



Natural wood  
Made to last

## Installation Guide Clear Decking and Boardwalk

2024-01-01



# Installation Guide

## **Kebony**

Kebony supplies decking materials that must be used in Use Class 3 (EN 335), for outdoor use above the ground and not in contact with the soil. This guide provides instructions for installing **Kebony Clear Decking** and **Kebony Clear Boardwalk** in order to produce an attractive and durable result. Local conditions and building regulations must always be taken into consideration. This guide assumes that the installer has the necessary professional competence.

Kebony is a modified wood product in which the timber's properties are permanently changed and enhanced through an eco-friendly process without the use of toxins. Our process yields a stable, hardwearing, long-lasting and beautiful decking material. Kebony wood will behave like natural timber and will swell and shrink along with changes in the environment in which it is installed.

It is recommended to use the principles of constructive wood protection for the entire construction and solutions for untreated timber outdoors. Pay particular attention to the design and execution of end-grain and ventilation and avoid moisture traps. In this guide, we show examples of good solutions that adhere to these principles.

Kebony products must be stored dry until installation and should be covered in plastic until use.

## **Appearance**

Kebony decking has a dark brown colour when supplied. Once the decking has been exposed to rain and sunlight over time, the surface will change and gradually develop a natural silver-grey patina. Since the effects of weather around a building can vary, there will also be variation in how the wood changes colour due to different orientations. Physical global location and local climate will also have an influence on the tempo and appearance of weathering. Some surface cracks and fissures are natural in timber that is installed outdoors without surface treatment. Initially, the runoff of rain from a Kebony surface will have a dark colour that may be visible on some light surfaces.

## **Timber and Metal**

Kebony can be combined with stainless and acid-proof steel, enamelled or coated fittings and aluminium without the timber becoming discoloured. When using other combinations, the runoff from Kebony timber may cause discolouration and corrosion. For example, zinc fittings can corrode, while copper ones will remain bright where exposed to runoff from the wood. Runoff from galvanised or ferrous metals to Kebony will result in a dark discolouration of the wood.

Fastenings in contact with the timber must be made from acid-proof (A4) or stainless (A2) steel. A4 is generally recommended and must always be used in coastal areas and environments exposed to chloride. Screws of a different quality or use of A2 in the wrong environment may result in dark discolouration around the screw holes.

## **Extended warranty**

Kebony decking is covered by a long warranty against damage by decay through mould. It is a condition of the warranty that the directions in this installation guide are followed. Where concepts that must be emphasised are specified, this is required for validity of the extended warranty.

## Kebony Clear Decking

Kebony Clear is available in profiles with and without side slits.

Kebony decking is installed on wooden or aluminium beams, with a minimum of a 3-beam span.

Distance bands, clips or similar must be used to provide a minimum distance of 6 mm between the decking above and beams below. This reduces moisture accumulation and improves ventilation. **Kebony RASK clips** or the **Kebony Distance Band** is recommended, the last mentioned also increasing comfort and reducing noise from the deck.

Decking boards must be installed so that the side with rounded edges faces upwards.

For profiles without side slits, top fastening should be used (edge fastening must not be used), and screw holes must be predrilled before fastening. It is important not to countersink the screws into the decking boards. The screw must be flush with the surface of the timber. Recommended screw sizes are minimum 5x50 mm for 22 mm thick decking and 5.5x80 mm for 38 mm thick decking. For profiles with side slits, use **Kebony RASK clips** or similar for hidden fastening. Installation using clips is described at the end of the guide.

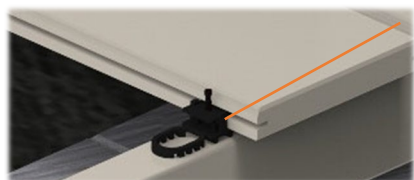


Figure 1: Kebony RASK clip.

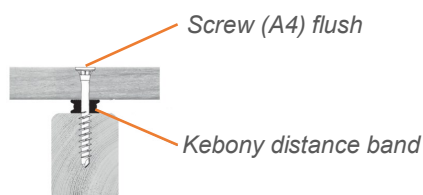


Figure 2: Kebony Distance Band installation.

