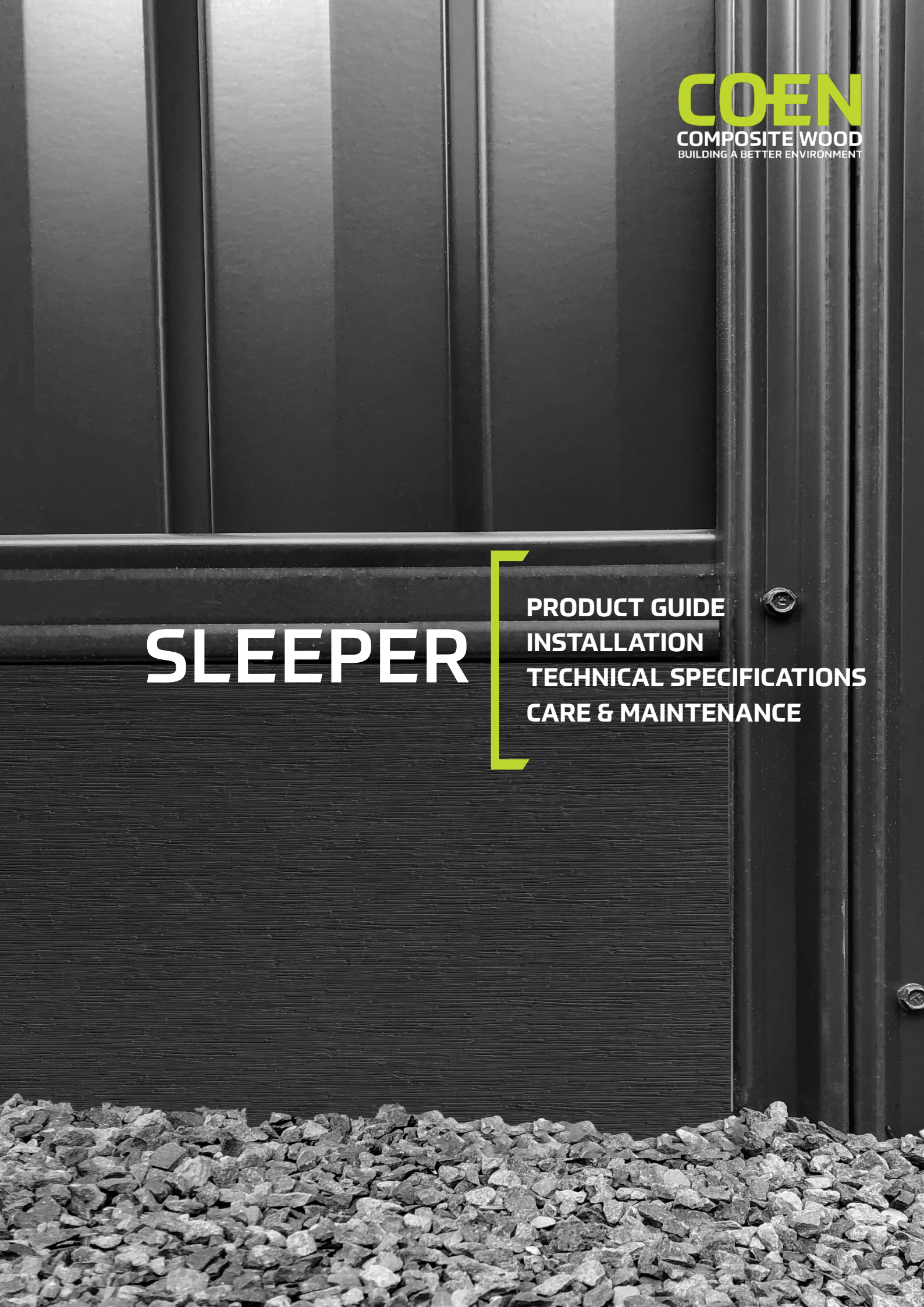
COEN
COMPOSITE WOOD
BUILDING A BETTER ENVIRONMENT

SLEEPER

PRODUCT GUIDE
INSTALLATION
TECHNICAL SPECIFICATIONS
CARE & MAINTENANCE



SLEEPER

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IMPORTANT NOTE – READ ALL SECTIONS BEFORE INSTALLATION

CONTENTS

Note:
Before installing any COEN composite sleeper product, consult your local building codes to ensure compliance with specific regulations or restrictions. The diagrams and instructions provided in this guide are for illustrative purposes only and should not be considered a substitute for professional advice. All construction involving COEN products must comply with applicable local zoning and building codes.

Please note: The consumer accepts all risks and liability associated with the installation and use of this product.

