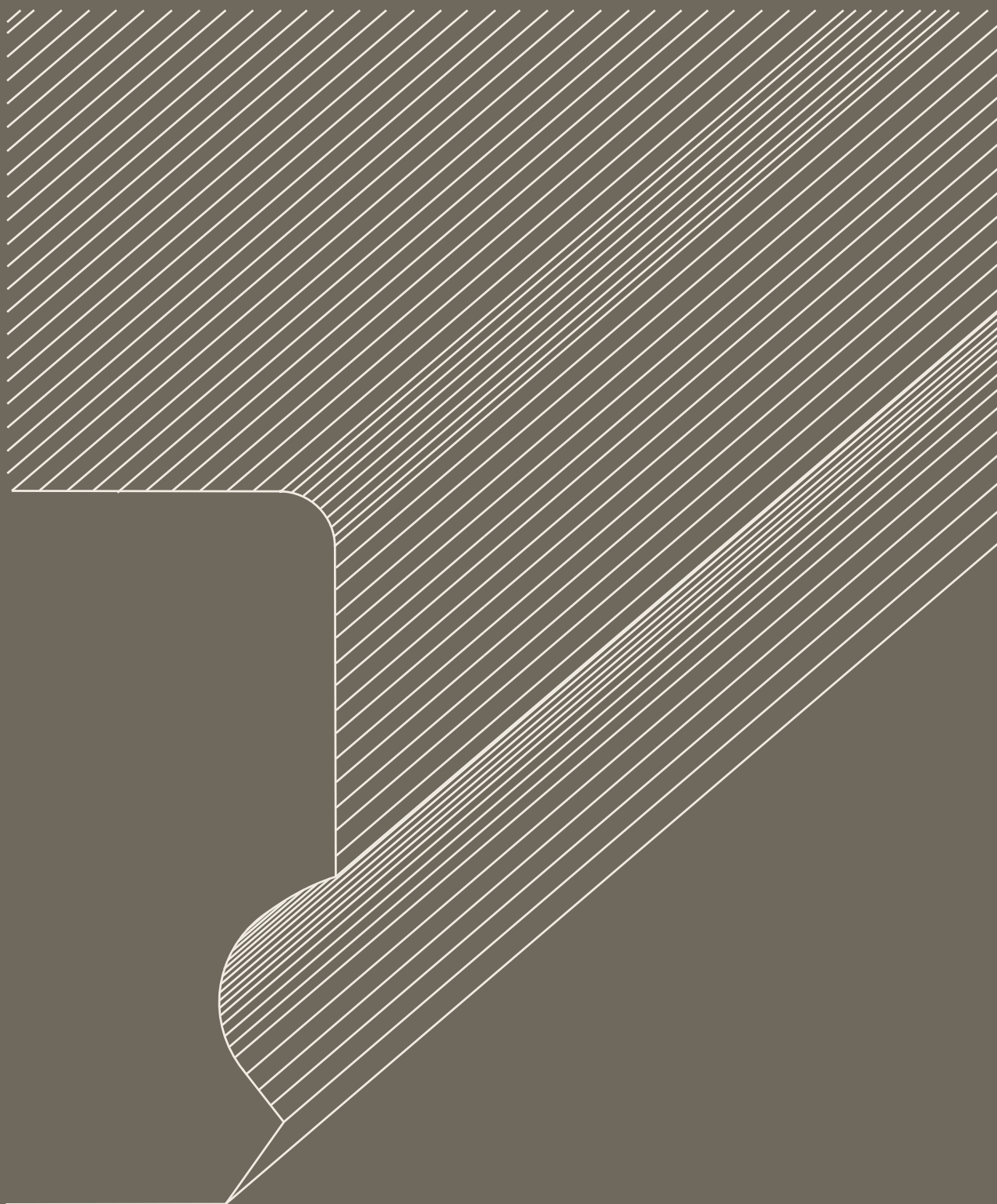




# Brolis Timber Decking Installation Instructions

Version 1.0 (2025)



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00

# Introduction

The *Brolis Timber Decking Installation Instructions* are a practical guide for your projects, based on many years of experience installing wooden products and on specific insights gained by Brolis Timber in completed projects.

Here you will find a full range of recommendations—from basic knowledge on how to install wooden decking, choose a frame or fastening system, cut and join boards, and ensure proper ventilation gaps, to more detailed architectural solutions such as decking edges, sides, railings, and pergolas, all using Brolis Timber products.

We also provide practical surface finishing and maintenance scenarios, as well as inspiring ideas for decking board patterns.

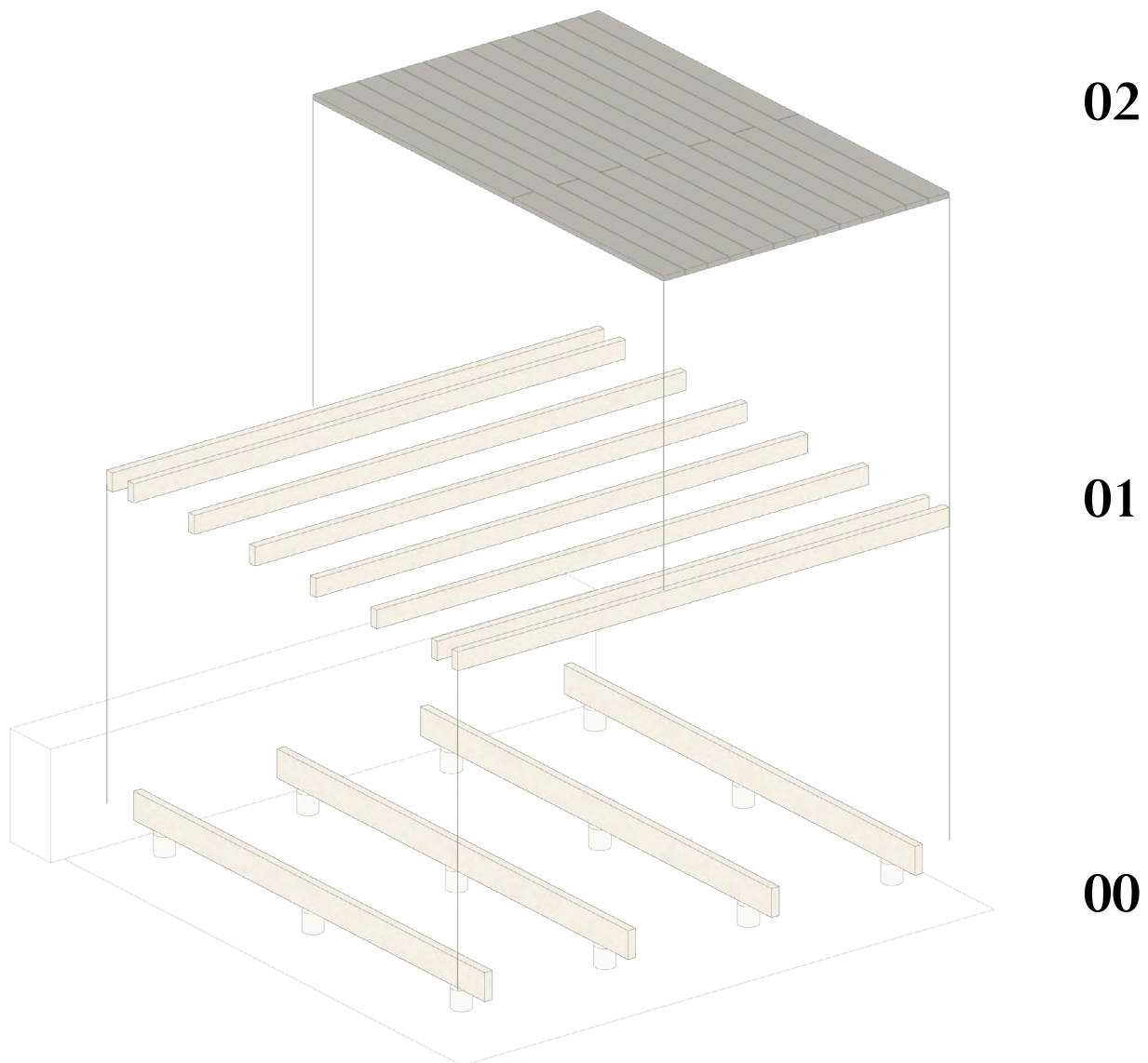
Enjoy!

Yours, Brolis



# 01 Decking

# Decking



Decking typically consists of three main elements:

**00 Supports or foundations**

**01 Frame (substructure)**

**02 Decking boards**

Proper wood ventilation is essential to ensure the longest possible service life of the decking. Use a single or double frame, preferably made from the same thermally modified wood. If necessary, aluminum or metal joists may also be used.

The frame must be stable, securely fixed to the base, and level—therefore suitable foundations or adjustable supports are required.



02

# Base and Foundations

# Decking Base Preparation

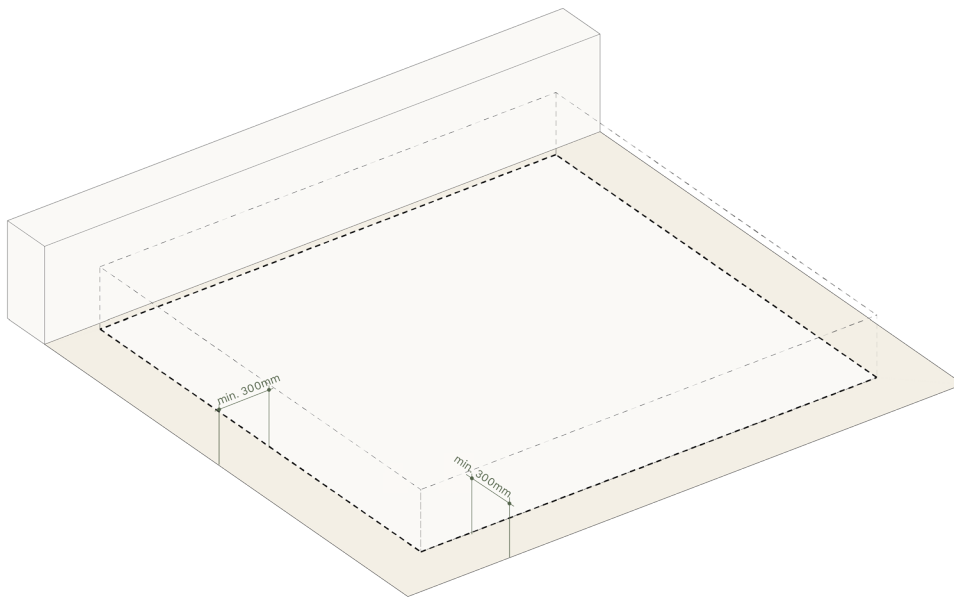


Fig. 1

Before installing the decking, prepare the base carefully—the durability of the entire structure depends on it.

- The base should extend at least 300 mm beyond the planned decking area (see Fig. 1).
- Form a minimum 2° slope away from the building to prevent water accumulation (see Fig. 2).
- If the soil has poor drainage (e.g., clay), install additional drainage.
- Remove the organic soil layer, level the surface, and compact it if needed.
- Lay geotextile fabric, secure it, and cover with a 3–5 cm layer of fine gravel to improve drainage and prevent plant growth (see Fig. 3).

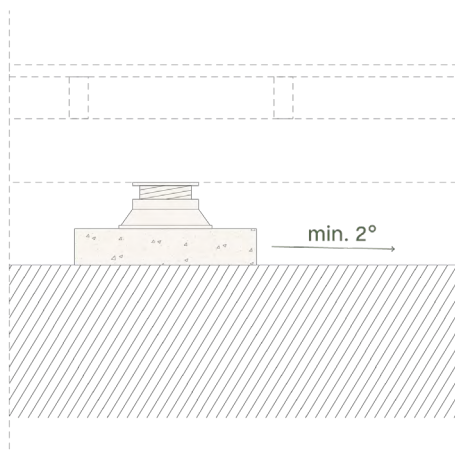


Fig. 2

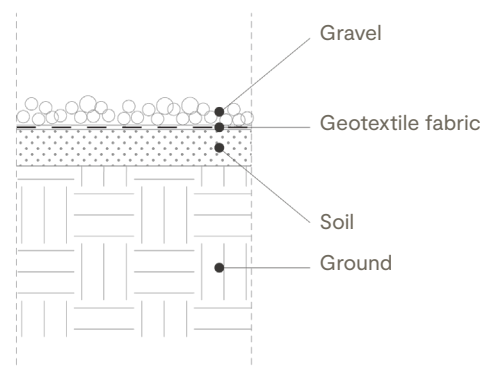


Fig. 3



**Private House** // Lithuania, 2020 // Decking Mykolas 26x117 // Architects: Flik Design // Photo: Andrej Vasilenko

# Types of Foundations

The decking frame must not be placed directly on soil. Therefore, foundation is needed.

**Main types of foundations include:**

## Screw Piles

- Recommended U or M series.  
When using U-series piles, the frame is fixed with special wood screws with a wide head, and in M-series piles – with a threaded rod, which is fixed into the hole in the upper plane of the pile.
- Length must exceed frost depth (minimum 865 mm in Lithuania).
- Maintain at least 20 mm ventilation gap between wood and pile (see Fig. 4, p. 13).

## Concrete Piers

The concreting process takes longer than installing screw piles, but it usually works out cheaper.

- Minimum diameter: 200 mm
- Minimum depth: 1000 mm or at least 200 mm below frost depth.
- Frame is fixed using threaded rods embedded in concrete.

## Plastic Adjustable Supports

Adjustable supports are suitable when it is not possible to drill piles due to underground communications, drainage, on roofing, etc.

- Suitable only for solid bases (concrete, paving, balconies).
- Use a 3–5 mm rubber pad under supports to reduce vibration and noise.
- Must be placed on a stable surface.

Fig. 1

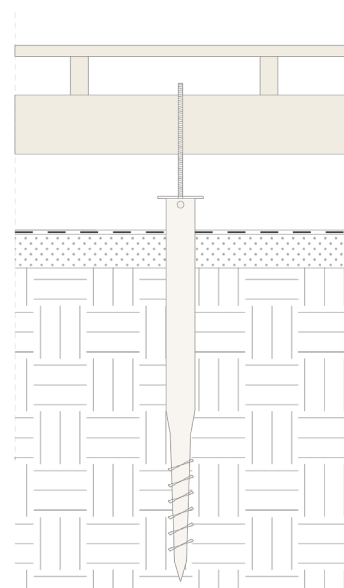


Fig. 2

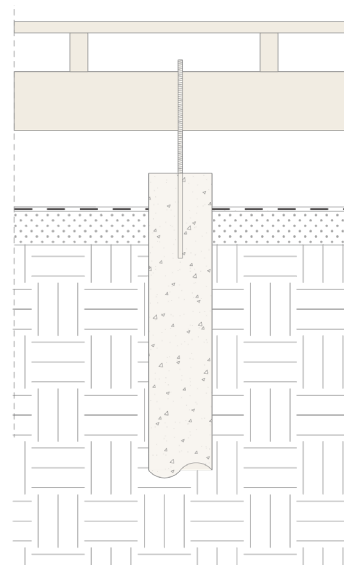
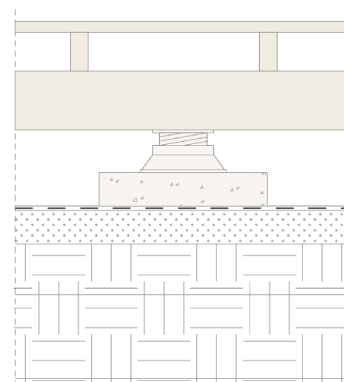


Fig. 3



03

## Decking Frame

# General Frame Installation Principles (1)

This section will cover the general installation principles applicable to all frame types.

