight and aligned with the board groove. Fix a Start/Stop Clip on each joist, using suitable screws (not supplied with Start/Stop clips).
- 3. Engage the edge board.** Push it firmly into the Start/Stop Clips so the bottom groove of the Edge board locks into place.
- 4. Check alignment and overhang.** Confirm the edge board is straight, fully seated in the clips, and has a consistent overhang along the deck edge.
- 5. Continue the deck.** Once the edge board is secured, install the remaining boards using your approved fixing system — Sections 08 and 09.



Start/Stop Clips fixed and aligned on every joist along the leading edge



Position the Edge board so the bottom groove lines up with the Start/Stop Clips.



Lower the Edge board carefully, ensuring the clips sit inside the bottom groove of the board.



Push the board firmly forward until the groove locks securely into the Start/Stop Clips.



Installation — ProLock Clip

Install the boards using the ProLock Dual-Rebate Deck Clip, with the twin rebates securing both boards while automatically maintaining a consistent gap.

1. Insert the ProLock Dual-Rebate Deck Clip into the groove of the edge board.
2. Screw down approximately **2 mm**, just enough to hold the clips in place.
3. Push the next board into position.
4. Repeat, laying approximately **5–10 boards** before fully tightening the screws (optional but recommended).
5. Measure from the first board to the last board to confirm the boards are aligned and square.
6. Once positioned, secure the section by tightening the screws. Ensure each screw is tight enough for the clip teeth to **bite firmly into the board groove** — but do not overtighten.
7. Repeat these steps until the decking installation is complete.
8. At the end of the deck, the final board may need to be ripped down to fit. Secure the final edge by face fixing: pre-drill an oversized clearance hole larger than the screw shank, countersink the board, and fasten at every joist or at maximum **450 mm centres**.



Insert the ProLock Dual-Rebate



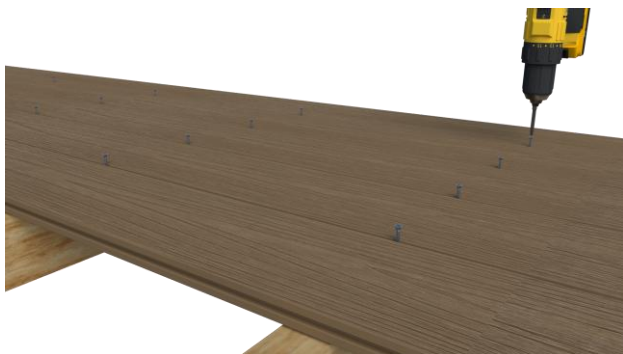
ProLock clip in the groove, screwed down 2 mm



Next board pushed into position



Next board pushed into position



Lay 5–10 boards before fully tightening screws (optional).



Rip the final board to fit if required, then face fix with oversized, countersunk clearance holes at every joist or maximum 450 mm centres.

Squareness check: measure diagonals or from first to last board every few rows — small errors compound quickly across a wide deck.





Installation — Mini Gap clip

The Mini Gap system delivers a tighter board-to-board gap. Before installing the first board, ensure you've calculated your decking spans and completed the deck frame.

1. **Fix the Start/Stop Clips.** Fix the PermaTimber® Start/Stop Clips into the joists, aligned along the length of the deck.
2. **Slide in the first board** against the Start/Stop Clips, ensuring the clips are positioned into the manufactured grooves of the board.
3. **Fit the Mini Gap clips.** Slide them into the grooves of the board, place a screw in the **outer hole** of each clip, and secure the screw into the joist. Use only one screw per clip. Secure each clip with a DFX005 screw for timber subframes or a DFX006 screw for steel subframes.
4. **Place the Anti-Creep clip** on the middle joist of each board to manage expansion and contraction, one per board.
5. **Push the next board** into the clips after all clips are secured. Use a rubber mallet and tapping block, if required, to secure the boards firmly into the clips. Repeat for each board until the deck is complete.
6. **Face fix the final board.** Pre-drill before face fixing into each joist, drive at 90°, and keep fixings at least **40 mm** from the board's ends and edges.



Insert the Mini Gap clip



Clip in the groove



Next board pushed into position



Next board pushed into position



SECTION 10

Installation — Starting Installation from a Wall

The following installation method applies to all clip types approved for use with the PermaTimber® 146 CX decking range. Always ensure the selected clips and fixings are suitable for the supporting substructure and installation conditions.

1. Position a Start/Stop Clip on the first joist, maintaining a minimum 3 mm clearance from the wall, and secure it with the appropriate screw. Repeat this step on the last joist.
2. Stretch a string line or snap a chalk line between the front edges of the first and last Start/Stop Clips. Use this line to mark the correct clip position across all remaining joists.
3. Install the remaining Start/Stop Clips along the marked line. Start / Stop Clips must be installed and securely fixed to every joist. Carefully engage the first decking board into the Clips, angling the board slightly if required, and gently push it into position.
4. Continue installing and securing the remaining boards using Section 8 and Section 9.