Safety Guidelines
As with any construction project, proper safety precautions are essential. COEN recommends the following safety gear when handling, cutting, and installing its products:

* Gloves
* Respiratory protection
* Long sleeves and pants
* Safety glasses

Use of additional protective equipment may be required depending on the work environment.

Recommended Tools
COEN products can be worked with using standard woodworking tools. For best results, use blades with carbide tips. When fastening, use stainless steel or approved coated deck screws.

Installation Environment
Ensure your installation surface is clean, flat, smooth, and structurally sound. Always verify compliance with local building codes before beginning installation.
If installation is delayed, store COEN products on a flat surface — never on uneven ground.

Planning Your Project
Careful planning will help you achieve the best results.

To avoid issues:

* Create a detailed site plan before starting construction
* Review local building and zoning requirements
* Factor in layout, drainage, and access

Tip: Before using a pressure washer on your sleepers, test it on a scrap piece to ensure it won't damage the product's coating.

Construction Limitations
COEN products must not be used as:

* Structural columns or support posts
* Beams or joist stringers
* Any other primary load-bearing components

All COEN products must be installed on a compliant substructure.

Heat & Fire Exposure
COEN products may be affected by high surface temperatures from external heat sources, including fire and reflected sunlight. A particular concern is Low-Emissivity (Low-E) glass, commonly used in energy-efficient windows. These windows reflect sunlight, which can cause extreme heat buildup on nearby surfaces.
This excessive heat — beyond typical environmental exposure — may result in:
* Melting or warping
* Sagging or discolouration
* Accelerated weathering
* Increased expansion and contraction

If you suspect Low-E glass may impact your COEN installation, please contact the glass manufacturer to explore options for reducing or eliminating heat reflection.

Fastening Guidelines
To ensure a secure and clean installation of COEN products:
* Screws must be driven at a 90-degree angle into the product surface.
* Toe-screwing is not permitted. If a straight angle isn't possible, install an additional support proper screw placement.

Chalk Lines:
Only use white chalk or guides like string lines or straight boards for marking.
Do not use coloured chalk — it can permanently stain COEN surfaces.

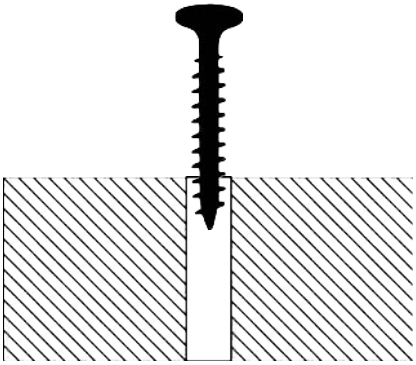
Screw Type:
* Always use stainless steel screws for face-fastening.
* Composite-specific screws are strongly recommended for the best finish.
* If face-fastening results in bulging or "mushrooming", gently tap the affected area with a rubber mallet to flatten it and achieve a clean appearance.

Using screws not designed for composite sleepers may result in damage. If you're unsure which fasteners to use, consult COEN for guidance.

Pre-Drilling
When fastening COEN sleepers, it's recommended to pre-drill holes slightly larger than the screw shank. This allows the material to expand and contract naturally with temperature changes, helping to prevent cracking or deformation.

Refer to the diagram below for visual guidance on proper pre-drilling technique.

5mm



7mm

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SLEEPER PARTS

PRODUCT	PURPOSE	IMAGE
GEN 2 SLEEPER	Sleeper, used in general applications	
POLYMER SLEEPER	Sleeper, used in high moisture and heat environments	
'C' POST*	'C' Post, used for sleeper installation	
'H' POST*	'H' Post, used for sleeper installation	

*Not supplied by COEN

SLEEPER SCREWS*

PURPOSE	TIMBER FIX	METAL FIX
Used when installing sleepers (Screws not included, sourced/ supplied by builder/ installer)		

*Note: All screws are based on our recommendation and if the installation requires something different than what is shown, a professional should be consulted before installing. The following installation guide will use the above screw sizes.

SLEEPER COLOURS

GEN 2 COLOURS*		
CHARCOAL	MARINE TEAK	BEACH
		

POLYMER COLOURS*		
CHARCOAL	MARINE TEAK	BEACH
		

*Colours are a reference only and may vary to actual product.

Expansion and Contraction Values

COEN Sleepers will experience expansion and contraction with changes in temperature. Expansion and contraction are most significant where extreme temperature changes occur.

Fastening the Sleepers according to the gapping requirements noted in the following table accommodates for this movement.