- Decking frames can be single-layer or double-layer, depending on available height (See Fig. 1). More about this in the next section.
- Decking surface must be at least 20 mm lower than the door threshold (See Fig. 2). This will help prevent precipitation from entering the building and protect the interior floors from moisture.
- Maintain ventilation gaps:
  - $\geq 50$  mm above hard ground (See Fig. 3)
  - $\geq 100$  mm above gravel or soft ground (See Fig. 4)
- Use thermally modified wood joists when possible.
- If total height is less than 144 mm, aluminum profiles must be used.
- Aluminum frames require expansion joints every 2 meters.

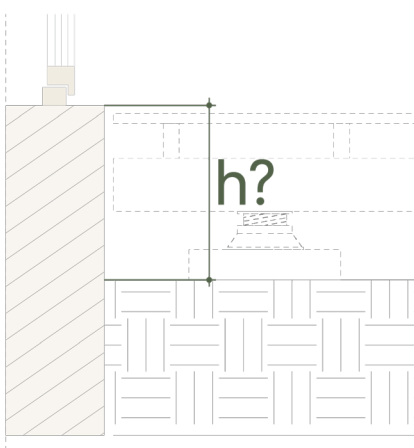


Fig. 1

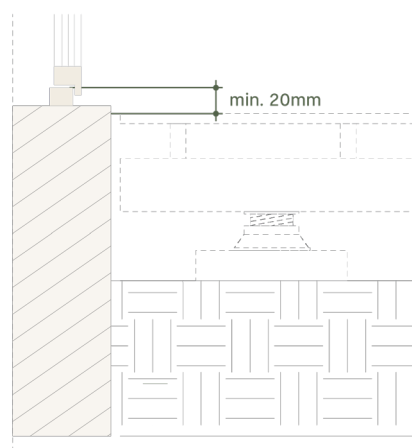


Fig. 2

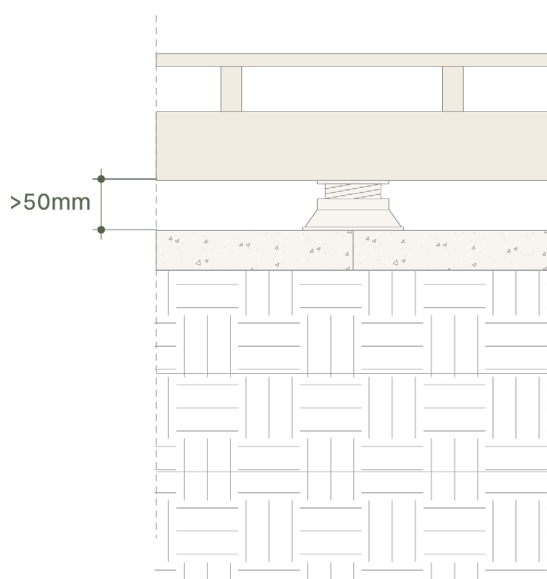


Fig. 3

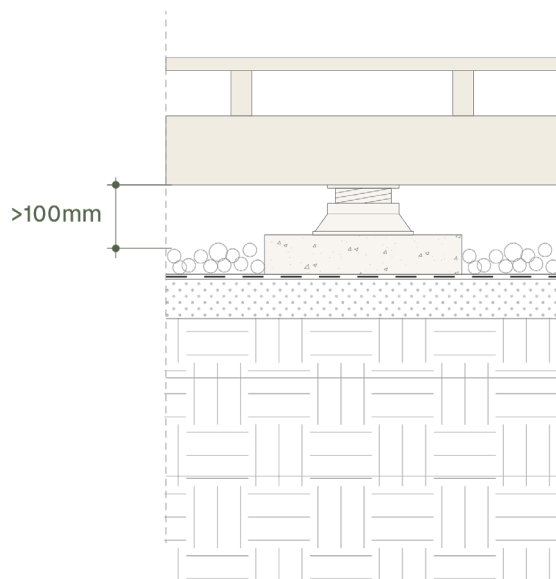


Fig. 4



# General Frame Installation Principles (2)

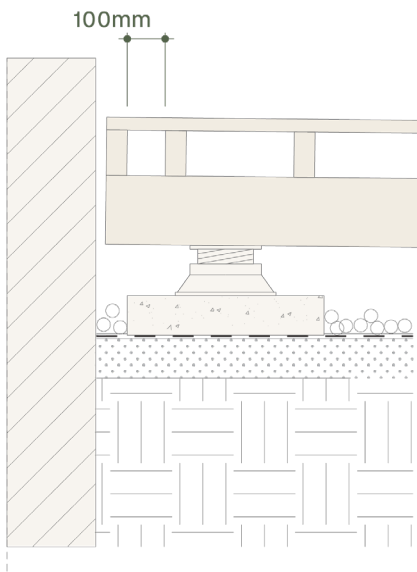


Fig. 1

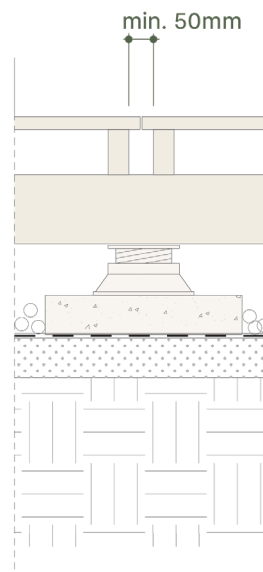


Fig. 2

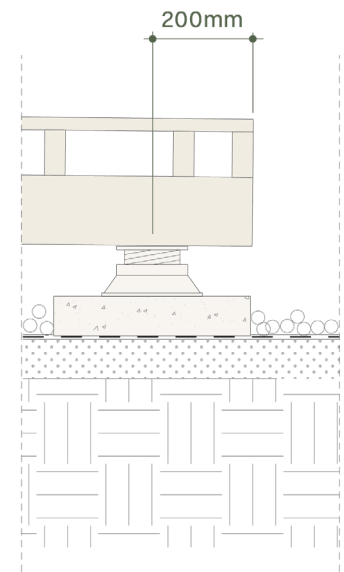


Fig. 3

Add extra joists:

- At board ends (100 mm spacing between joists, see Fig. 1)
- At board joints (minimum 50 mm gap for ventilation, see Fig. 2)
- Joists must not overhang supports by more than 200 mm (see Fig. 3)
- Leave a 20 mm gap between joists and foundations (see Fig. 4-5)

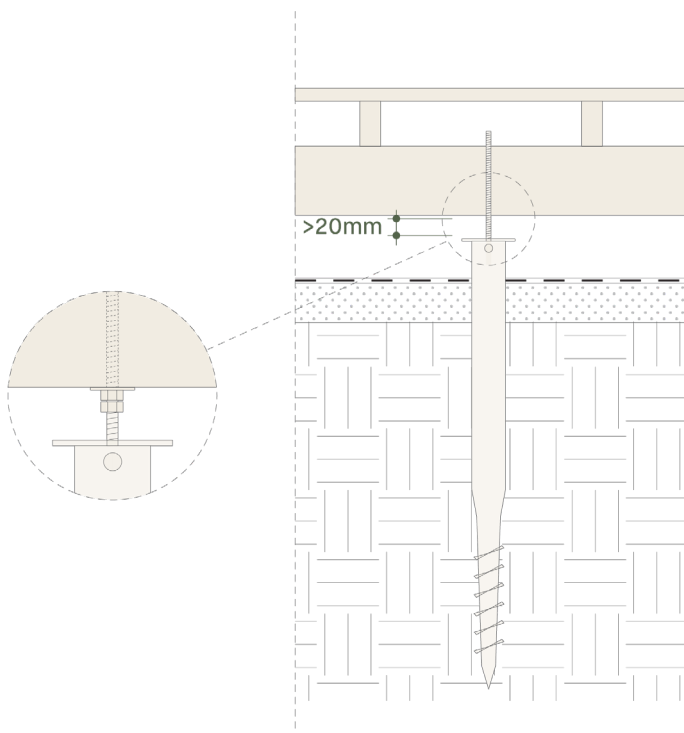


Fig. 4

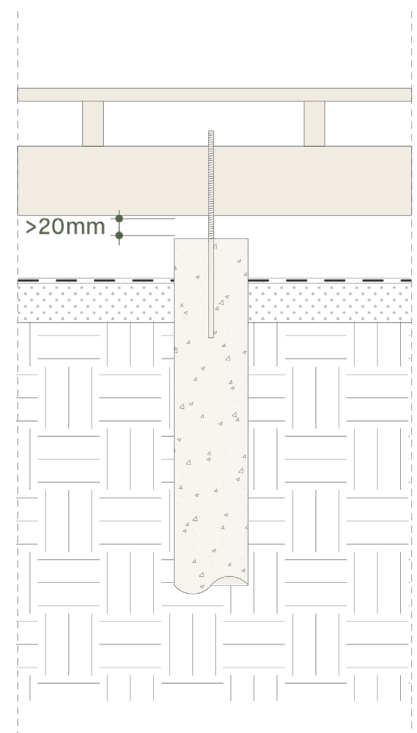
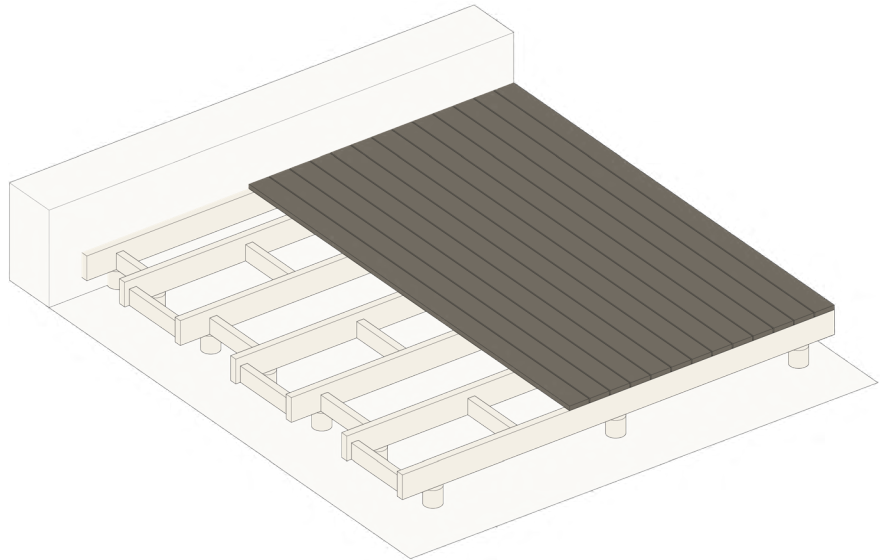


Fig. 5

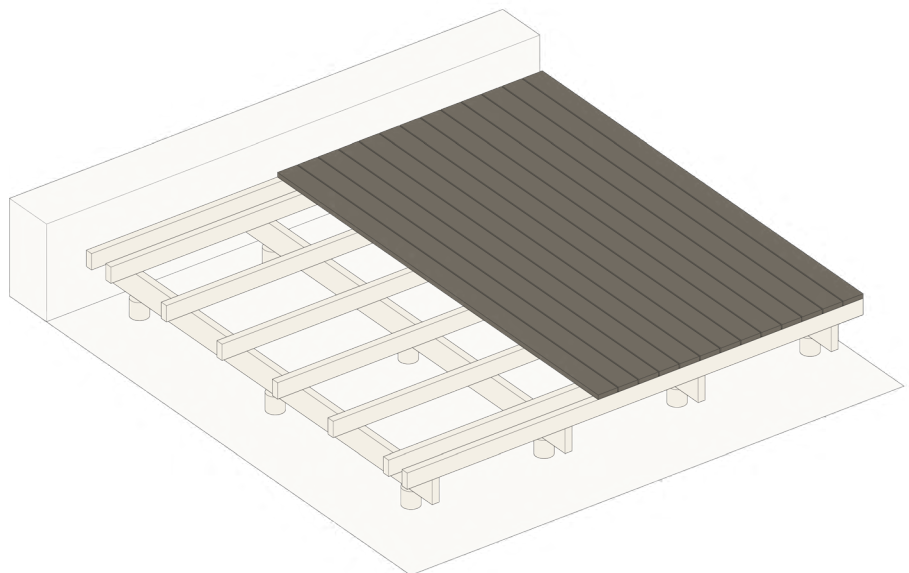
# Frame Types



## Single Frame

Use when height is limited (e.g., roof deckings, balconies).

- Minimum height: 144 mm (50 mm air gap + 68 mm joist + 26 mm decking board)
- Joist spacing must be reduced with lower joist height (see p. 17)
- Decking boards fixed directly to first layer
- Max board support spacing: 450 mm (unless board thickness >26 mm)



## Double Frame

Most popular solution due to stability and efficiency.

- Allows longer spans and fewer foundations
- First layer: higher joists (e.g., 42×140 mm)
- Second layer: lower joists (e.g., 42×68 or 42×92 mm)
- Board support spacing: max 450 mm

# Single Frame

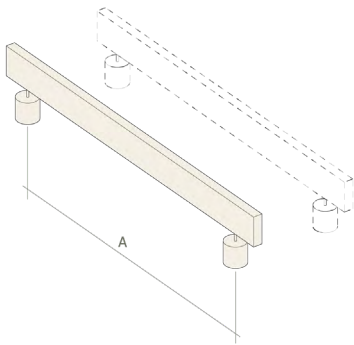


Fig. 1

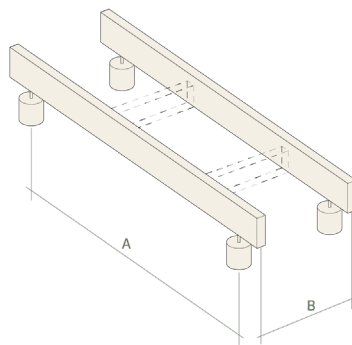


Fig. 2

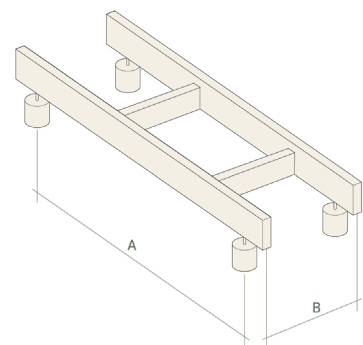


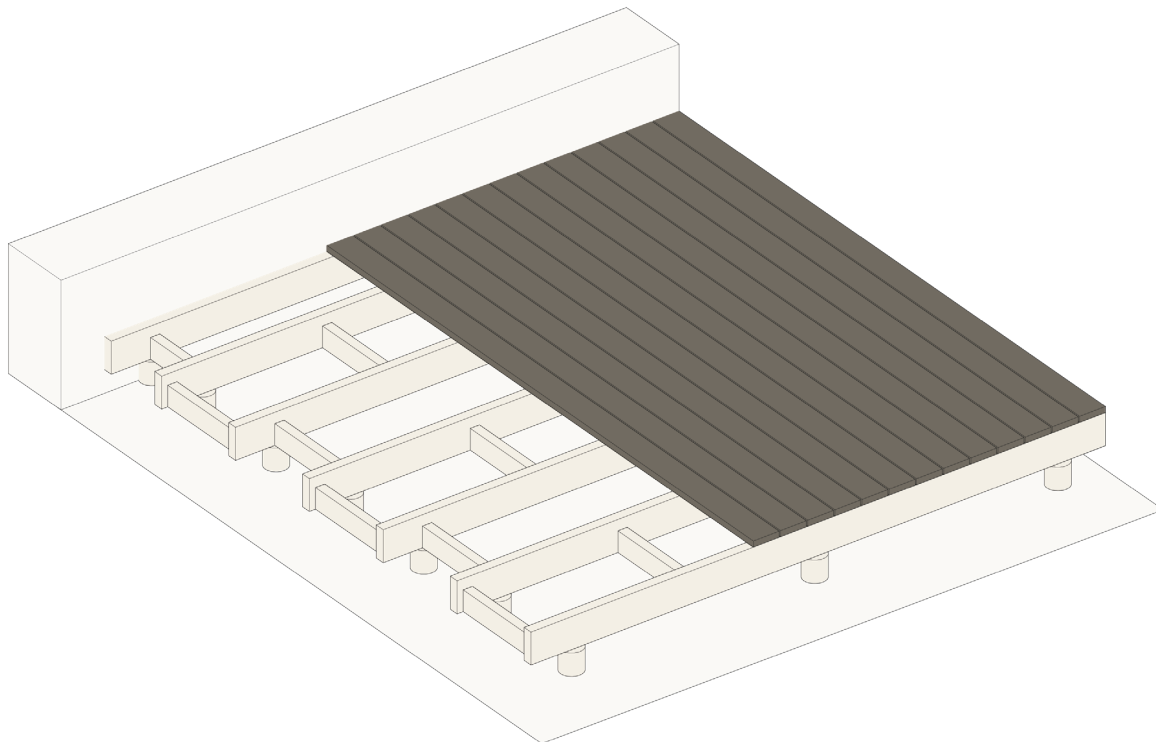
Fig. 3

The height of the joist directly determines the maximum joist spacing. The higher the joist, the greater the distance between the support points can be. For example, in the case of a 42x140 mm thermowood joist, the recommended distance between the supports is up to 1200 mm. It is important to note that the height of the joist determines the span distance only in the direction of its axis (see Fig. 1).