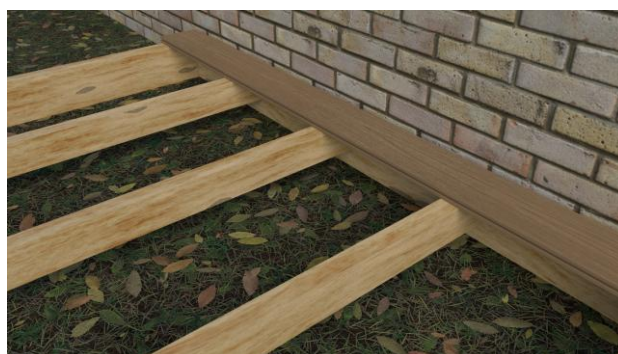
Position Start/Stop Clip



Align and mark the Start/Stop Clip positions across all joists



Decking board positioned



Decking board pushed securely into position.



Close-up showing the board correctly engaged with the Start/Stop Clip



SECTION 11

Edge Finishes

Edge boards can be installed either horizontally or vertically, depending on the deck edge detail and your preferred finish.

- Make sure the edge board **overhangs the deck frame** enough to cover the fascia or exposed structure underneath.
- When installing edge boards **vertically**, be aware that debris may collect inside the board cavity over time. Allow for cleaning and maintenance access where required.



Horizontal edge board



Vertical edge board



SECTION 12

Finishing Options

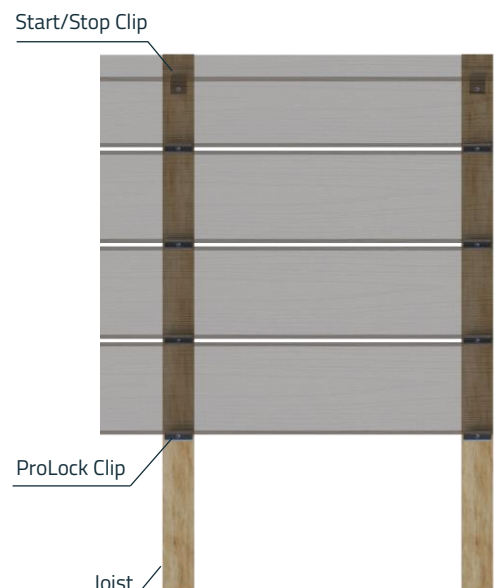
A range of finishing methods can be used for the corners and exposed edges of your PermaTimber® deck. Select the option that best suits the deck design and your preferred finished appearance.

The following examples demonstrate finishing options using the PermaTimber® ProLock fixing system.