LENGTH IN METERS

INSTALLATION TEMPERATURE IN CELSIUS	1	1.8	2.4	Gap (mm) To leave Between Boards *
10	1.2	2.7	3.9	
15	1.4	2.5	3.4	
20	1.2	2.2	2.9	
25	1.0	1.8	2.4	
30	0.8	1.5	2.0	
35	0.6	1.1	1.5	
40	0.4	0.7	1.0	
45	0.2	0.4	0.5	

PLEASE NOTE:

The above shows the overall gap required. If the boards have a gap at each end, then halve the value shown

CALCULATION: Gapping = Coefficient of Linear Expansion (CLE, °C) x Length of the Board (m) x (Max. or Min. Temp. in your region - Installation Temp. °C)

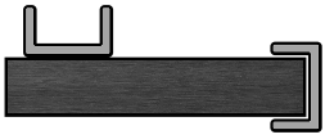
RETAINING WALL / GARDEN BED

For retaining wall and garden bed construction, we recommend the use of hot-dip galvanised steel posts suitable for external and in-ground applications, in accordance with relevant Australian Standards.

1.8 m sleepers must be supported by four (4) posts in total:
One post at each end, with two intermediate posts installed at 450 mm centres, providing equal support along the sleeper length.

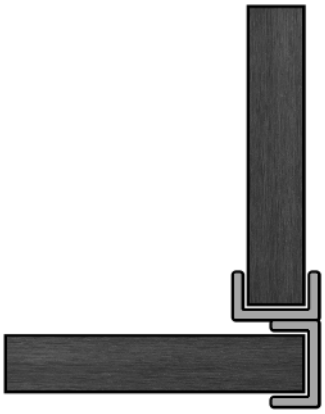
2.4 m sleepers must be supported by four (4) posts in total:
One post at each end, with two intermediate posts installed at 600 mm centres, providing equal support along the sleeper length.

The examples shown below are top-down views only and are provided for general illustration of post types.

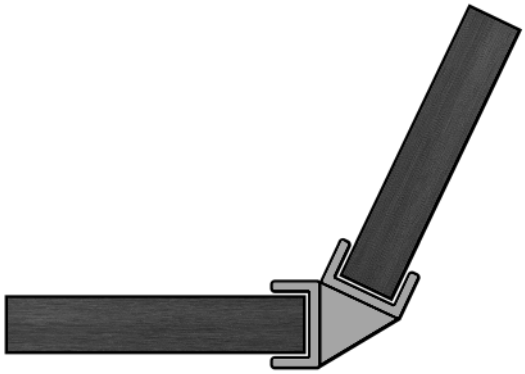


Midway Support + 'C' Post

'H' Post



Corner Post



Angle Post

Installation Note

A qualified building professional should be consulted prior to the installation of retaining walls. COEN sleepers are designed for retaining walls up to a maximum height of 600 mm only and must not be used to exceed this height.

SLEEPER RETAINING WALL / GARDEN BED INSTALLATION

Installation Procedure

1) Design, Codes & Approvals
Confirm need for council approval, generally, if the wall holds back soil over 1 m high (measured from the lowest natural ground level to the top of retained soil), approval and possibly engineering certification are required.
If the wall is high, close to structures/boundaries, or supporting surcharge loads (vehicles, buildings, driveways), an engineered design must be prepared to comply with AS 4678. A structural engineer should be engaged in these instances.

2) Planning & Site Preparation
Measure and mark the wall alignment using stakes and string line.
Check underground services (e.g., call "Dial Before You Dig" or similar service).
Clear and level the area where the wall will sit, remove vegetation, debris, and unstable soil.

3) Excavate & Prepare Footings
Excavate for posts and base, posts typically require holes of diameter ~450 mm or greater and depth dictated by wall height/engineer design.
Compact the footing area and, if needed, lay a crushed rock base or concrete footing to support sleepers and prevent settlement.