**Kebony Clear Decking** can be worked with, cut and sanded and can also be used with wooden plugs using a glue suitable for outdoor use.

For stairways, ramps and end-pieces, decking boards without side slits must be used. This will avoid breakage of the side edge and produce a better finished appearance. On decking subject to high traffic, with a risk of heavy loads on the edge of boards or high point loads, profiles without side slits must be used.

To use hidden fastenings in such places, a plate joiner or similar can be employed to create a slot for a **Kebony RASK clip**, and, where appropriate, **Kebony RASK Start/End clips** can be used in end pieces.

**Kebony Clear Decking** weathers quickly after installation outdoors when exposed to the elements. A surface colour change from brown to grey normally takes place over the first year, while surface cracks and fissures develop within the first months of installation. This is a natural process for timber.

### Minimum spacing gaps

- Between decking boards: 6 mm
- Against building: 15 mm
- Skirting boards and ends of boards: 5 mm

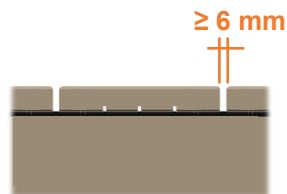


Figure 3: Board spacing

Kebony is dried during production, and some swelling must be anticipated after installation. This applies to both the length and width and will be especially visible at mitred corners if this is not allowed for.

TIP: For decks with high traffic, such as public facilities, a larger spacing gap between decking boards is recommended to simplify cleaning.

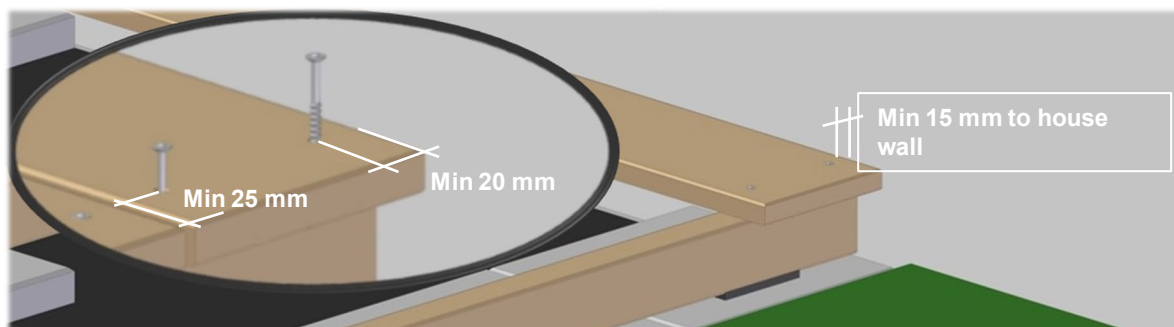


Figure 4: Distance from building & screw positions

### Ends and joints

For an attractive result, all ends should be neatly cut and finished with a small chamfer or bevel.

It is recommended that all ends are treated with **Kebony End-Sealing Wax**. This both protects the wood and reduces the risk of ends splitting.

Sharp edges at the ends of boards are to be rounded or bevelled, this reduces chipping and provides a more comfortable surface to walk on. TIP: Use an edge router with a rounding radius of 3-5 mm.

Board-ends should always have an overhang over the last beam, do not end it flush with or directly on a beam.

Longitudinal decking joints must (where ends of boards meet) be made over two beams. There should be a gap of at least 5 mm between the board ends to allow them to dry out and to give the wood room to expand.