No framing



Installed Deck – Top View



Transparent Deck – Fixing Detail

No framing with fascia board



Installed Deck – Top View

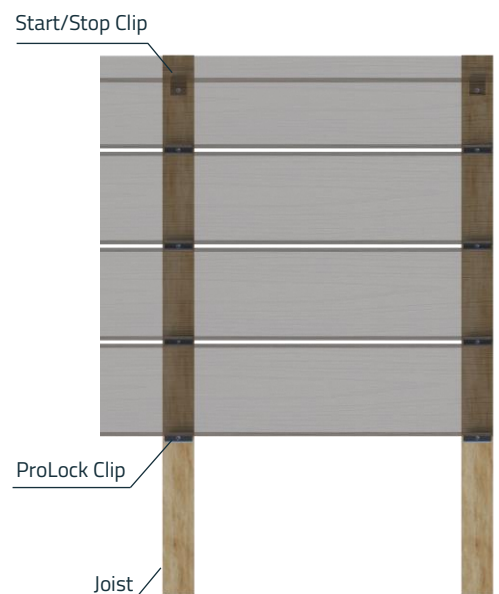


Transparent Deck – Fixing Detail

Single border



Installed Deck – Top View



Transparent Deck – Fixing Detail

Single border with fascia board

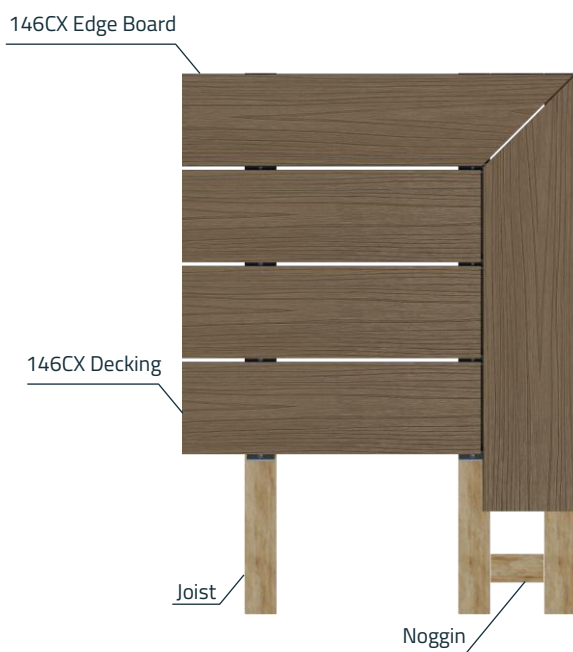


Installed Deck – Top View



Transparent Deck – Fixing Detail

Picture framing

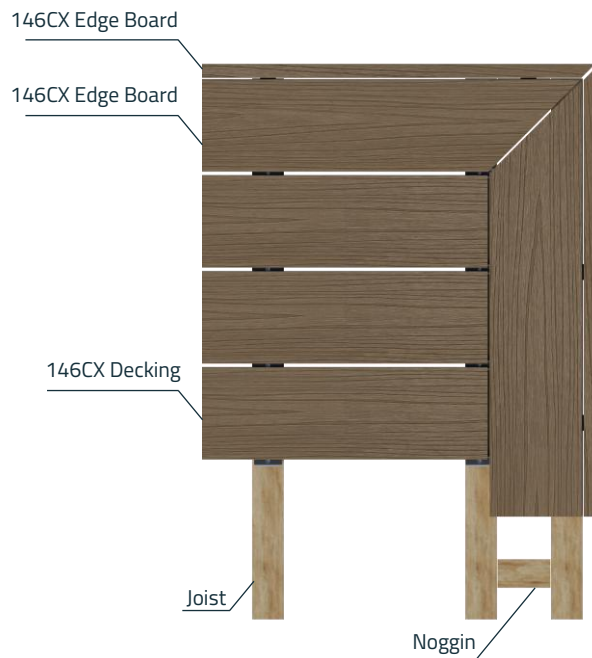


Installed Deck – Top View



Transparent Deck – Fixing Detail

Picture framing with fascia board



Installed Deck – Top View

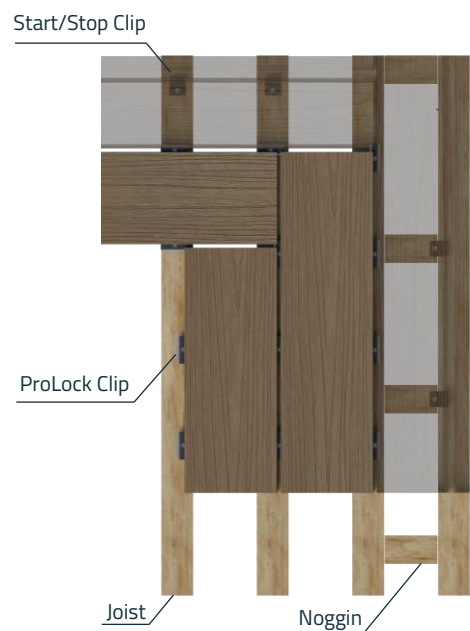


Transparent Deck – Fixing Detail

Herringbone detail



Installed Deck – Top View

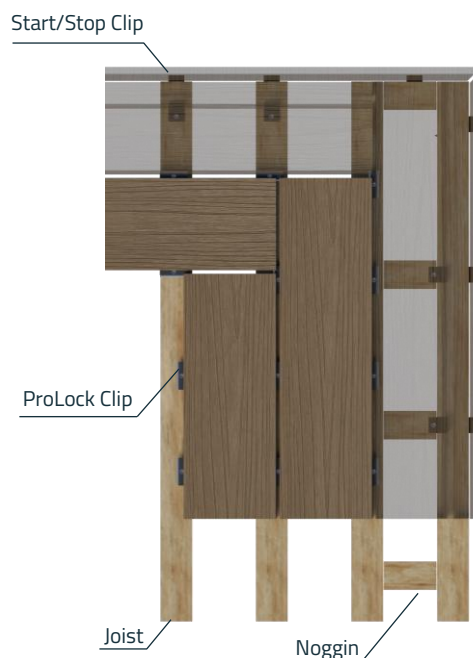


Transparent Deck – Fixing Detail

Herringbone detail with fascia board



Installed Deck – Top View



Transparent Deck – Fixing Detail

SECTION 13 Care & Maintenance

Everyday care

- **Cleaning:** simply hose the deck down and use a brush to remove any stubborn stains. A light pressure cleaner with mild detergent can also be used.
- **Furniture:** fit protective caps to chair legs so pulling and pushing chairs doesn't scratch the deck. We are not liable for marks from items placed on the deck without protection.

Tannins when new

When new, residual tannins may be visible in the wood-fibre component of the board. These may leach out the first few times the deck gets wet. They can be removed by washing with water multiple times, or will disappear naturally as the boards are wet and dried several times. See our care guide for more on tannins.

Complete care guide: a full guide detailing how best to clean and care for your decking is available on our website. Visit www.permacomposites.com.

Quick reference

Task	How	How often
General wash	Hose down; brush stubborn marks; light pressure cleaner + mild detergent if needed	As required / seasonally
New-board tannins	Wash with water; repeat wet/dry cycles until clear	First weeks only
Furniture protection	Protective caps on all chair and table legs	At installation

This image shows a full page of blank graph paper. The grid consists of small, equal-sized squares formed by thin, light gray lines. There are 20 columns and 20 rows of squares, creating a total of 400 square units. The lines are evenly spaced and extend across the entire area of the page, leaving no margins or additional markings.



Alternative, **Clever**

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