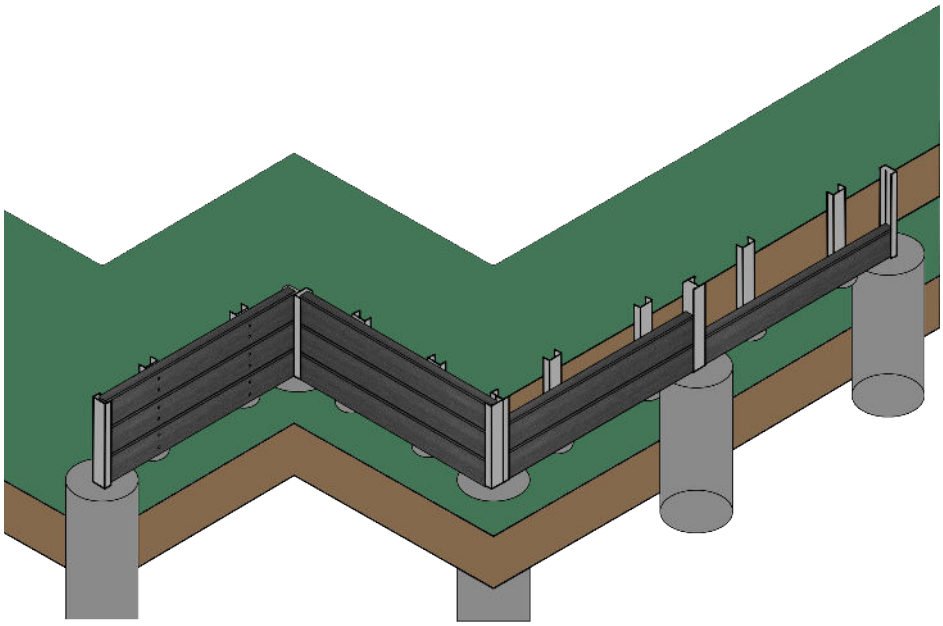
4) Install Support Posts
Position steel H-posts or similar sleeper supports vertically at designed intervals
Ensure posts are plumb and aligned using a spirit level and string line.
Pour concrete into post holes, holding posts in place while it cures, follow engineer/supplier recommendations for concrete strength & curing time.

5) Lay Sleepers
Insert the first (bottom) sleeper into the posts, ensuring it is level and sits firmly on the base or pad.
Stack subsequent sleepers as needed, keeping them aligned and level.
Face fix sleepers through upright centre supports, ensuring a clearance hole is pre drilled into the sleeper, do not over-tighten fixings; ensure sleepers are seated correctly before final tightening.

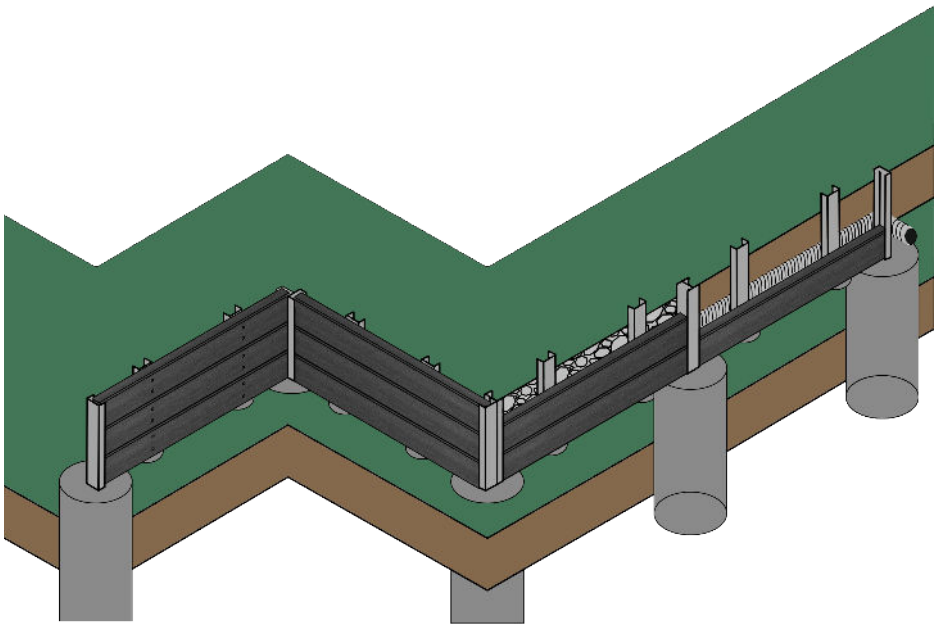
6) Drainage & Backfill
Install drainage pipe (e.g., socked agricultural pipe) at the base behind the wall to collect and lead water to a legal point of discharge.
Backfill with free-draining material such as 20 mm gravel up to ~200-300 mm from the top, this helps relieve hydrostatic pressure.
Compact backfill in layers as you go to avoid voids and movement.

7) Completion & Inspection
Finish backfilling with soil or mulch as required for landscaping.
Check alignment and level of the completed wall, and fill any gaps.
If council approval was required, ensure the final inspection and certification process is completed by an accredited certifier.