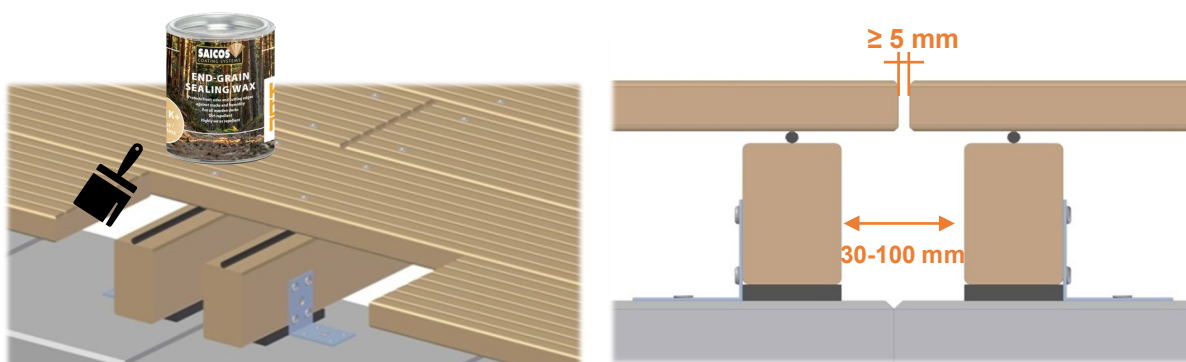


Figure 5: Decking board, sealed with Kebony End-Sealing Wax and installed with Kebony Distance Band joined over two beams. This method secures a long lifetime and simplifies cleaning.

## Beams

### Maximum recommended beam spacing (c/c), ordinary deck (\*)

Kebony Clear Decking, 22 mm:	50 cm
Kebony Clear Boardwalk, 38 mm:	110 cm

\*With a 2.0 kN concentrated load and a decking board installed over minimum 2 spans, the maximum deflection is 5 mm. With higher loads, the beam spacing must be reduced.

The beams are attached to the substrate/substructure and stiffened. Where it is not possible to attach the beam to the substrate, a torsionally rigid structure using crossbeams must be made.

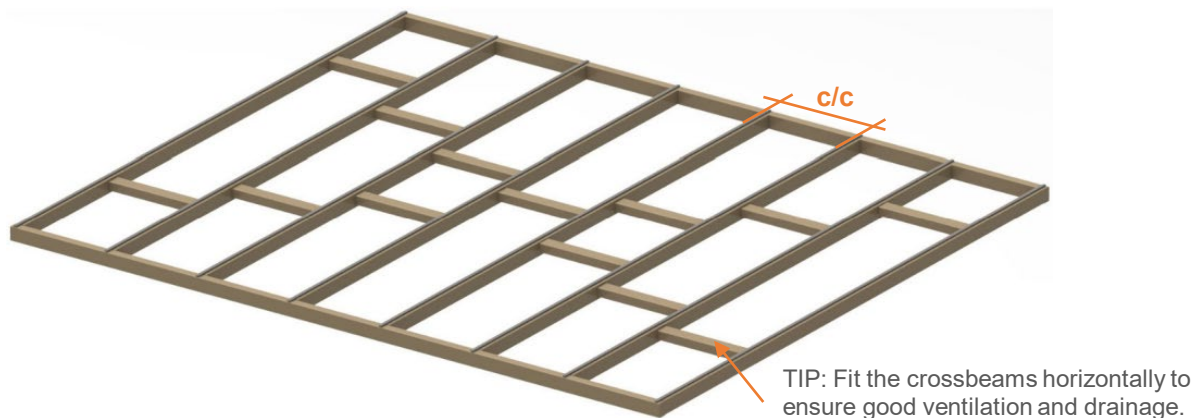


Figure 6: Example of stiffening of underconstruction.