When choosing a single-layer frame construction, the

height of the joist only determines the distance A. Since the decking boards are installed directly on the first layer of the frame, the distance B between the joists (see Fig. 2) should not exceed 450 mm, unless the thickness of the decking boards is greater than 26 mm.

Secure the frame joists with crossbars to make the structure stable. Choose crossbars lower than the joists (see Fig. 3) – this will ensure better ventilation of the decking boards and their longer service life.



Use single-layer frame when free height is limited.

# Double Frame

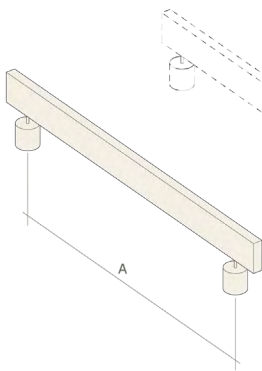


Fig. 1

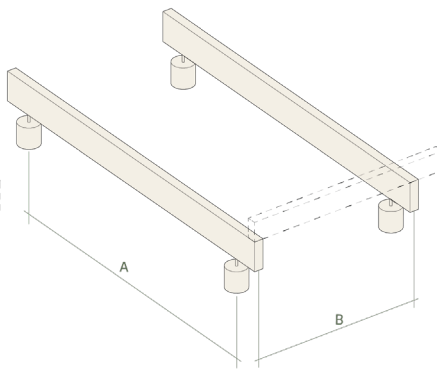


Fig. 2

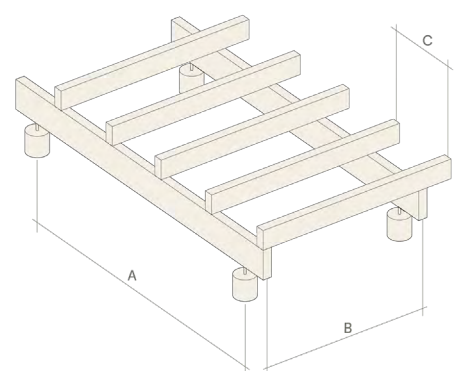


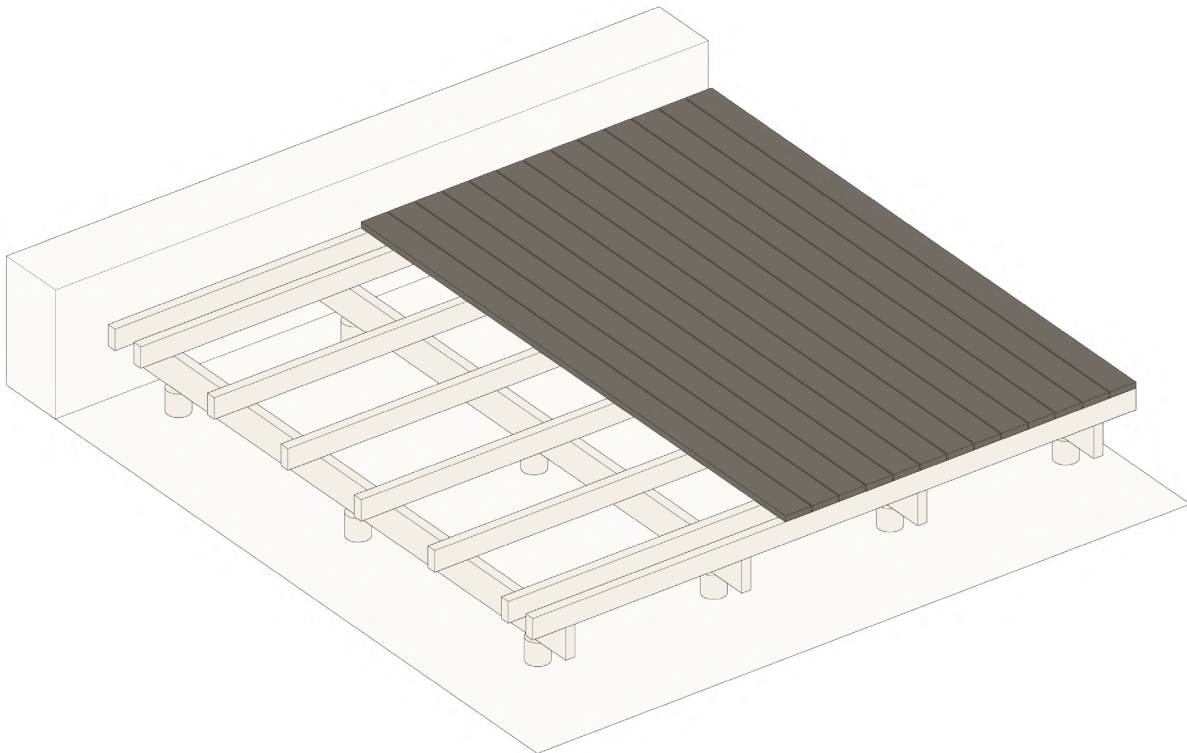
Fig. 3

In the double frame construction, there are two distances between the supports, which can be adjusted by choosing boards of different heights.

For the first frame layer, we recommend using higher joists, for example, 42x140 or 42x117 mm. This will reduce the need for piles in the board installation direction A (see Fig. 1).

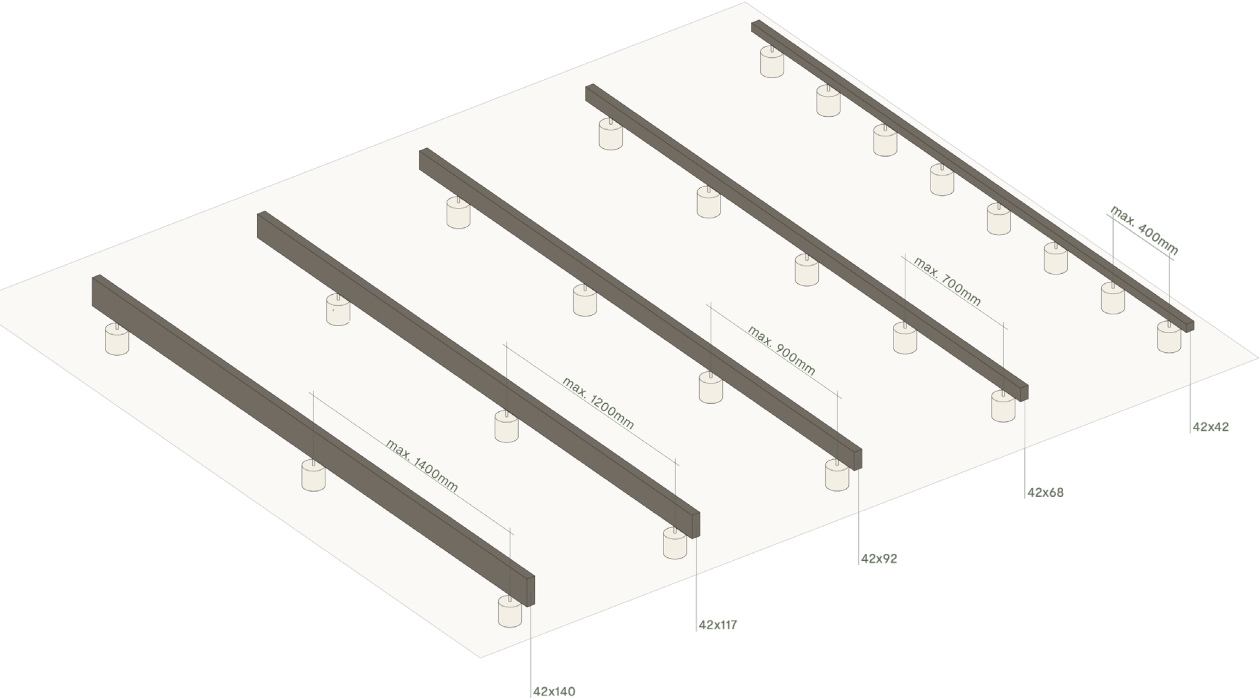
The maximum distance B (see Fig. 2) is determined by the height of joist of the second frame layer. The second layer uses significantly more boards, so we recommend lower products. It is optimal to choose 42x92 or 42x68 mm battens.

The distance C (see Fig. 3) between the boards cannot exceed 450 mm, unless the thickness of the decking boards is greater than 26 mm.



Double frame ensures good ventilation of the wood and allows fewer foundations.

# Frame Joist Spacing



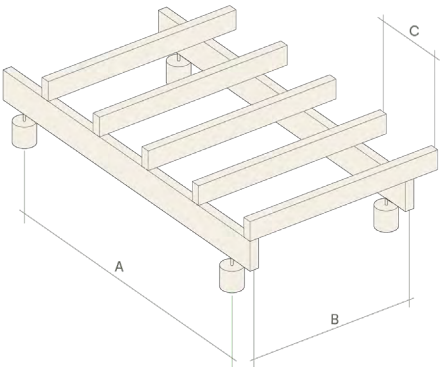
The spacing distance depends on the dimensions of the joist selected.

**A** Maximum distance between support point

|        |        |
|--------|--------|
| 42x42  | 400mm  |
| 42x68  | 500mm  |
| 42x92  | 800mm  |
| 42x117 | 1000mm |
| 42x140 | 1200mm |

**B** Maximum distance between support points

|        |        |
|--------|--------|
| 42x42  | 400mm  |
| 42x68  | 500mm  |
| 42x92  | 800mm  |
| 42x117 | 1000mm |
| 42x140 | 1200mm |



**C** Maximum distance between support points

|        |       |
|--------|-------|
| 42x42  | 450mm |
| 42x68  | 450mm |
| 42x92  | 450mm |
| 42x117 | 450mm |
| 42x140 | 450mm |



**Boheme house** // Lithuania, 2021 // Decking Mykolas 26x117 //  
Architect: Vaiva Mažonė // Photo: Vaiva Mažonė

04

# Decking Boards

## 04.1      **Main Installation Principles**



# Slope and Direction

Install the decking with a 1–2° slope to allow water to drain away and prevent precipitation from accumulating on the boards' surface. The correct slope and direction will extend the decking's lifespan and enhance its aesthetic appeal.

- Deck slope: 1–2° (approx. 10 mm per meter, see Fig. 1)
- Boards should be installed perpendicular to the façade (see Fig. 2)
- For complex layouts (L-shape, wraparound decks), maintain consistent drainage logic.

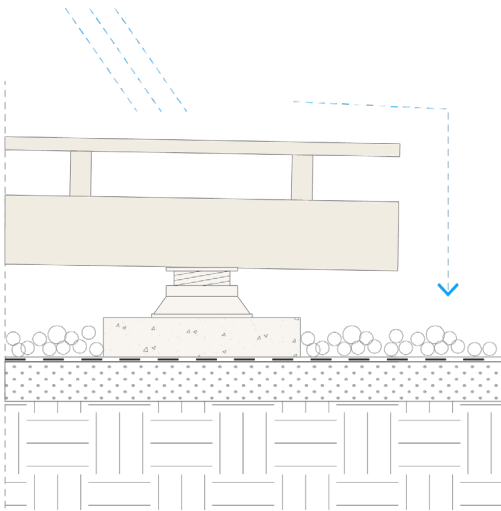


Fig. 1 Recommended slope

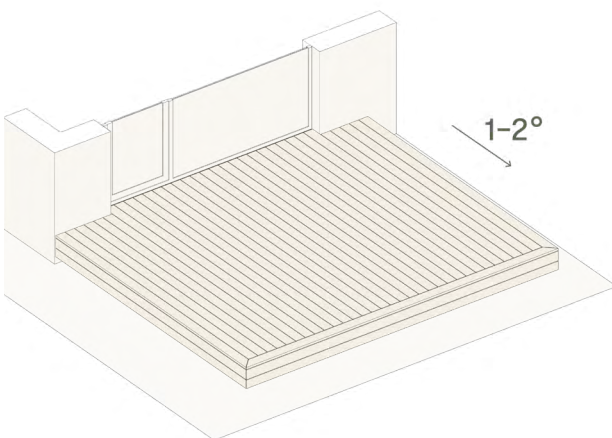


Fig. 2 Recommended direction of the decking boards

# Importance of Ventilation (1)

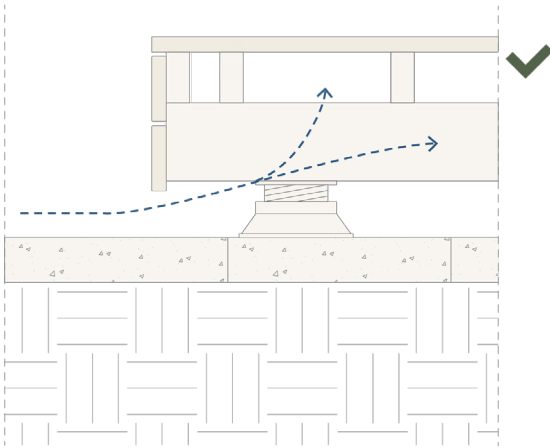


Fig. 1

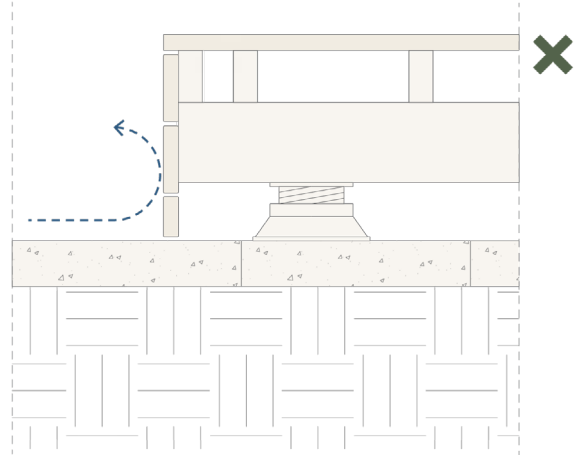


Fig. 2

Ventilation is essential for the durability of thermowood. Install the boards with gaps of at least 5 mm and leave open spaces on the sides and bottom of the decking to allow air to circulate freely. The sides or perimeter of the decking must not be enclosed (Fig. 1-2). Maintain a distance of at least 50 mm between the ground and the bottom of the ,skirt' (Fig. 3) and create a ring of gravel or mulch with a minimum width of 200 mm around the decking to prevent plants from obstructing airflow (Fig. 4).