SLEEPER RETAINING WALL / GARDEN BED INSTALLATION

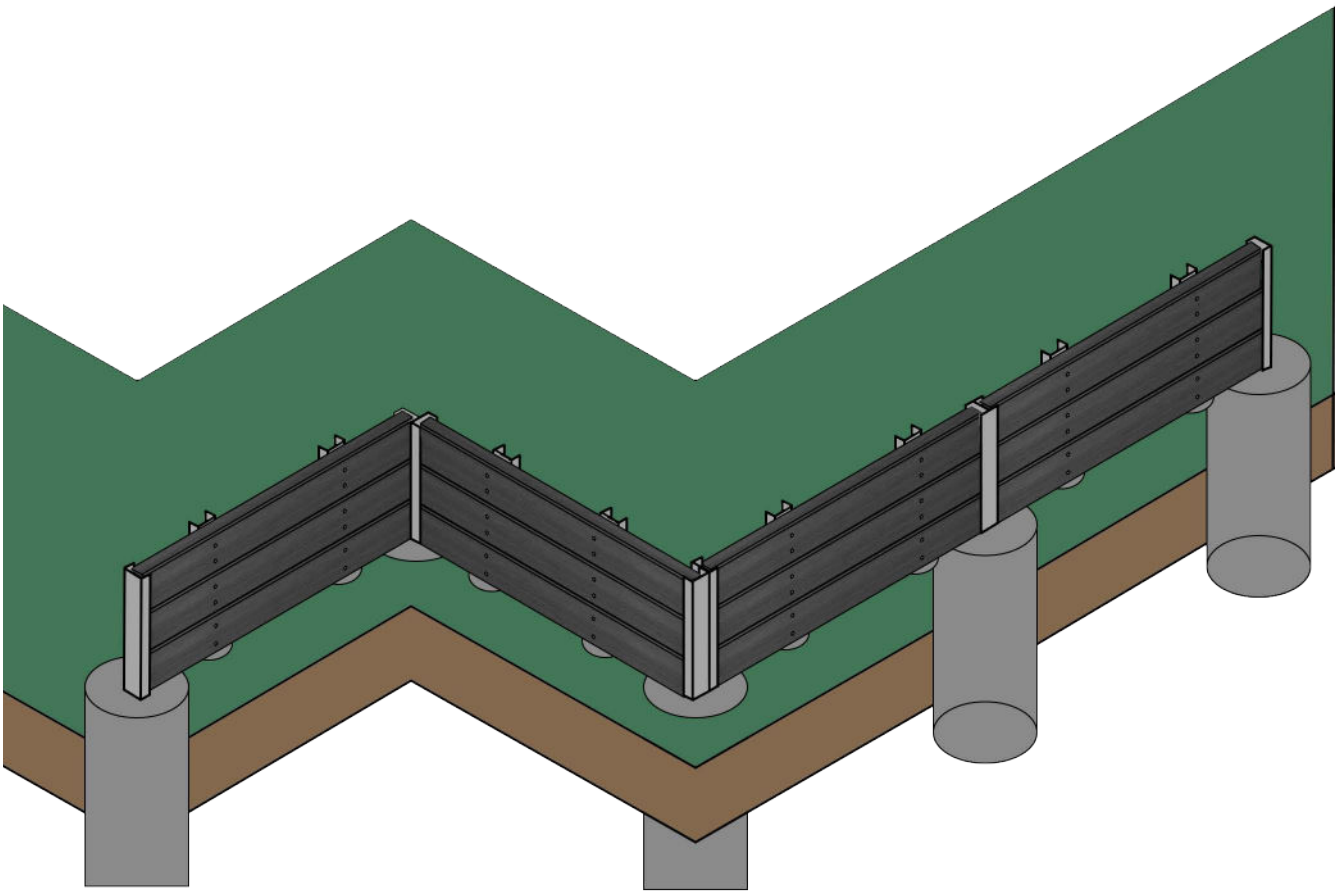


Measure and set out the support post locations.
Concrete the posts into the ground, ensuring they are plumb and correctly aligned. Set out the sleepers in position once the concrete has cured.



Install drainage pipe at the base behind the wall to collect and lead water to a legal point of discharge.

SLEEPER RETAINING WALL / GARDEN BED INSTALLATION



All sleepers must be fixed with two supports, positioned at 450–600 mm centres. All fixings must be installed through pre-drilled clearance holes in the sleeper to allow for thermal expansion and contraction of the material. Sleeper installation is now complete.

SLEEPER UNDER FENCE INSTALLATION

Installation Procedure

Pre Installation - Scope & compliance
This installation is non-structural and does not retain soil.
Finished height is one sleeper only (typically 150–200 mm).
The sleeper does not form part of a retaining wall and does not support fence loads.
No drainage or engineering is required as no soil is retained.
Installation must not obstruct natural surface water flow.

1. Set out
Establish the fence line using string and stakes.
Confirm the sleeper will sit below the bottom fence rail.
Confirm fence posts are independently founded in the ground.

2. Ground preparation
Remove grass, roots, and loose material along the fence line.
Excavate a shallow trench:
Approx. 50–75 mm deep
Wide enough to fully support the sleeper
Ensure the base is level and firm.

3. Base support
Install a thin compacted crushed rock or sand bed:
25–50 mm thick
Level and compact to provide uniform support.
A concrete base is not required.