## Ventilation

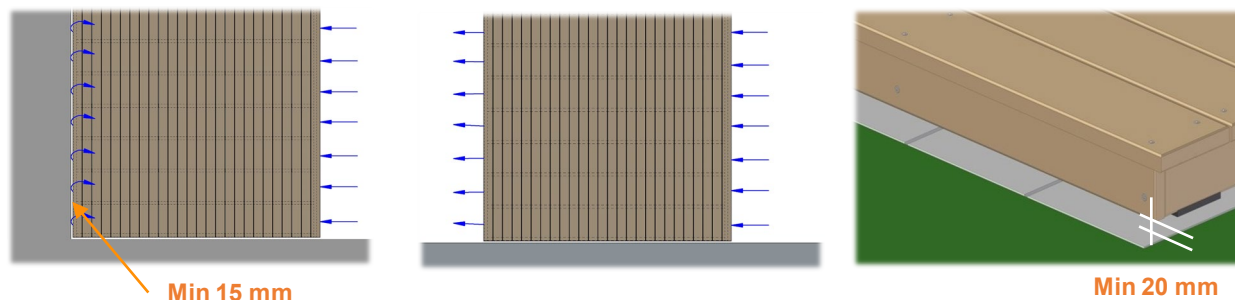


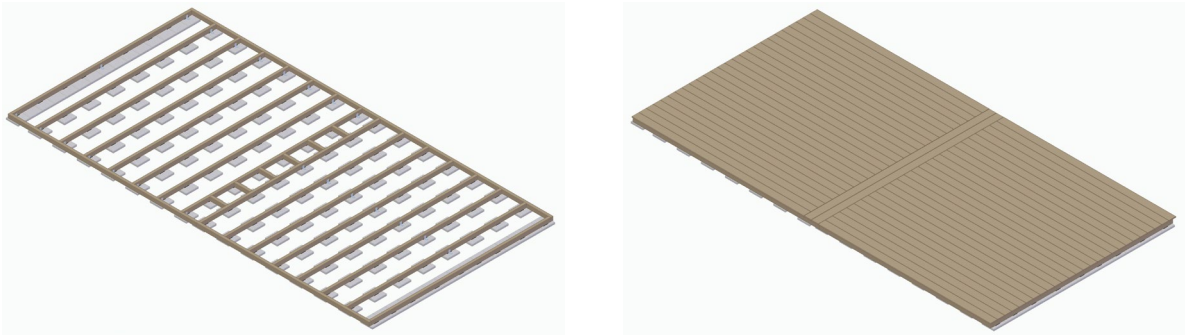
Figure 7: Ventilation design & minimum spacings

The structure below the decking must be sufficiently ventilated so that any wood that gets wet can quickly dry out again. This can be achieved by having openings along at least two sides so that the air can circulate beneath the decking. If one of the sides is against a wall, there must be an opening of at least 15 mm between the wall and the end of the decking. Any skirting board must finish at least 20 mm above the ground/substrate to allow air to circulate. For large decks, damp environments or poor airflow, additional measures must be taken to ensure adequate ventilation, such as the use of the **Kebony Ventilation Profile**.

## Planning

- All structures must comply with local regulations.
- For decking adjacent to buildings, the substrate must slope away from the building or be drained so that surface water is effectively removed.
- The substructure is recommended to be made from materials of equivalent or better longevity than the decking to ensure that the entire structure is durable.
- To prevent water from pooling on the decking, we recommend a slope along the length of the decking. If the deck is built without a slope, more care and maintenance is to be expected.
- To prevent moisture migration in the structure, a capillary barrier should be used between different types of materials. This protects the structure and increases its longevity.

Kebony decking boards are supplied in fixed lengths. Plan the construction to use entire lengths and make efficient use of the material. Large terraces can, for example, be divided with a cross-board. Remember to allow end-finishing as described under “Ends and Joints” when planning lengths.



*Figure 8: Example of a terrace divided into zones. Such solutions make extremely good use of material and create an exclusive appearance. Adapt the size of the zones to the length of the decking boards.*

### Decking on fixed substrates (concrete, tiles, etc.)

Decking can be installed on beams on a fixed substrate, such as concrete, tiles, membranes and similar. The substrate must have a sufficient slope of at least 1.5%, to avoid water collecting under the decking.

Decking bearers can be used, but these must always be laid in the direction of the slope. A moisture barrier must be laid between the bearers and the substrate. The distance from the lower edge of the decking to the substrate must be at least 40 mm, and adequate ventilation must be ensured.

### Decking close to the ground

The substrate must be stable and free of wet soil mass, and landscaped so that the surface water is drained or runs away from the decking. On soft substrates and soil, geotextile fabric and a draining layer must be used, such as gravel, levelled with fine gravel, at least 200 mm thick. The distance from the lower edge of the decking to the ground must be at least 100 mm. Any frost heaving measures must be assessed according to local conditions.