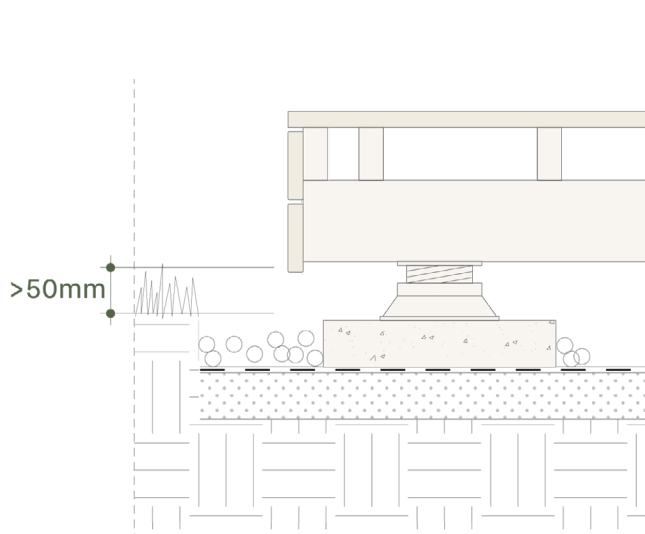


Fig. 3

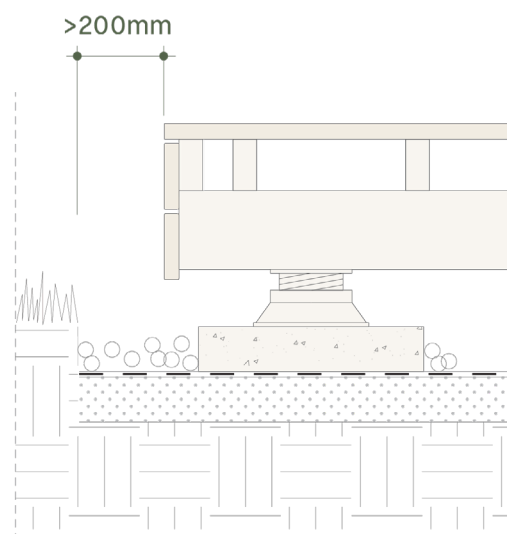


Fig. 4

# Importance of Ventilation (2)

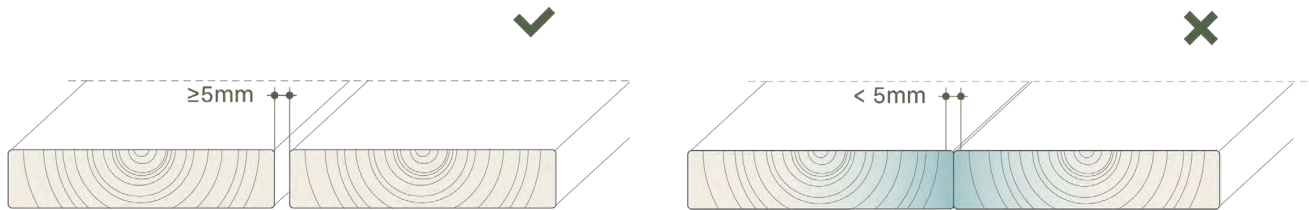


Fig. 1

- Leave gaps  $\geq 5$  mm between boards lengthwise (see Fig. 1)
- Leave  $\geq 10$  mm gap between decking and façade (see Fig. 2)
- Leave gaps  $\geq 5$  mm and at board joints (see Fig. 3-4)
- Keep decking sides and bottom open. Maintain  $\geq 50$  mm gap between ground and the lowest board

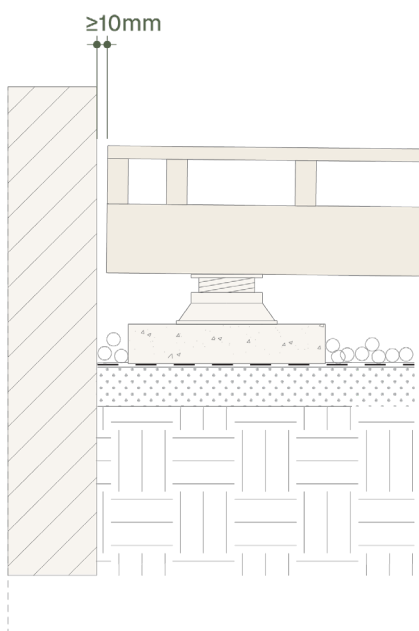


Fig. 2

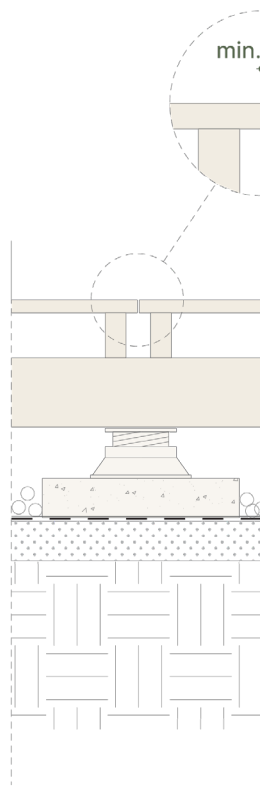


Fig. 3

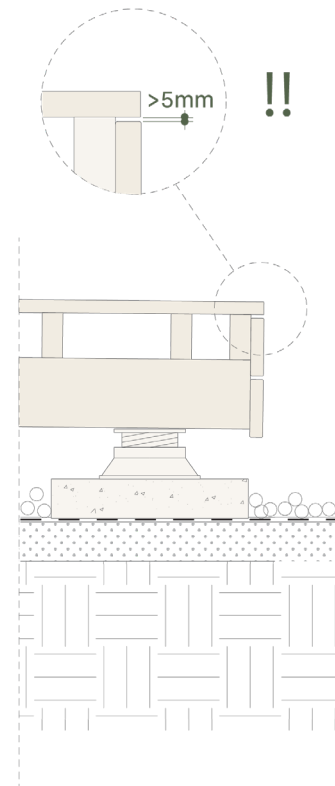


Fig. 4

## Importance of Ventilation (3)

- Create a 200 mm gravel or mulch perimeter around the decking
- Avoid plants touching the decking structure (see Fig. 1)
- Near pools, stop boards short of the water edge and use replaceable edge boards (see Fig. 2-3)

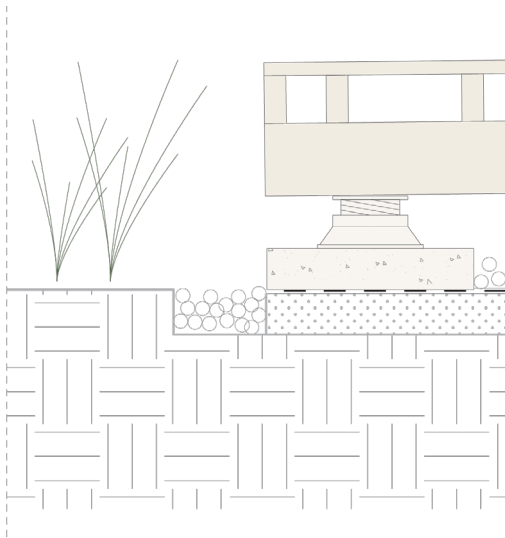


Fig. 1

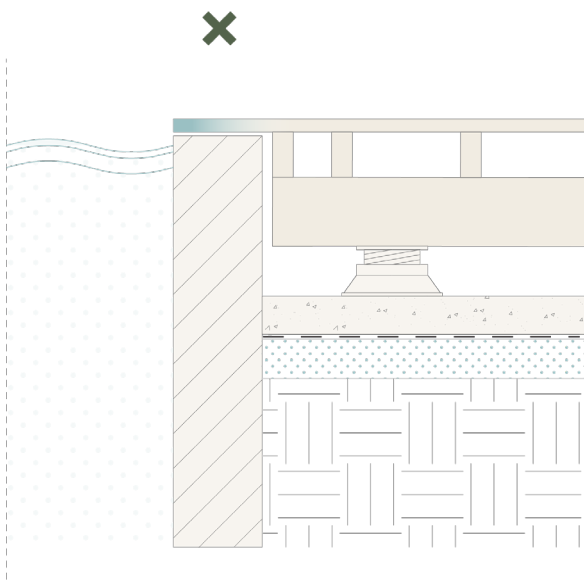


Fig. 2

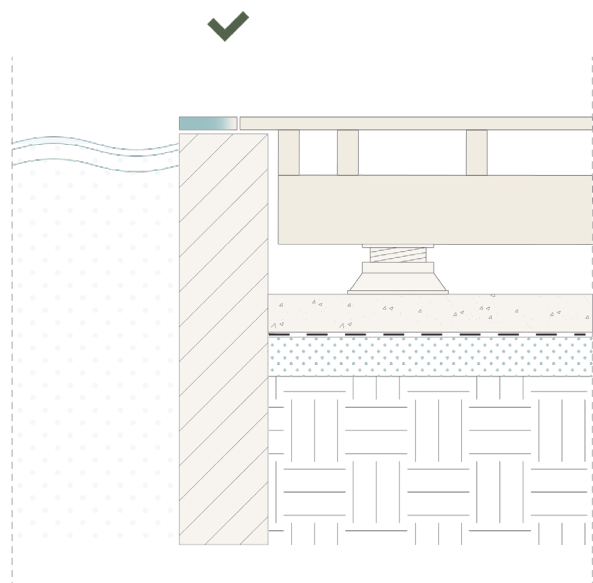


Fig. 3

# Correct Board Face

It is very important to choose the correct side of the boards, as this affects both the functionality and appearance of the decking. Please note that the side to be used depends on the species of wood.

- Pine thermowood: heartwood side facing up (see Fig. 1)
- Spruce thermowood: outer side facing up (see Fig. 2)
- Using Brofix fastening eliminates orientation errors

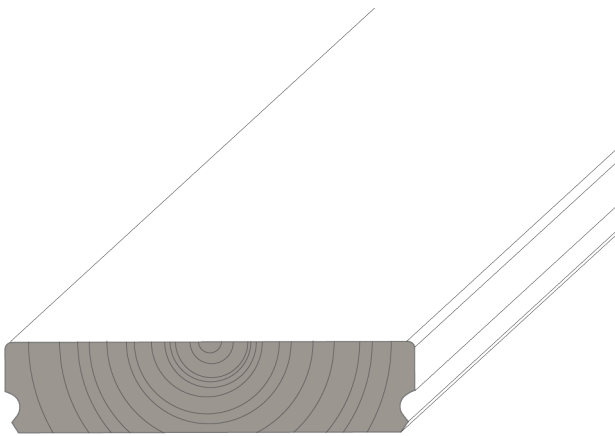


Fig. 1 Correct side of Pine

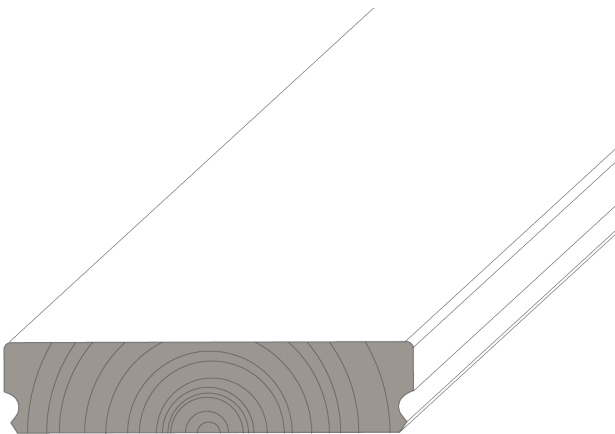


Fig. 2 Correct side of Spruce





**Private Villa** // Lithuania, 2019 // Decking JONAS 26x117 // Architects: DO architects // Photo: Laimonas Ciūnys

## 04.2      **Decking Board Profiles**

# Decking Boards

Battens (joists)



42x140



42x117



42x92



42x68



42x42

Brolis Timber decking boards are available in classic or side-grooved designs for use with the Brofix hidden fastening system. The boards' surface can be smooth or textured to highlight the natural wood grain.

MYKOLAS Brofix



26x140

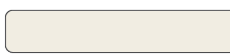


26x117



26x92

MYKOLAS



26x140



26x117



26x92



26x68



## 04.3      **Decking Fasteners and Methods**

# General Fastening Rules

- Use A2 or A4 stainless steel fasteners only
- Choose wood screws with a conical head so that they can be screwed in easily
- Screw length: at least twice the board thickness
- Screw heads must sit flush with the surface (see Fig. 1).
- Keep minimum distances from board edges (see Fig. 2):
  - $\geq 20$  mm from sides
  - $\geq 70$  mm from board ends
- Pre-drill if fastening closer than recommended
- Boards  $\leq 92$  mm wide: 1 screw per joist
- Wider boards: 2 screws per joist
- Each board must be fixed to at least three joists.

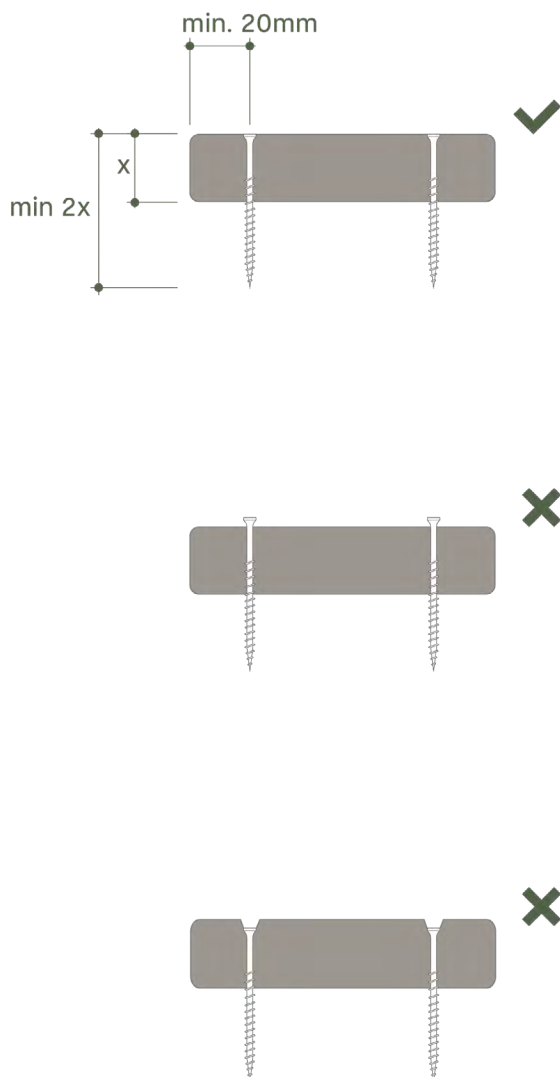


Fig. 1

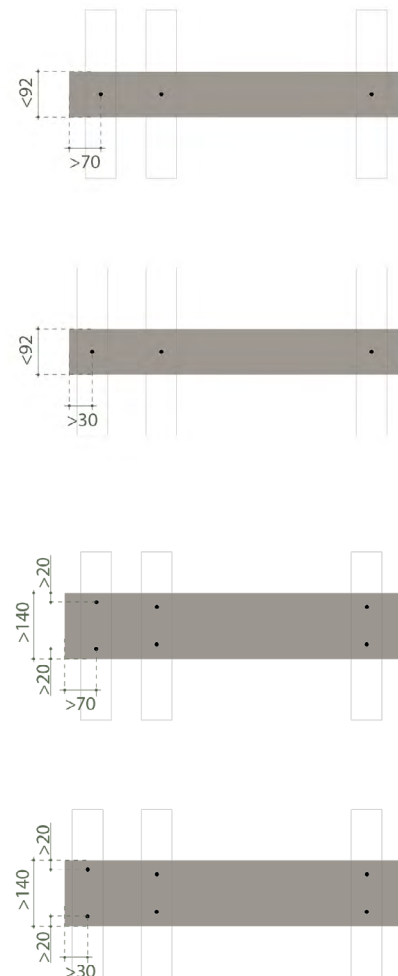


Fig. 2

# Fasteners and Methods

## Brofix Hidden Fastening System

The Brofix system is one of the most popular hidden fixing methods. Decking boards feature side grooves into which special brackets are inserted. A wood screw is driven at an angle through the bracket, and the newly installed board is pushed firmly against the previously fixed board. This ensures a uniform 6 mm gap between boards and results in an aesthetically pleasing, screw free decking surface.