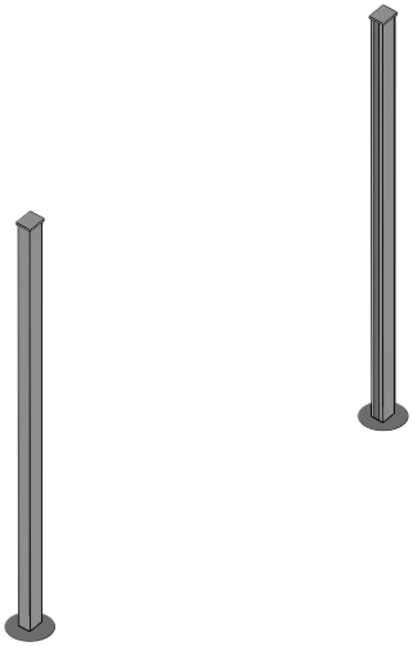
4. Install sleeper
Place the sleeper into position beneath the fence.
Ensure the sleeper is: level, straight, evenly supported along its length
Maintain a small clearance to fence posts if required to allow for movement.

5. Fixing
Fixing is required at 5 points through the bottom rail of the fencing.
A slight clearance hole in the bottom rail will allow thermal expansion for the sleeper.
A pilot hole is required in the sleeper to ensure it doesn't split.
The screw must penetrate through **two** internal webs of the sleeper.
Once the screw is in place you must add a dab of a flexible sealant to make the join water tight.

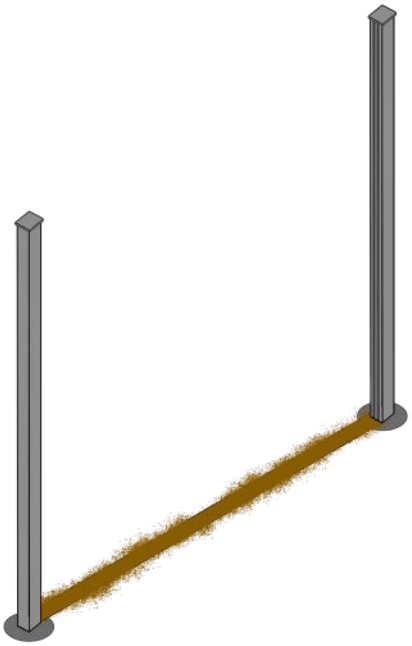
6. Finish
Backfill both sides with soil or landscaping material.
Lightly compact by hand.
Ensure surface water can drain freely.

7. Final checks
Confirm the sleeper is not holding back soil.
Confirm fence posts are not bearing on the sleeper.
Confirm the sleeper is purely decorative.