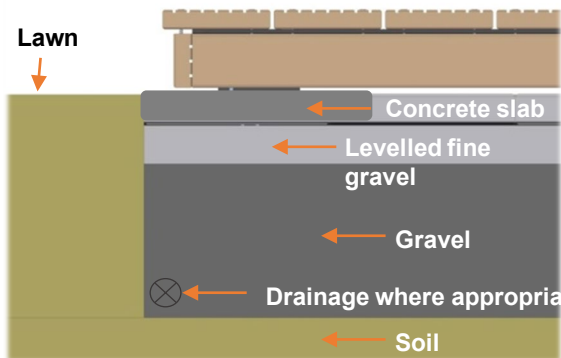


Figure 9: Substrate Design

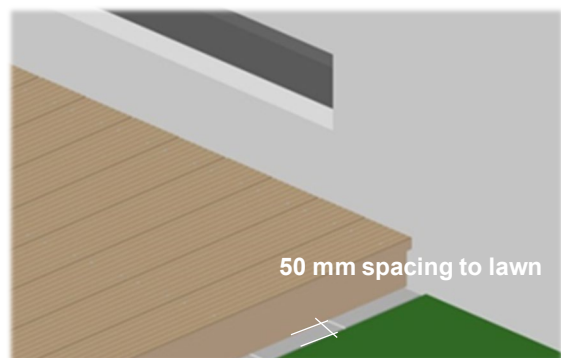
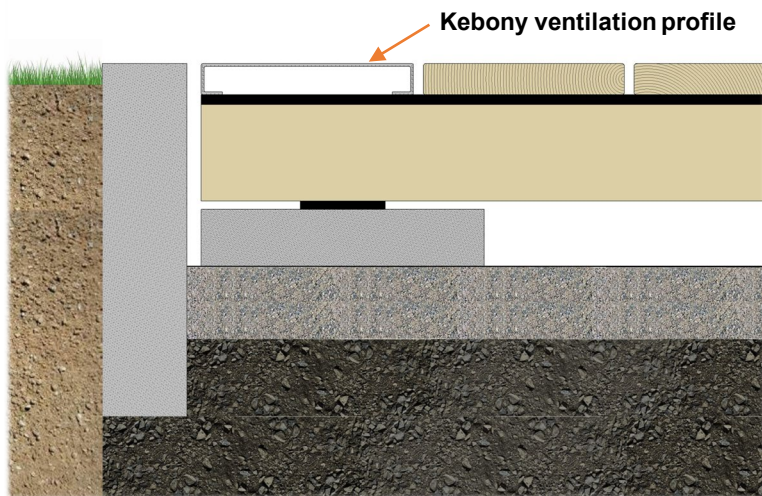


Figure 10: Spacing to grass

Ensure separation from grassy areas to prevent the decking boards from taking up moisture. This separation could consist of kerb stones, or an edge board covered with a foundation membrane. If possible, maintain a distance of at least 50 mm from the decking to the edge of the lawn, so that it is possible to cut the lawn without damaging the woodwork. Remember to have at least two open sides under the decking for ventilation. Beams close to the ground must be laid on concrete slabs or similar.

Decking close to the ground continued



For decking close to the ground or in other places where achieving sufficient airflow is difficult, the **Kebony Ventilation Profile** should be used. Remember to have at least two open sides.