The Brofix system does not require any additional tools—an electric screwdriver is sufficient—making installation convenient and easy (see Fig. 1).

- Ensures uniform 6 mm gaps
- Uses fewer screws than traditional or side fastening methods
- First and last boards must always be top-screwed
- Use separate clips at board ends—never one clip for two boards

## Top-Screwing

Decking boards can also be traditionally screwed by driving wood screws directly through the face of the board (see Fig. 2).

- Recommended for aluminium or metal frames
- Use two screws on boards wider than 92 mm
- Keep minimum distances from board edges:
  - $\geq 20$  mm from sides
  - $\geq 70$  mm from board ends
- Pre-drill if fastening closer than recommended

## Side Fastening

Standard rectangular thermowood boards can be fastened using Camo or similar hidden fastening systems. With the aid of a special installation tool, wood screws are driven at an angle through the side edge of the board. This method keeps the fasteners concealed, resulting in a uniform and aesthetically pleasing board surface (see Fig. 3).

- Screws driven at an angle through board edges
- Suitable for standard rectangular boards

Use **A2 or A4 stainless steel fasteners only**.

Failure to follow this recommendation will cause the metal to oxidize and blackening to appear at the fastening points.

Brolis Timber decking boards can be fastened with the Brofix hidden fastening system or wood screws.



Fig. 1 Brofix Hidden Fastening System



Fig. 2 Top-Screwing

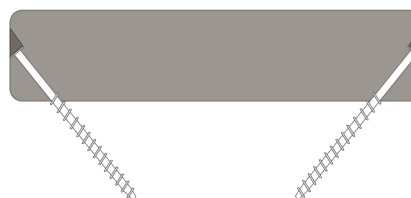
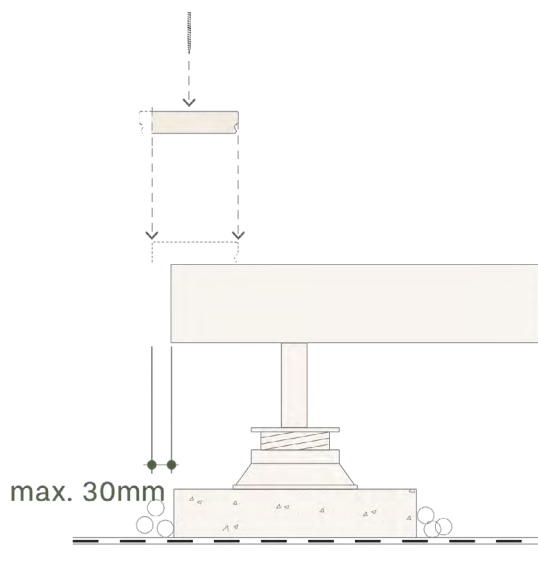


Fig. 3 Side Fastening

# Brofix Installation Instructions (1)

## Fixing the first board

Fig. 1

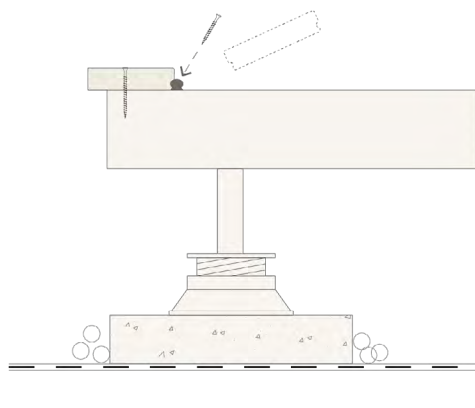


When installing thermowood boards using the Brofix system, fasten the first board from above with stainless steel wood screws (see Fig. 1). The side groove of the first board may be left visible as a design feature, or the board can be cut lengthwise, depending on the desired finish.

It is essential that the first board is installed perfectly perpendicular to the façade, as all subsequent boards will be aligned based on it. If misalignment occurs and the boards begin to “cross,” the decking can be dismantled and the installation restarted, since the Brofix system allows the boards to be removed without damage.

## Brofix bracket fastening

Fig. 2

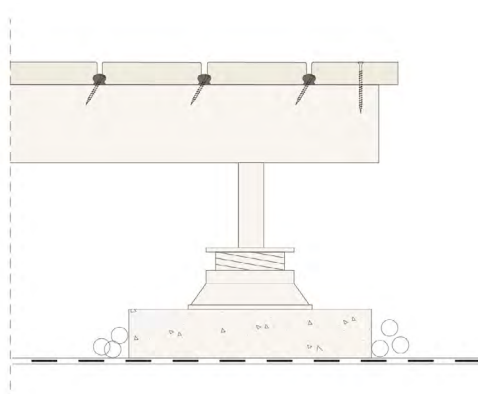


After fixing the first board, continue the installation using Brofix. Insert the bracket into the groove of the board and drive a wood screw through it using an electric screwdriver. We recommend inserting the screw more vertically—the neck of the bracket will automatically guide it to the required angle.

Ensure that the screwdriver torque is correctly adjusted to prevent overtightening. If the plastic around the screw head begins to turn white, reduce the torque immediately. The bracket must rest fully on the subframe across its entire base. If the bracket remains lifted after tightening, the screw has been driven too horizontally and must be reinstalled. Incorrectly fixed brackets will prevent the next board from fitting properly, will not maintain an even gap, and will fail to secure the board adequately.

## Fixing the last board

Fig. 3



The last board, like the first, must be fastened from above using wood screws. Before fixing, ensure that the board is firmly pressed against the supporting brackets. This step is crucial to ensure the overall stability and durability of the decking.

# Brofix Installation Instructions (2)

When joining the ends of decking boards, two Brofix brackets must be used—one separate bracket for each board (see Fig. 1). A single bracket must not be used to secure two boards simultaneously (see Fig. 2).

In addition, do not install more than one Brofix bracket on the same subframe joist. Each board must be secured to at least three joists to ensure the stability and long-term durability of the decking.

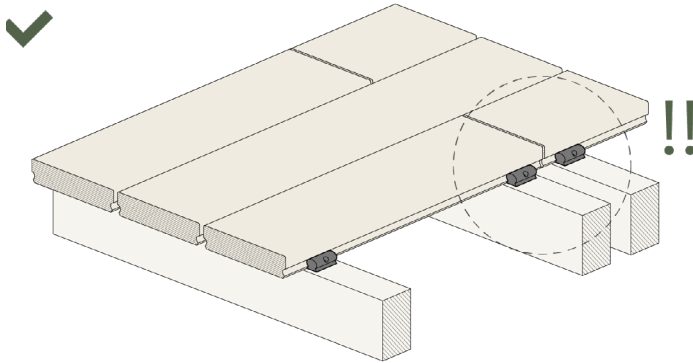


Fig. 1  
Attaching board ends with two separate brackets

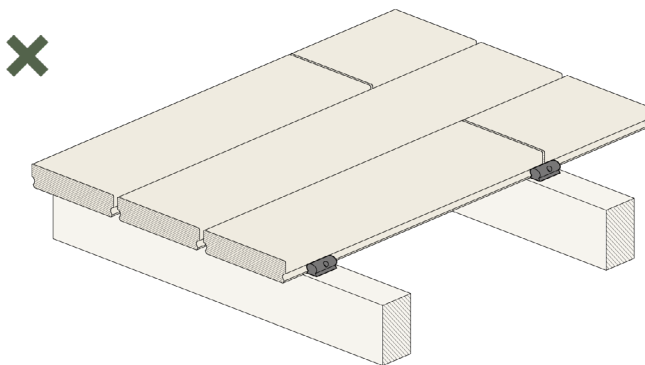


Fig. 2  
Attaching board ends with one bracket is not permitted





**Family villa** // Lithuania, 2019 // Battens 42x42, 42x68, 42x92, decking JONAS 26x117 // Architects: DO architects // Photographer: Laimonas Ciūnys



05

# Architectural Design Solutions

## 05.1      Decking Edge Finishing



# Decking Edge Formation

When installing the deck, ensure adequate ventilation for the wood and follow the recommendations provided in the previous sections.

- Boards should overhang the side skirt with  $\geq 5$  mm airflow gap (see Fig. 1)
- Lightly sand the open ends of the boards with sandpaper, rounding the edges to prevent splitting
- Do not frame the decking with a side board (see Fig. 2), as debris and precipitation will accumulate in the gap formed, and cause the ends to blacken

- Deck surface can be framed with one or more edge boards installed perpendicular to the direction of the main decking boards (see Fig. 3).

In case of using edge boards, the frame should be formed in accordance (see Fig. 4). Instead of installing two subframe joists to support the edge board, use thermowood blocks fixed to the primary frame. This creates adequate support for the edge boards without closing the framing, while allowing ventilation of the decking.

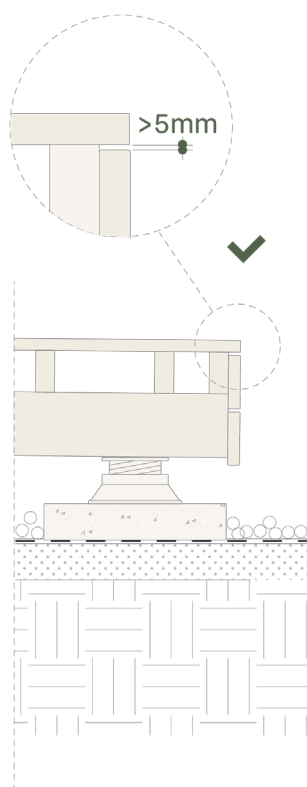


Fig. 1

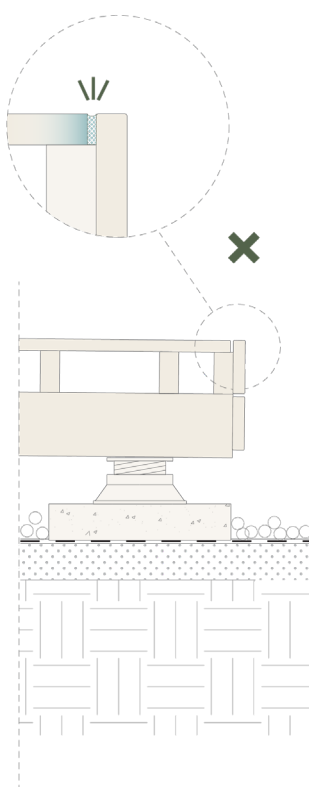


Fig. 2

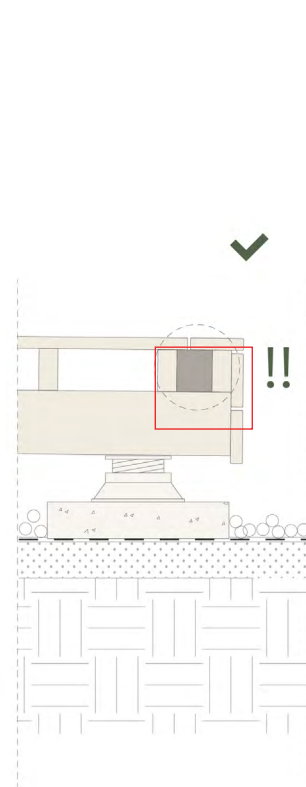


Fig. 3

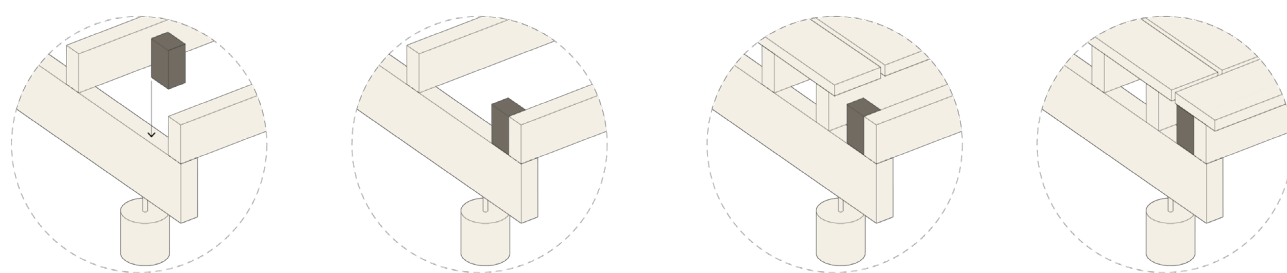


Fig. 4

# Decking Side Formation

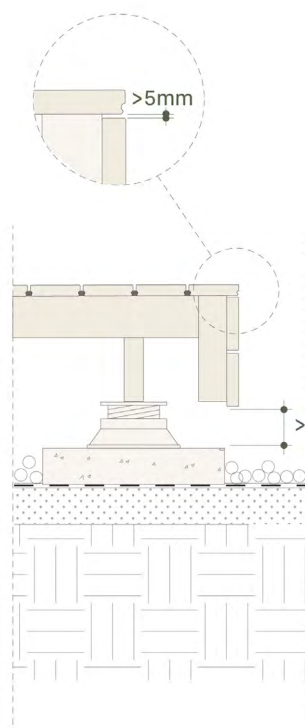


Fig. 1

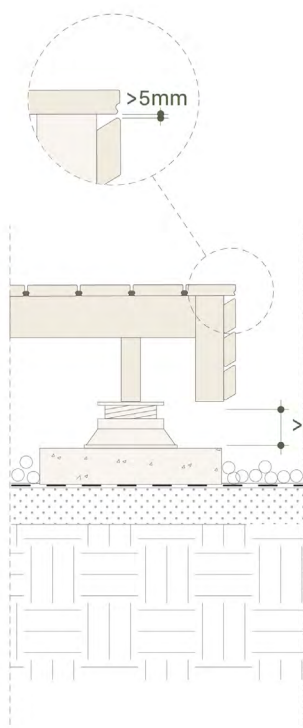


Fig. 2

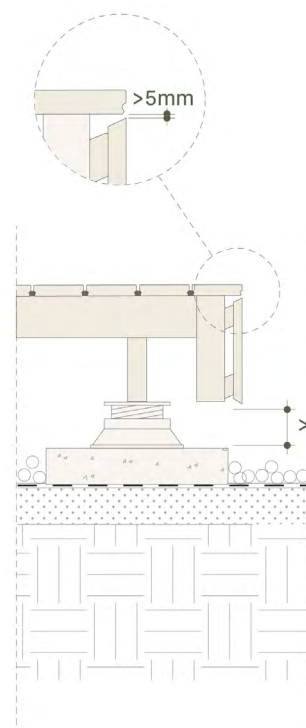


Fig. 3

- Choose side finish before building the frame
- Use decking boards or cladding profile 'Rombas' to form the sides (see Fig. 1-2)
- To form stable sides, attach vertical joists to the upper frame beams (50-100 mm above the ground)
- For vertical side graphics use any boards installed with gaps, just ensure additional structural support for vertical elements (see Fig. 3)
- Leave 50-100 mm gap between sides and ground.

## 05.2 Decking Board Joints and Patterns

# Decking Board End Joints

When joining decking boards, follow the basic installation principles described in the previous sections. Always install a double joist subframe at board joints to provide proper support for fastening the board ends (Fig. 1). Maintain a minimum 5 mm clearance at the joint to ensure adequate ventilation.