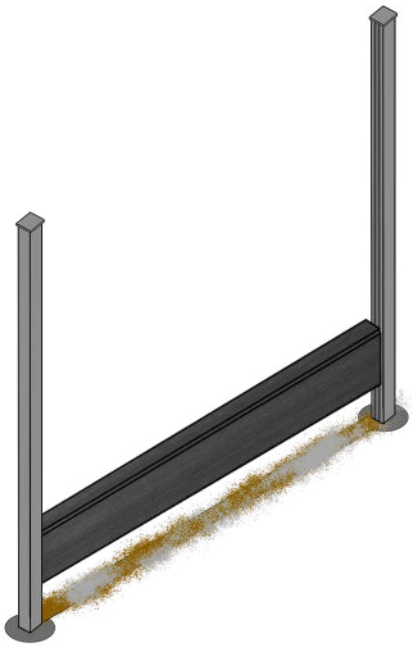
SLEEPER UNDER FENCE INSTALLATION



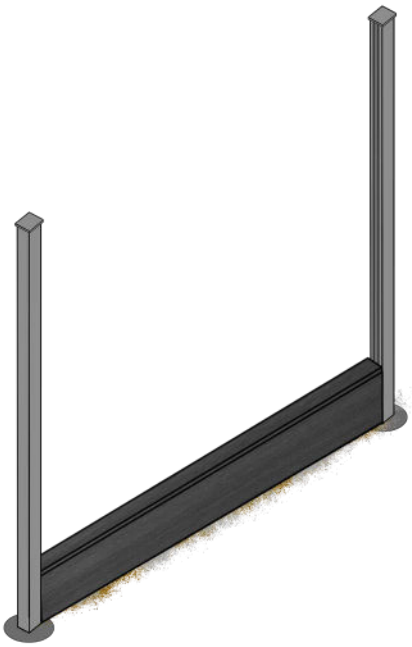
1. Set out posts at correct distances



2. Prep the ground

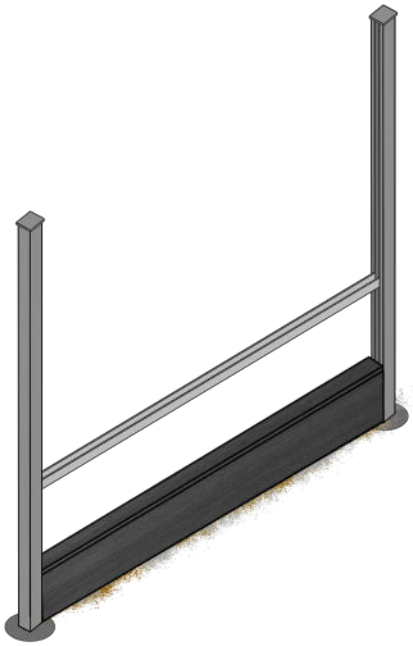


3. Add crusher dust to ensure the sleeper is on a flat surface.

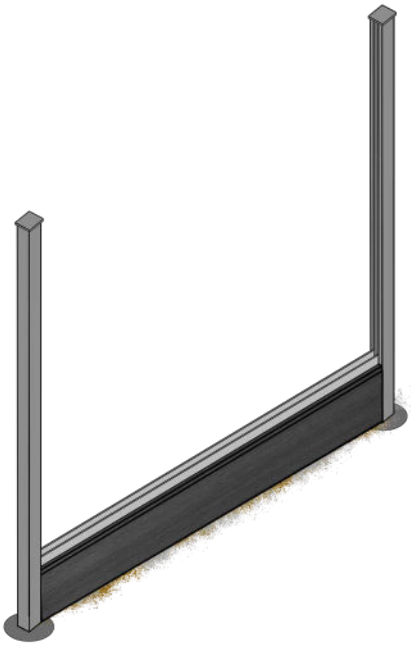


4. Inset sleeper into position ensuring it is fully supported and is level

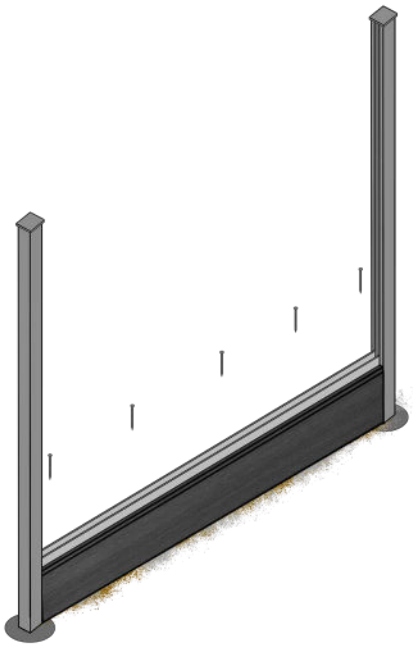
SLEEPER UNDER FENCE INSTALLATION



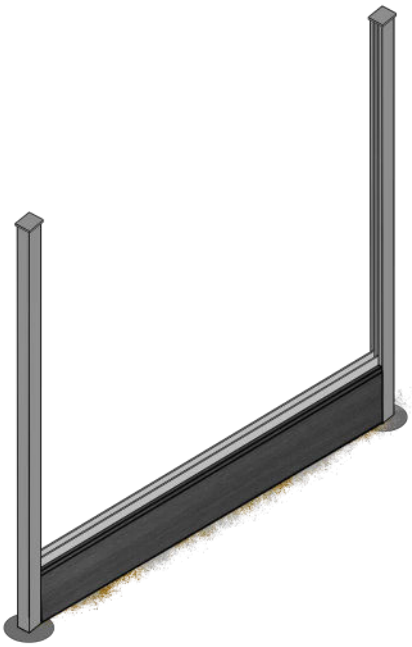
4.1 Slide the bottom rail into place



4.2 Fix the bottom rail into place ensuring it is level and aligned to the other systems

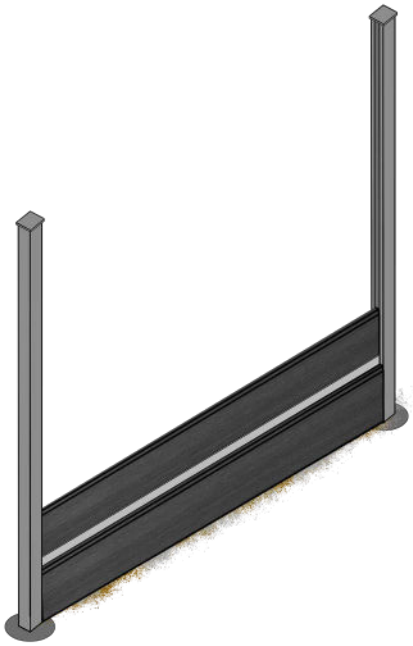


5. Fixing is required at 5 points through the bottom rail. A clearance hole is required in the bottom rail, and a pilot hole in the sleeper