Figure 11: Kebony Ventilation Profile & kerb & ventilation design

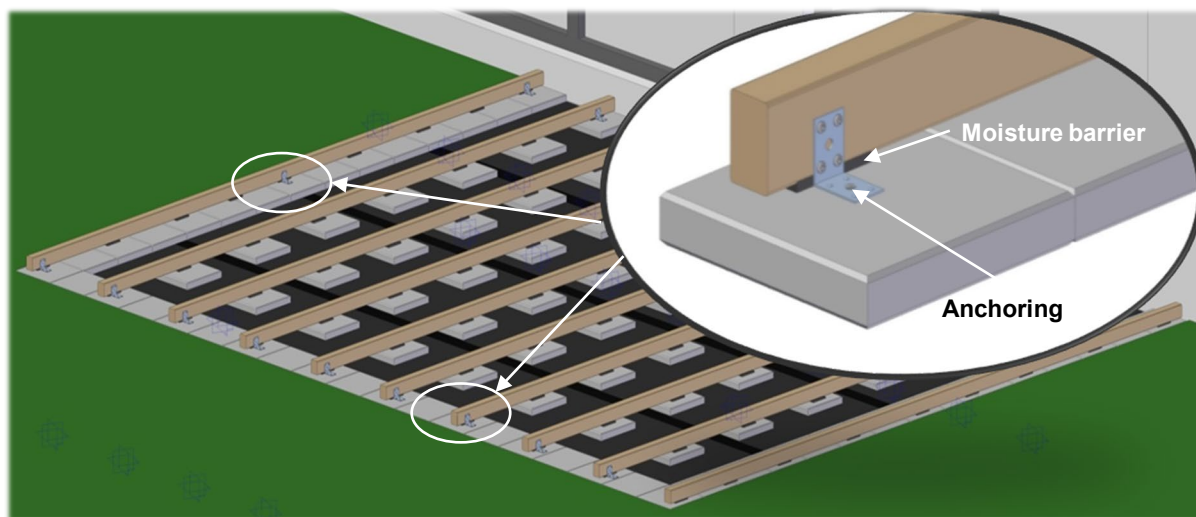


Figure 12: Example of beams at ground level. The beams are mounted on concrete slabs with EPDM spacers in between. This acts as a moisture barrier and raises the joists above the concrete slab, preventing moisture-wicking and allowing better drying of the wood. Angle brackets are used to anchor and stiffen the beams.

Decking above ground

The sizing of the beams and support structure must comply with local regulations. Cover the ground and soil mass under the decking to prevent the growth of vegetation.

Contact your local Kebony sales representative for questions and assistance with your project. See Kebony Use & Maintenance guide for care and longevity of your deck after installation.



## Installation with hidden fasteners: Kebony RASK clip Mounting clips

**Kebony RASK clips** can be combined with **Kebony RASK Start/End-clips**. Kebony RASK Start/End clips are available separately. The clips produce an automatic spacing of 8 mm between the boards and raise the decking 6 mm above the substructure, which contributes to constructive wood protection.

The decking clips are supplied with screws suitable for either wood or aluminium substructure (please specify when ordering). When using clips, the minimum recommended width of the beams is 36 mm. The supplied screws are not suitable for screwing the decking from the top.

When using decking clips, the boards are held down onto the substructure, but they are not locked longitudinally. To secure the boards against longitudinal movement, a stainless-steel angle can be fastened in the centre under the board, or alternatively the boards can be screwed from the top.

### Installation of the first row

The start/end clip consists of a base and a top and is delivered unassembled. It can be dismantled after assembly with included tool. (Figure 13)

Install the base part on the substructure with the included screw. Check that the boards in the first row are straight.

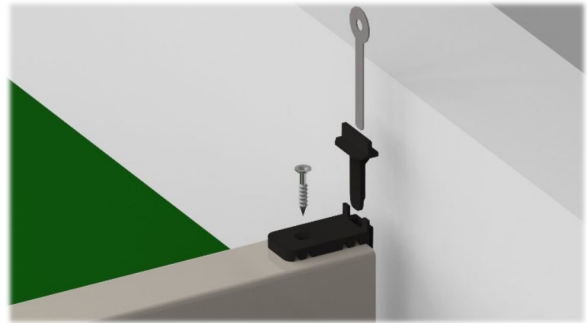


Figure 13: RASK Start/End clip with all parts.

If the edge is not visible, a modified RASK clip can often be used. (Figure 14)



Figure 14: Alternative start clip: Modified RASK clip.

After the base part of the start clip is installed, put the top part into the lower part until it first locks. Wait with adjusting the height of the top part until the first board is laid down. The tongue of the top part must face towards the first deckingboard. (Figure 15).

Once all the start/end clips have been fitted, lay the first deckingboard on the substructure and push the sideslit of the board into the Stat/End clips. Adjust the height on the tongue on the clip to fit the sideslit on the deckingboard.