Decking boards, like other thermowood products, are manufactured in fixed lengths. When planning a deck, it is important to consider the standard board lengths, which range from 2100 mm to 5100 mm, in 300 mm increments. We recommend selecting boards slightly longer than the design length, as the ends of 80 mm boards are not graded, and minor splitting may occur.

For example, if the design length of the decking is 3000 mm, the most suitable board length would be 3300 mm.

Further, several solutions for joining decking boards are presented to allow efficient use of material, reduce waste, and achieve an aesthetically pleasing deck design. A standard subframe is suitable for all installation methods; however, double joists must be installed at board ends according to the selected joint layout to ensure secure fixing.

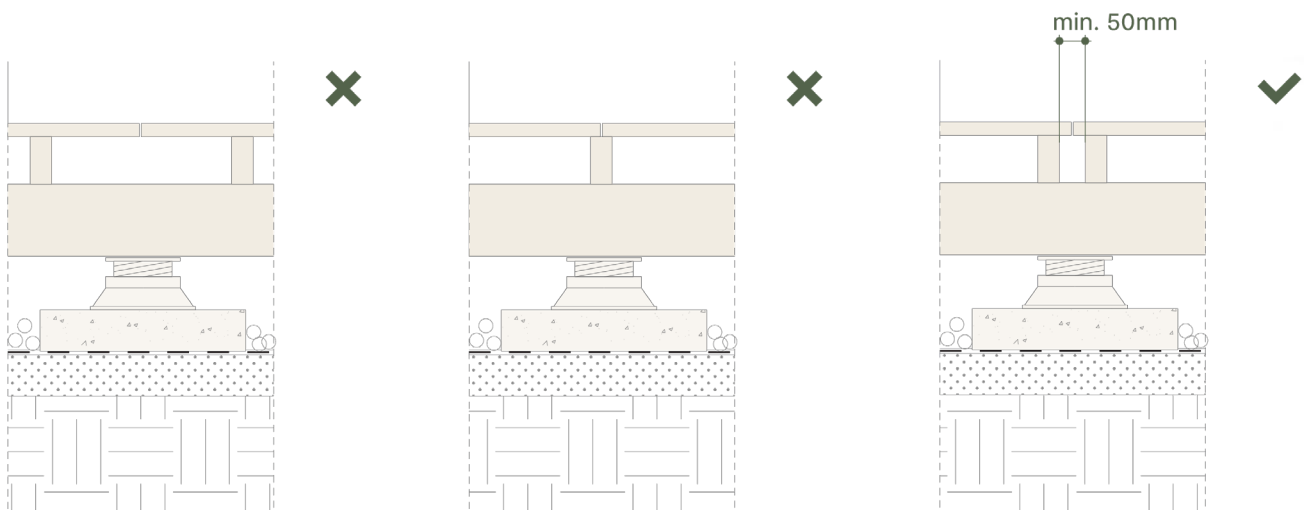


Fig. 1

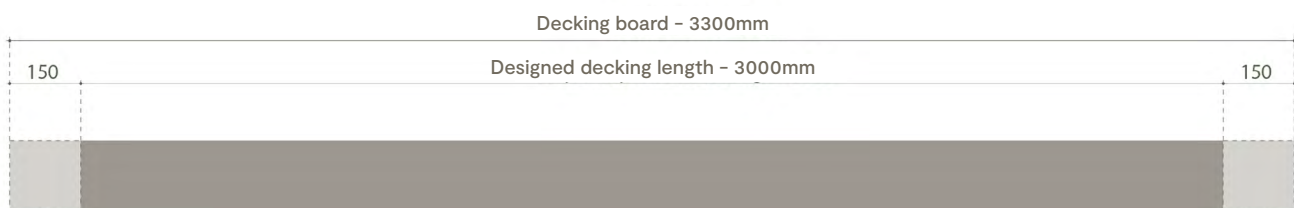


Fig. 2

# Decking Board Patterns (1)

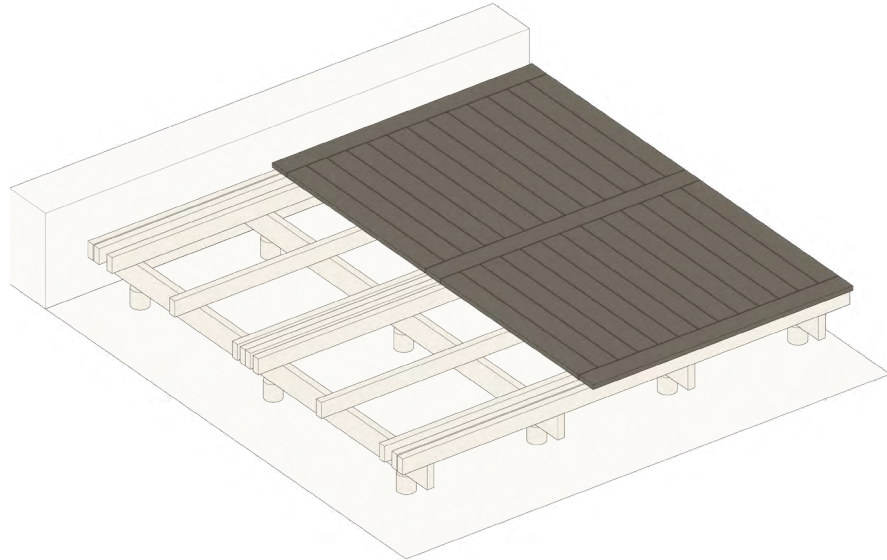


Fig. 1 Straight with feature joints

If the designed decking length exceeds the available board lengths, the deck edge can be formed using one or more boards, with the joint highlighted by a transverse board that repeats the rhythm of the edging (see Fig. 1).

If the available boards are longer than required, every second board can be jointed, creating a staggered connection pattern (see Fig. 2).

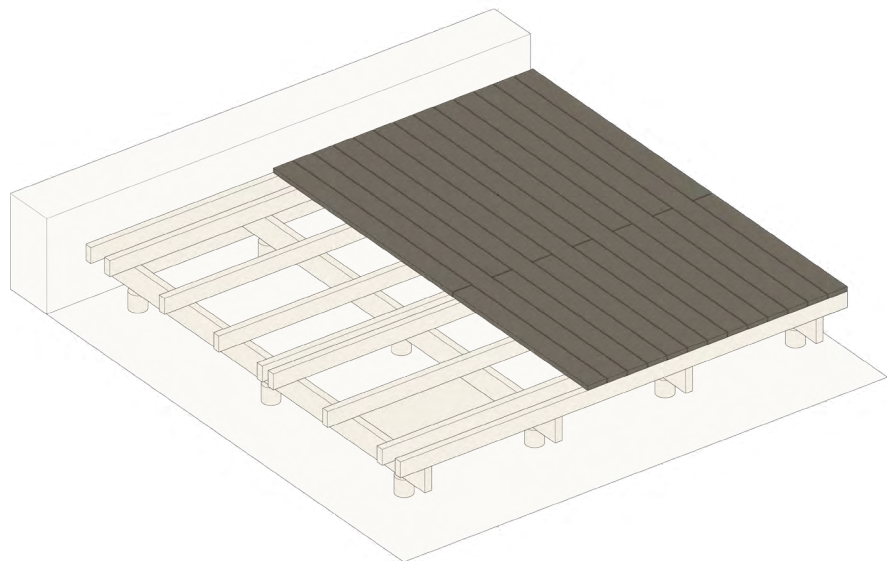


Fig. 2 Alternating board joints

## Decking Board Patterns (2)

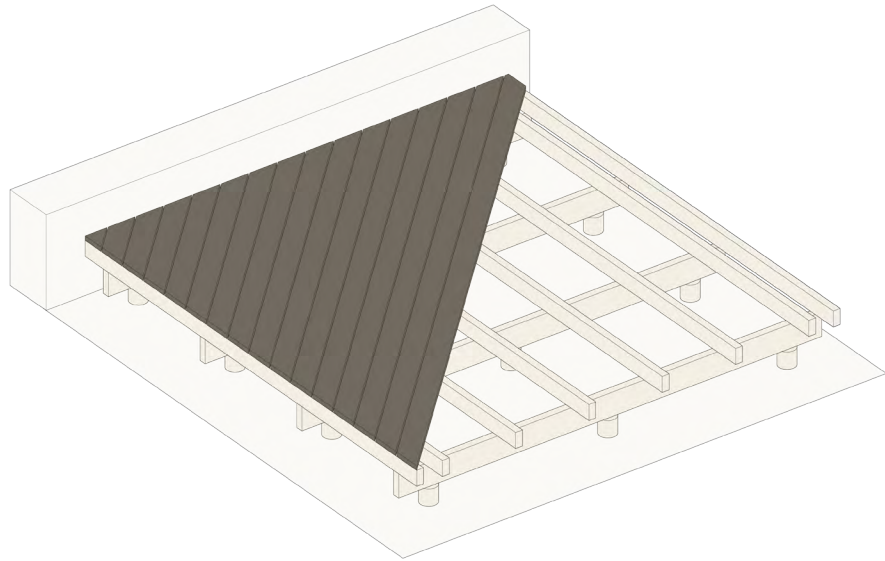


Fig. 1 Diagonal (requires ~1.5% slope)

Brolis Timber decking boards can be installed diagonally (see Fig. 1) or in a chevron pattern (see Fig. 2).

When installing boards diagonally, note that the deck slope should be slightly increased—to approximately 1,5° (15 mm per meter)—to ensure proper water drainage. In addition, diagonally cut board ends may be more prone to splintering; therefore, we recommend lightly sanding and rounding the cut edges to achieve a clean finish and reduce the risk of damage.

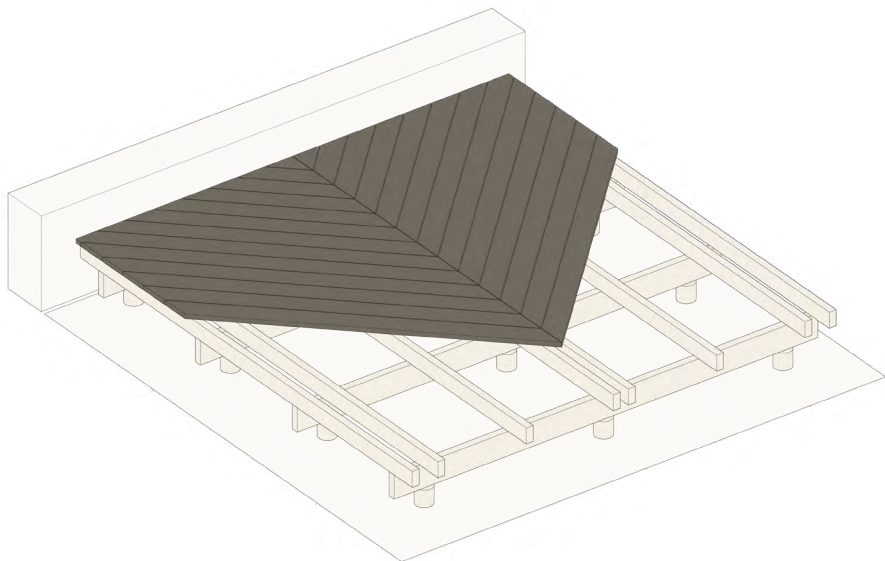


Fig. 2 Chevron (requires ~1,5° slope)

## Decking Board Patterns (3)

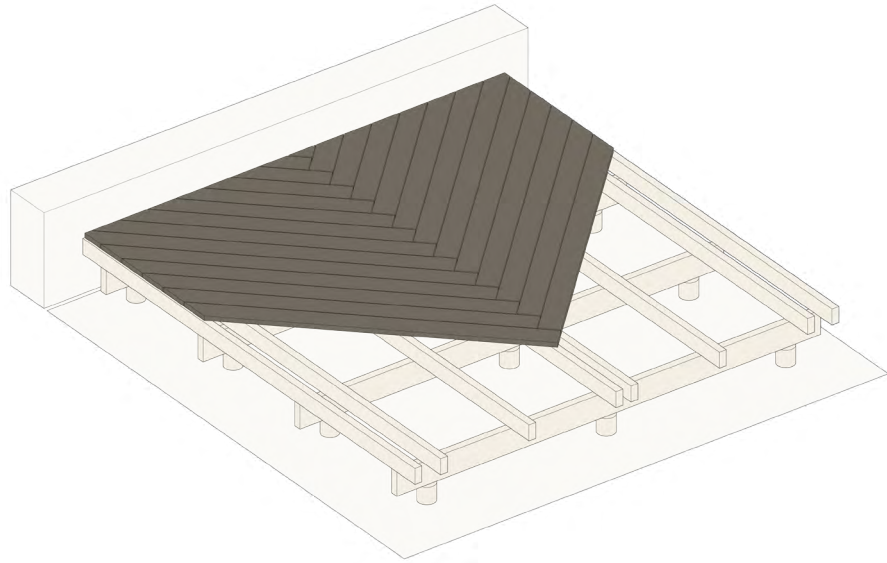


Fig. 1 Herringbone (requires  $\sim 1,5^\circ$  slope)

Brolis Timber decking boards can be laid in a herringbone pattern (see Fig. 1) or installed in segments (see Fig. 2). The segmented installation method is particularly useful when service lines or utilities are located beneath the decking and require easy access. In such cases, one of the segments can be used as an inspection hatch.

When installing boards diagonally, note that the deck slope should be slightly increased—to approximately  $1,5^\circ$  (15 mm per meter)—to ensure proper water drainage. In addition, diagonally cut board ends may be more prone to splintering; therefore, we recommend lightly sanding and rounding the cut edges to achieve a clean finish and reduce the risk of damage.

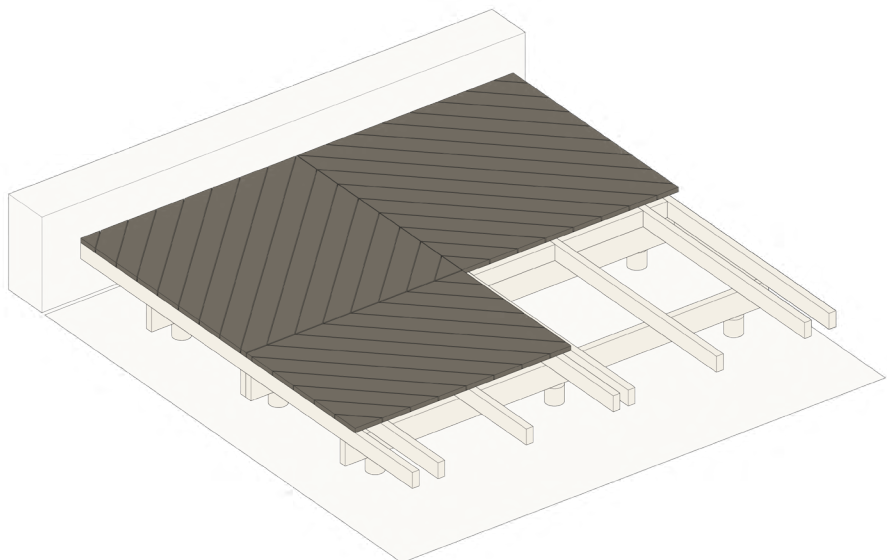


Fig. 2 Modular segments (require  $\sim 1,5^\circ$  slope)





**Svencelė Island** // cladding Mykolas 19x92 / 19x117, batten 42x92 / 42x140, decking Mykolas 26x117 // Architects: DO Architects // Photographer: DO Architects

## 05.3 Railing

# Principles of Railing Installation (1)

When a decking is elevated more than 500 mm above ground level, the installation of a railing is recommended. Brolis Timber battens are well suited for this purpose.

There are multiple ways to design and fix a railing. For the most appropriate solution, we recommend consulting a qualified craftsman or architect. Below, we present the basic installation principles along with one possible railing design option.