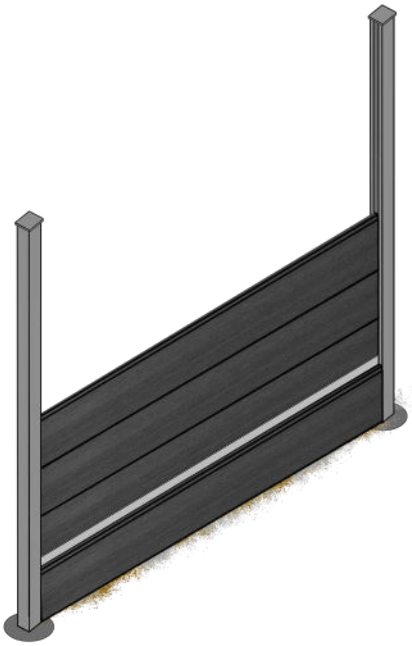


5.1 The screws must go through 2 internal webs of the sleeper. A sealant must be added to the bottom rail where the screws have been fixed.

SLEEPER UNDER FENCE INSTALLATION



6. Backfill and lightly compact by hand, then add the first fencing panel.



6.1 Continue adding fencing panels, ensuring they are aligned to the system on either side.

7. Finish adding fencing panels. Confirm the sleeper is not holding back soil. Confirm fence posts are not bearing on the sleeper.

7.1 Finish the fence by adding the top rail and fixing it into place.

TECHNICAL TABLE

TECHNICAL SPECIFICATIONS	GEN 2 SLEEPER	POLYMER SLEEPER	Comments
Dimensions and Weight	200 x 50 x 1.8 or 2.4 9 kg / 12 kg	200 x 50 x 2.4 6KG	Brushed Finish
Boards / Pack	70	70	
Support centers (min & max distance) – Domestic	300 to 600	300 to 600	
Support Post size min	40 x 25	40 x 25	
Minimum end-gap (butt join)	4mm	4mm	
Screw distance from Sleeper edges	40 x 25	40 x 25	
Fastening screws			Screws must comply with AS 3566 Self Drilling Screws for the Building and Construction Industries.

STORAGE

Storage is simple. Store flat, in a dry area, under cover and out of the sun. Keep your COEN products wrapped in the packaging it arrives onto site. If you need to store your COEN products for a longer than expected period of time, or have a delay in your project, call us at COEN and we'll store your product for you at an agreed price & period of time.

CARE AND MAINTENANCE

Following our easy-care tips will ensure that your Sleepers remain the envy of your friends and neighbours for years to come.

NORMAL CARE

COEN composite wood products require periodic cleaning to keep them looking great. For dirt, dust and other residue, simply brush with a soft broom. If necessary, wash the Composite Wood down in the direction of the grain with a garden hose or a pressure washer, no more than 1,500 psi.

PROBLEM	SOLUTION
Dust and Dirt	Wash with hot soapy water and soft scrubbing brush
Mildew	Use a deck washing product or hot soapy water. Never mix any other cleaners with the deck washing product. Vinegar can be used to kill the mould.
Chalk Stain	Except white, other colours cannot be removed once on the surface, so avoid the use of chalk. Use hot soapy water with a stain-bleaching agent to wipe off.
Ice or snow	Use calcium chloride or rock salt to melt ice or snow and wash with hot soapy water.
Dirty spots or soiling	Apply a detergent with oxalic acid or phosphoric acid to spots and wipe clean after 10-15mins.
Oil	Clean immediately with a household degreasing detergent and hot soapy water.
Berry or wine stain	Scrub and dilute the stains with a mix of bleach and hot soapy water before rinsing with water.
Ink Smudge	An ink smudge is unlikely to be removed. Scrub and dilute the stains with a mix of bleach and hot soapy water before rinsing with water. This may dilute the smudge.

Note: Please note that some cleaners can lighten the colour of your composite wood, so always test any cleaner on a small portion before cleaning the entire surface.

ADDITIONAL TIPS

- Clean wall paneling regularly in order to prevent dust accumulation.
- Remove marks or stains immediately or they may become more difficult to remove after a period of time.
- Never apply harsh solvents such as acetone, gasoline, benzene, carbon tetrachloride or paint thinner.
- Never mix two or more cleaning agents when cleaning your composite wood products.
- Keep the area around your composite wood product clean and well ventilated.
- If you have any further queries, please call us at COEN – 1800 105 031 or email info@coen.com.au

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