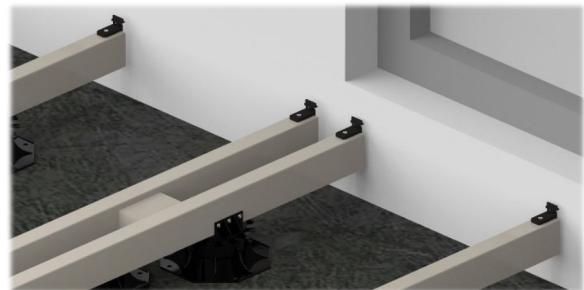


Figure 15: Fit the board on the substructure and press the clips into the holders.

## Installation with hidden fasteners: Kebony RASK clip cont.

### Installation of subsequent boards

Once the first board has been pushed into place, push the decking clips into place underneath it with the steel plate in the sideslit. Place one decking clip on each beam. Do not screw on the decking clips yet. (Figure 16)



Figure 16: First board. Do not screw the decking clips in before the next board is correctly placed.

Push board number two against the first board. Then push new decking clips in place, one for each joist. (Figure 17)

Now you can screw down the first row of screws.

Install the subsequent boards in the same way.

NOTE: The clips automatically produces a gap between the boards of 8 mm, but it is recommended to use a spacing block as an aid (figure 18).

TIP: Any boards with a slight bow can be held down using a cargo strap or clamp to assist with installation.

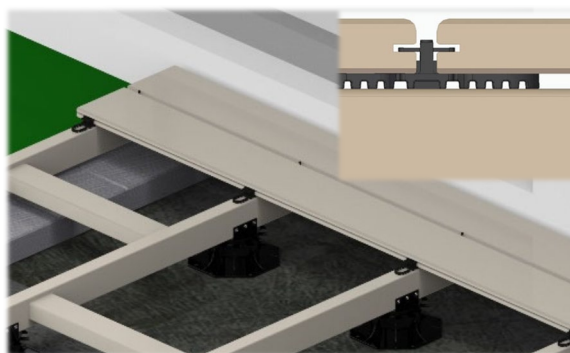


Figure 17: Installation of the subsequent boards.

### Jointing boards

If boards need to be jointed longitudinally, do this over two beams and using two clips (figure 18).

The joists must be 30-100 mm apart. A gap of min 5 mm is recommended where the two boards meet.

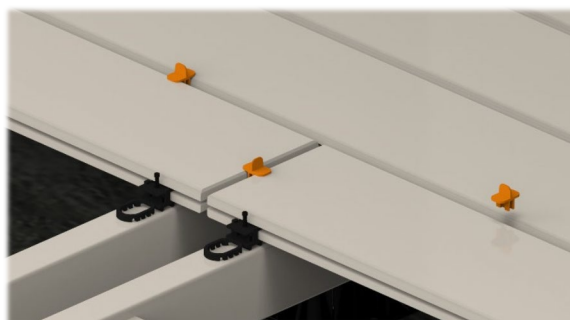


Figure 18: Jointing boards over two beams.

**Installation with hidden fasteners: Kebony RASK clip continued.**

**Installation of the last board with top fastening**

The outer side groove of the last decking board should be sawn off to prevent breakage; alternatively, use a profile without a side groove. Break of the sides on the deckingclip and use these as spacers on the end of the board (Figure 19). Pre-drill holes for the last row and fasten screws from the top. (Figure 20)

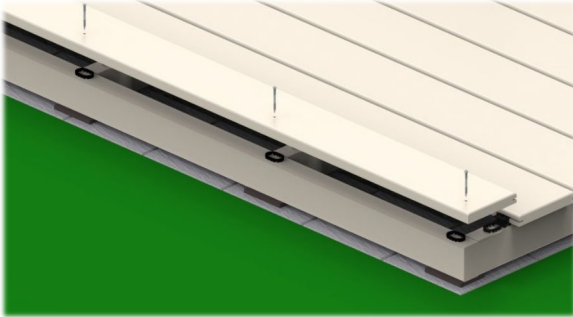


Figure 19: Place spacers on the last row.