The need for a railing should be decided at the decking design stage, as certain structural decisions—such as the spacing of the subframe elements—may be affected. To form the openwork railing shown in the example, using  $42 \times 42$  mm battens and maintaining uniform spacing between them, set dimension X to 756 mm (see Fig. 1).

Railing structures must always be securely fastened to the main decking frame (see Fig. 2). In the illustrated example,  $42 \times 117$  mm thermowood battens are used for the supporting structures and are fixed to the frame with a 42 mm outward offset. When installing decking boards around the railing posts, ensure a 5 mm ventilation gap to allow proper airflow (see Fig. 3).

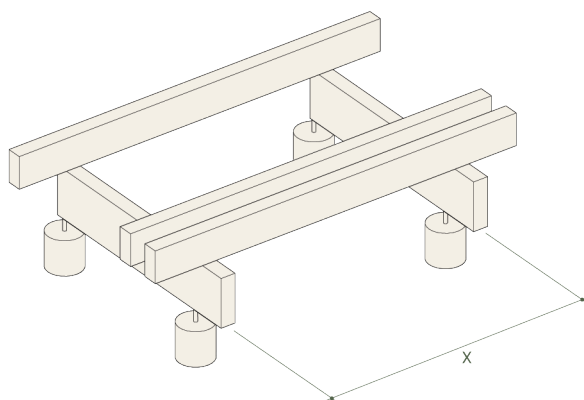


Fig. 1

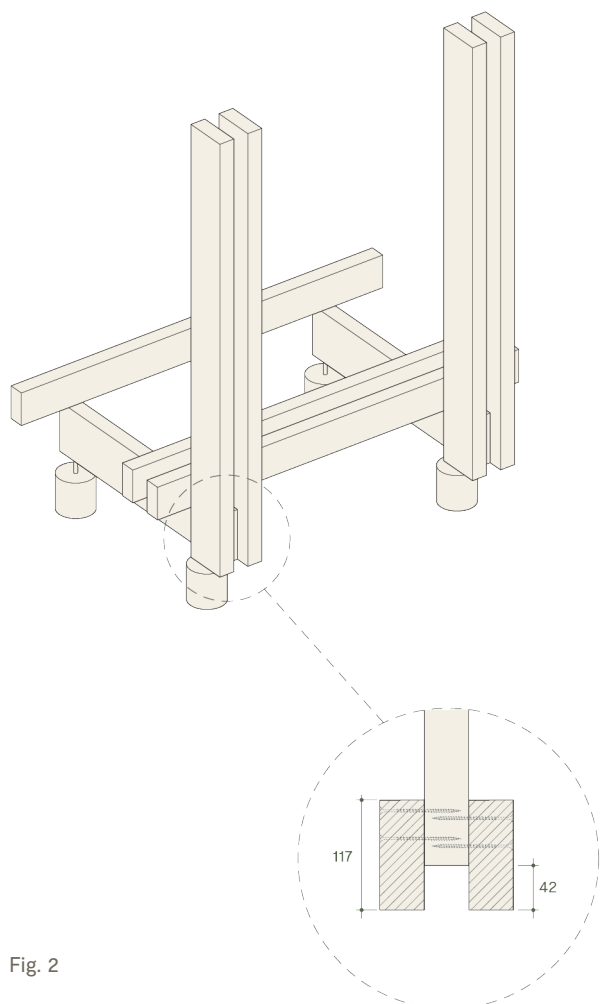


Fig. 2

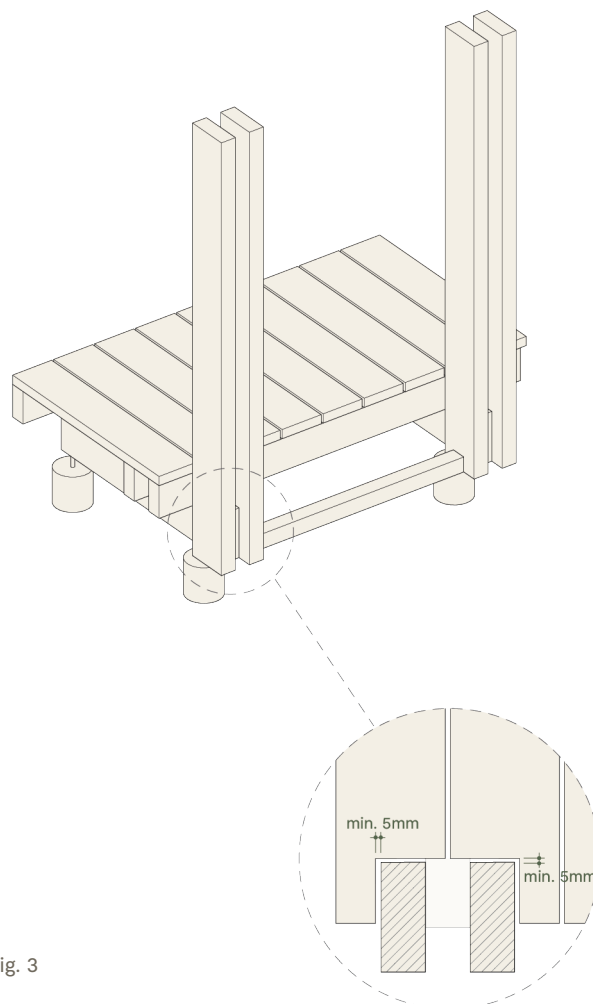


Fig. 3

# Principles of Railing Installation (2)

The top rail should be at least 1 m high from the decking surface. Horizontal openwork should be avoided unless the distance between the horizontal elements is less than 20 mm.

In this example, 42x42 mm thermowood battens are used for the balusters. Cut the lower edge of the battens at a 15° angle and attach them to the additional joist. Screw the top of the balusters at an angle to the railing crossbar using wood screws (see Fig. 1-2).

Maintain equal distances between the structures and the openwork battens to create an aesthetically pleasing, seamless railing that can also be used to cover the decking frame (see Fig. 3).

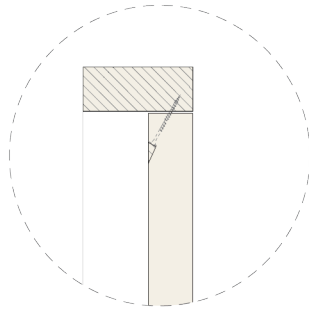


Fig. 1

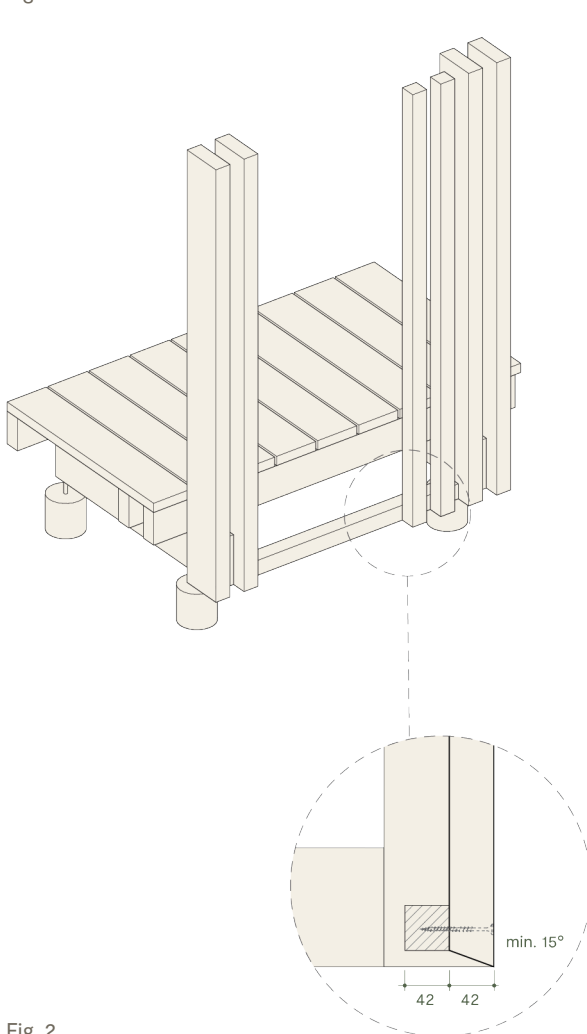


Fig. 2

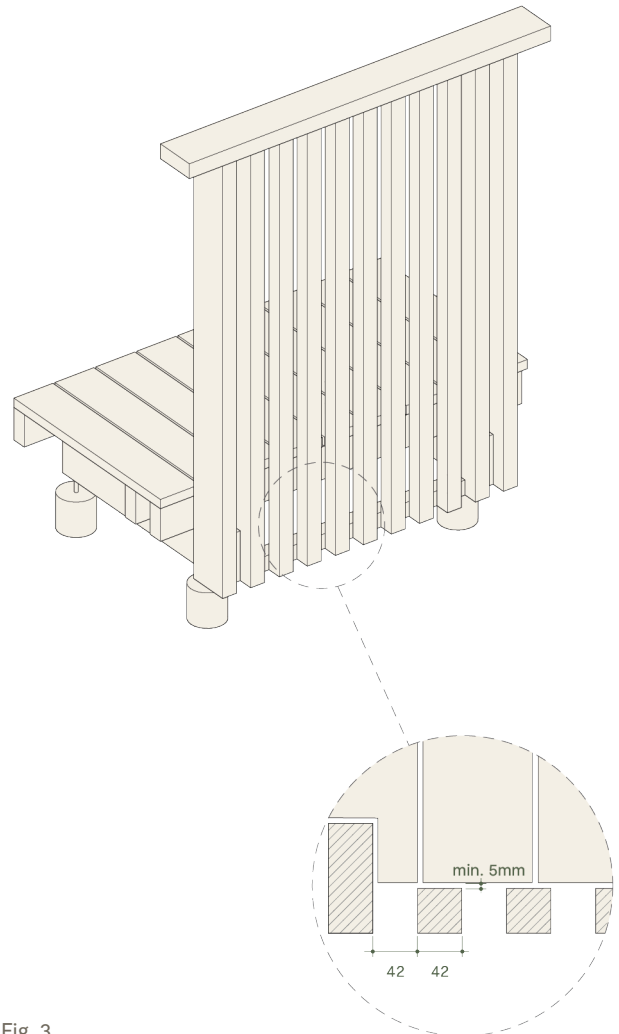


Fig. 3

## 05.4 Pergola

# Principles of Pergola Installation (1)

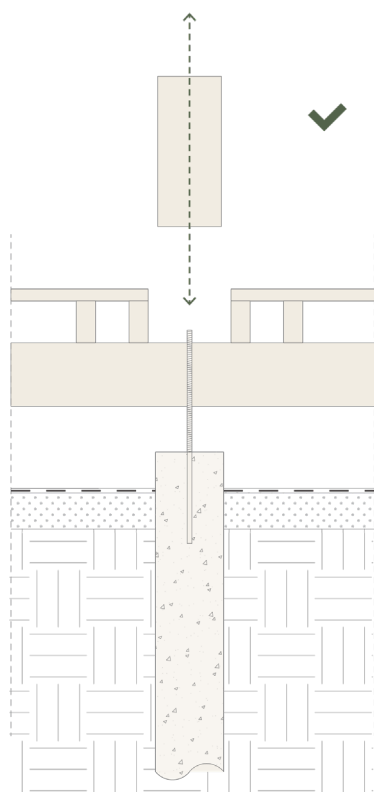


Fig. 1: Post load must be on the same axis as the foundation

Brolis Timber's thermowood battens, which come in sizes ranging from 42x42 to 110x290, are perfectly suitable for pergola construction. When planning a decking, it is important to decide in advance whether a pergola will be built, so that the decking frame structure can be installed correctly.

Below, we present the basic principles for installing this type of structure. However, please note that pergolas are more complex and require experience, so we recommend consulting a qualified engineer or architect to ensure the structure is safe, stable and durable.

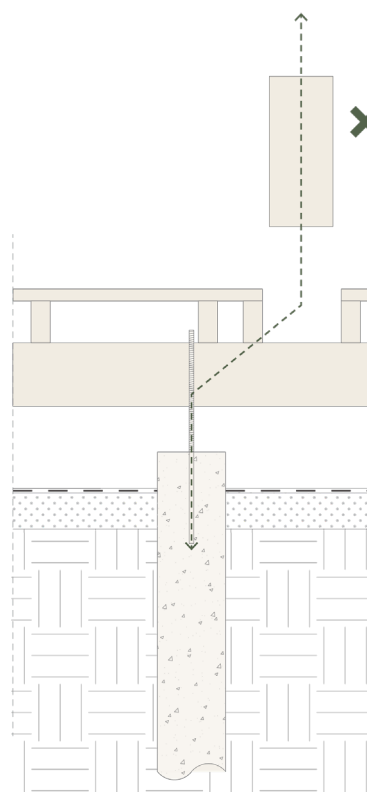


Fig. 2: Post load is not distributed properly to the decking frame

Always fix the pergola posts on the central axis of the foundation (see Fig. 1). Do not install the posts on the frame beam between the supports (see Fig. 2), as this will disrupt the structure's load balance.

Alternatively, you can support the posts on separate foundations without tying them to the decking structure. Please note that plastic supports are not suitable for this purpose.

Wooden posts should not rest directly on the foundation; instead, they should be raised using metal anchors (see Fig. 3).

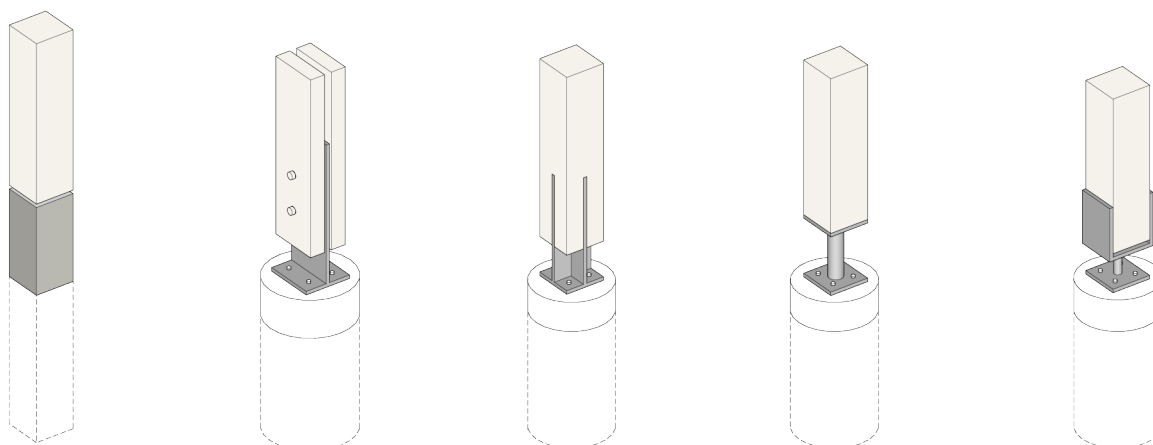


Fig. 3: Wooden post must be raised from the foundation

## Principles of Pergola Installation (2)

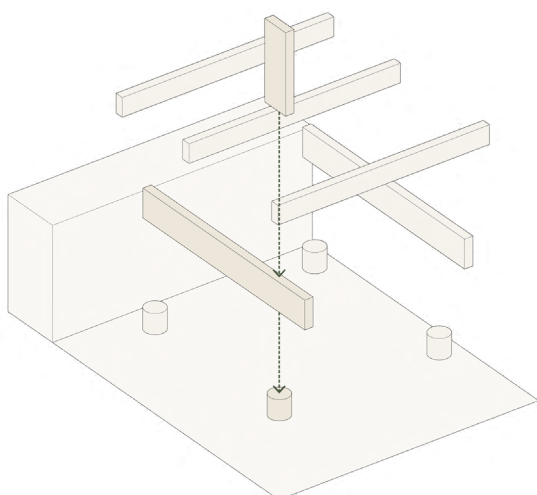


Fig. 1: Post load must be on the same axis as the foundation

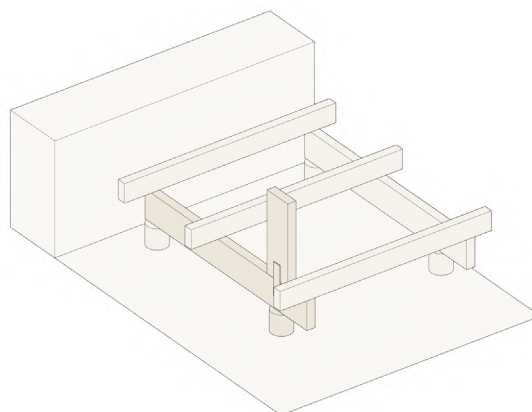


Fig. 2: You can attach post to the frame using metal plates

Properly installing the posts will ensure the structural integrity of the pergola and prevent load imbalances.