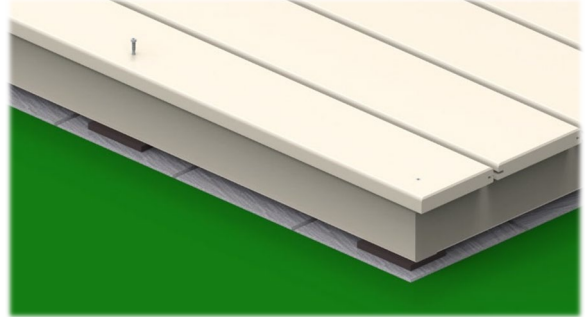


Figure 20: Fasten screws on last row.

**Installation of the last board with Start/End clip**

Place the base part of Start/End clip on the end of the beam, measure correct distance (boardwidth) between the base and the deckingclip and fasten the base (Figure 21). Insert the last board in the deckingclip and push the top part of the Start/End clip into the base (Figure 22). Break of the sides on the deckingclip and use these as spacers for the skirting board (Figure 23). Pre-drill holes and fasten the skirting board with screws (Figure 24).

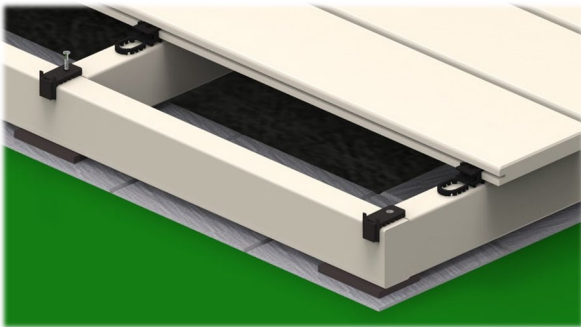


Figure 21: Place base and align with decking clips.

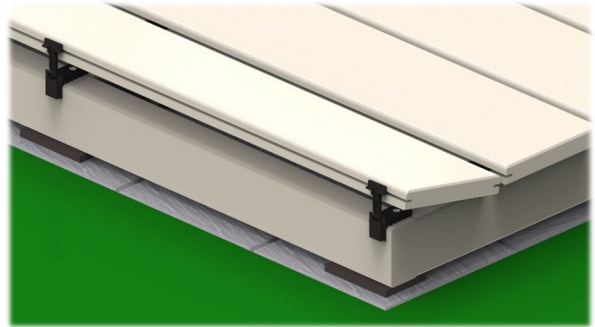


Figure 22: Install last board and push down top part of Start/End clip into base.

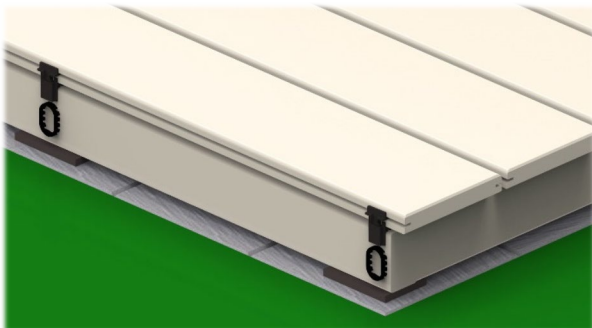


Figure 23: Place spacers.

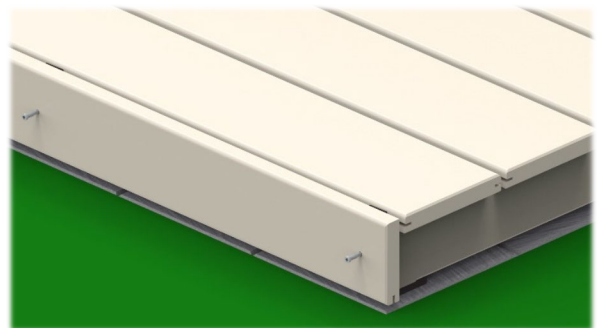


Figure 24: Fasten skirting board.