Make sure you follow the basic requirements mentioned earlier: align the posts with the axis of the foundation and secure them to the primary frame (see Fig. 1). Securing the posts to the subframe is not recommended, as this will compromise the structure's stability.

You can secure the posts using metal plates or special brackets. Choose fasteners made of stainless steel.

The examples (Figs. 1–4) show post installation using a 42x140 thermowood beam, yet other dimensions can be selected for alternative designs.

You can assemble the posts from several parts — such solutions are easy to implement and aesthetically pleasing. In addition, if necessary, you can easily replace a damaged section.

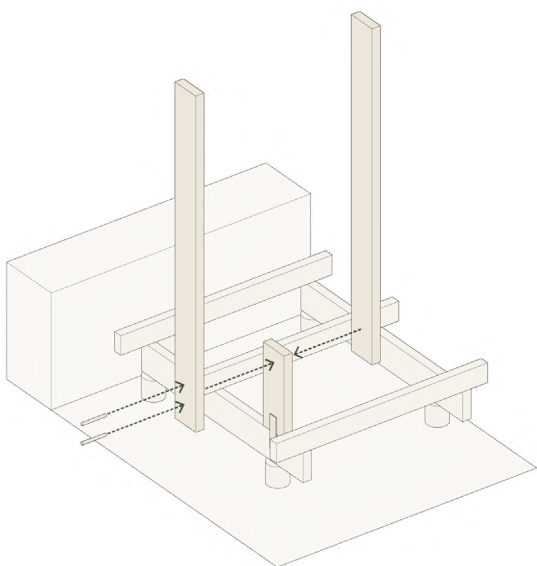


Fig. 3 Post can be assembled from several parts

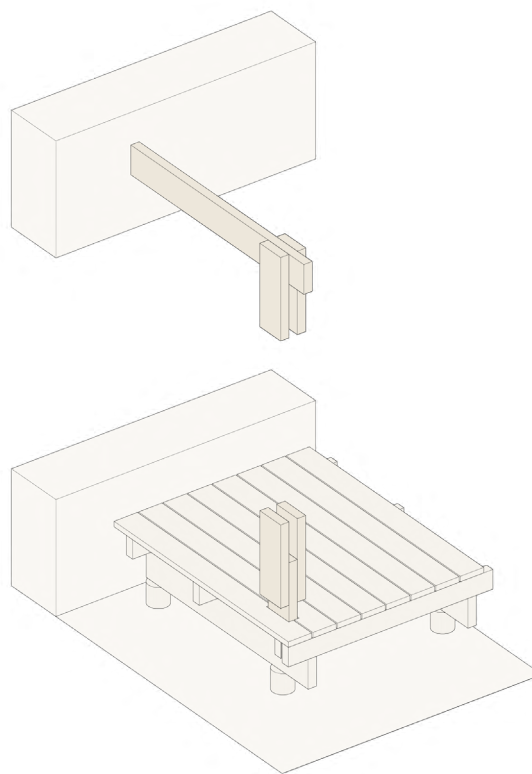


Fig. 4: Top and bottom details of a multi-part post



# Principles of Pergola Installation (3)

When installing a pergola, it is important to ensure that the structure is stable enough to withstand additional external loads. The structure requires support points in all three dimensions (Fig. 1 and Fig. 2). Fasten the beams to each other and, if possible, to stable surfaces such as the building's façade. If designing a freestanding pergola, fasten all elements diagonally in all three directions.

To ensure stability, we recommend using crossbars. These can be made of thermowood, metal cables or pipes, depending on the design. Crossbars serve as functional and aesthetic elements.

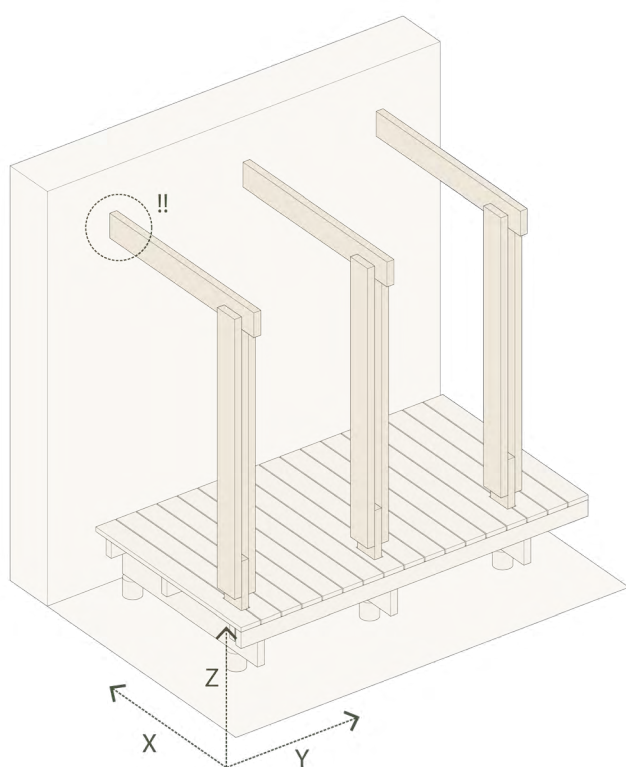


Fig. 1 shows how fixing the pergola to the façade and foundation ensures stability in the X and Z directions only.

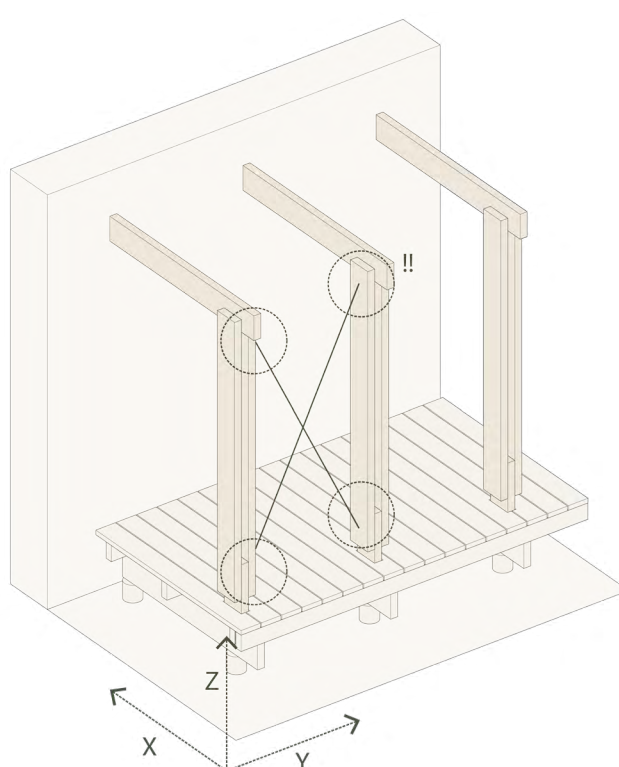


Fig. 2 shows how additional crossbars stabilise the structure in the Y direction.

# Principles of Pergola Installation (4)

For the pergola “roof,” you can choose battens of various sizes, or Mykolas or Rombas profile cladding boards. The greater the board height “H,” the greater the gap “A” between them (Fig. 1). For example, for top elements using a 42×42 thermowood batten, the recommended gap is 42 mm, while with Mykolas 19×117 cladding boards the gap is 120 mm. Note the permissible beam span distances (Fig. 2). Distance “C” depends on the chosen batten height “H.” The table shows permissible spans when thermowood elements with gaps are installed on beams (Fig. 3). Distance D is not restricted. If you will cover the pergola with a closed roof, you must consult a structural engineer regarding the permissible span. In winter, snow will accumulate on the roof, so the loads on the structure will be significantly higher than for an open pergola.

## C Maximum distances between support points

|         |        |
|---------|--------|
| 42×42*  | 800mm  |
| 42×68*  | 1200mm |
| 42×92*  | 1600mm |
| 42×117* | 2000mm |
| 42×140* | 2400mm |

\* Marked “y” in the diagram

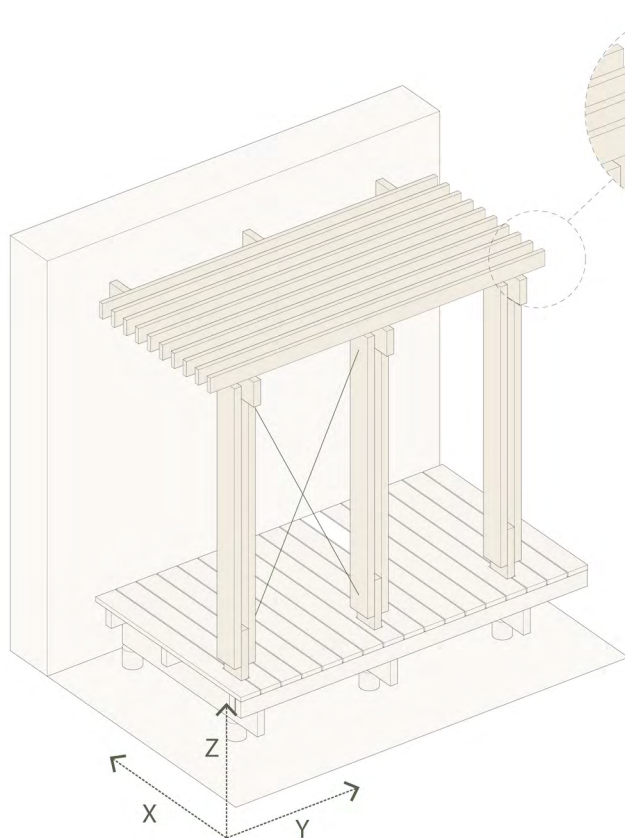


Fig. 1

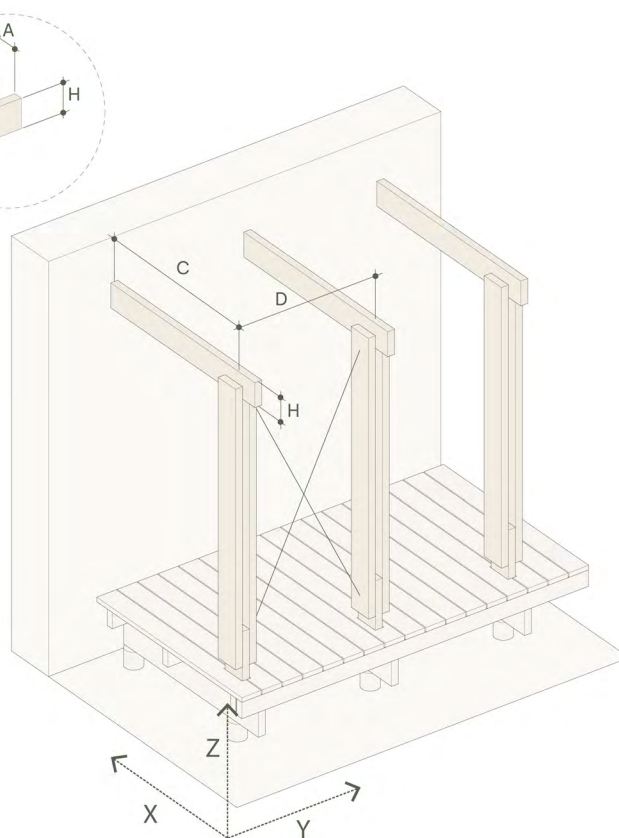


Fig. 2





**Bus stop** // Lithuania, 2023 // Battens 42x68, 42x117, decking Mykolas 26x117 // Architects: Evelina Vasiliauskaitė and Margarita Kaučikaitė // Photographer: Pijus Girdziušas



06

## Maintenance and Ageing

# Finishing and Maintenance Scenarios

We suggest choosing from several decking finishing scenarios, which will help you decide based on the surroundings, the architectural concept, and personal preference:

## 01 Uncoated

Thanks to the durability of thermowood, these decking boards can be left uncoated and allowed to grey naturally. An uncoated thermowood deck needs no special care — just occasionally wash it with decking cleaner and water, using a brush.

If the deck is fully exposed, it will grey evenly and quickly — within a few weeks. However, if part of the deck is covered or it surrounds the house on several sides, greying can occur unevenly and patchily: shaded areas will retain the caramel colour, while elsewhere the surface may grey or even darken from water and residue.

## 02 Oiled

To preserve the original caramel shade of thermowood, or to give it a chosen colour, the boards can be coated with a pigmented oil. The pigment protects the thermowood surface from UV rays and prevents greying. Due to direct sun and rain exposure as well as mechanical wear, the oil wears off fairly quickly, so an oiled deck will need to be refreshed to maintain an even colour.

Re-oiling a thermowood deck is needed only for aesthetic reasons — even once the oil has worn off, the wood will still perform its function perfectly well. To refresh the colour, wash the deck with decking cleaner and water, then re-coat with oil following the relevant oil manufacturer's instructions. We generally recommend refreshing annually, ideally in spring.

## 03 Greyed

If you like the look of greyed thermowood, but the architectural design doesn't allow the colour to change evenly — as described in the first scenario — we suggest coating the deck with grey oil in the closest matching shade. Over time the oil pigment will fade, but the worn areas will grey naturally, and the deck will retain a uniform look.

Any chosen colour and finish\* applied to a smooth, dry thermowood surface lasts considerably longer and looks far better and more refined. Resin never bleeds through. The graphic pattern of the stable-dimension boards still looks contemporary even after many years.

The entire colour range looks great — from charcoal black to caramel, soft green, greyish, or even bleached tones — but given how decks are used — mechanical wear and direct exposure to sun and rain — greyish or lighter shades are the most practical choice, as dust and mechanical wear show less on them.

*\*We do not recommend coating a thermowood deck with linseed oil, as it promotes surface mould growth.*

07

## General Maintenance Recommendations

# General Information

## **Regular cleaning**

Clean the deck surface regularly to prevent dirt and leaves from accumulating, especially before winter and in spring. Settled, dampened dust, organic particles, or pollen can form a slippery film and a breeding ground for mould or moss. Remove residue by washing with decking cleaner and water, using a brush.

Important! Do not use high-pressure washing equipment, as it can “raise” the grain on the board surface.

## **Winter care**

Clear snow with a wooden or plastic shovel to avoid scratching the surface. Do not use a salt-and-sand mix to melt snow, as it will damage the boards.

## **Proper ventilation**

Thermowood will last for decades if you let it “breathe” — don’t leave objects on the deck that block water from draining away. We recommend raising furniture, planters, or other objects on feet or pedestals so the boards can ventilate. Standing water significantly shortens the deck’s service life.

## **Surface protection**

Do not drag or push heavy or sharp objects across the deck, as they can scratch or dent the thermowood surface. Attach rubber pads to furniture feet. This will preserve the deck’s attractive appearance.

# Storage

Brolis Timber thermowood is more resistant to moisture and deformation than ordinary wood, but maintaining product quality and avoiding damage still requires following proper storage rules.

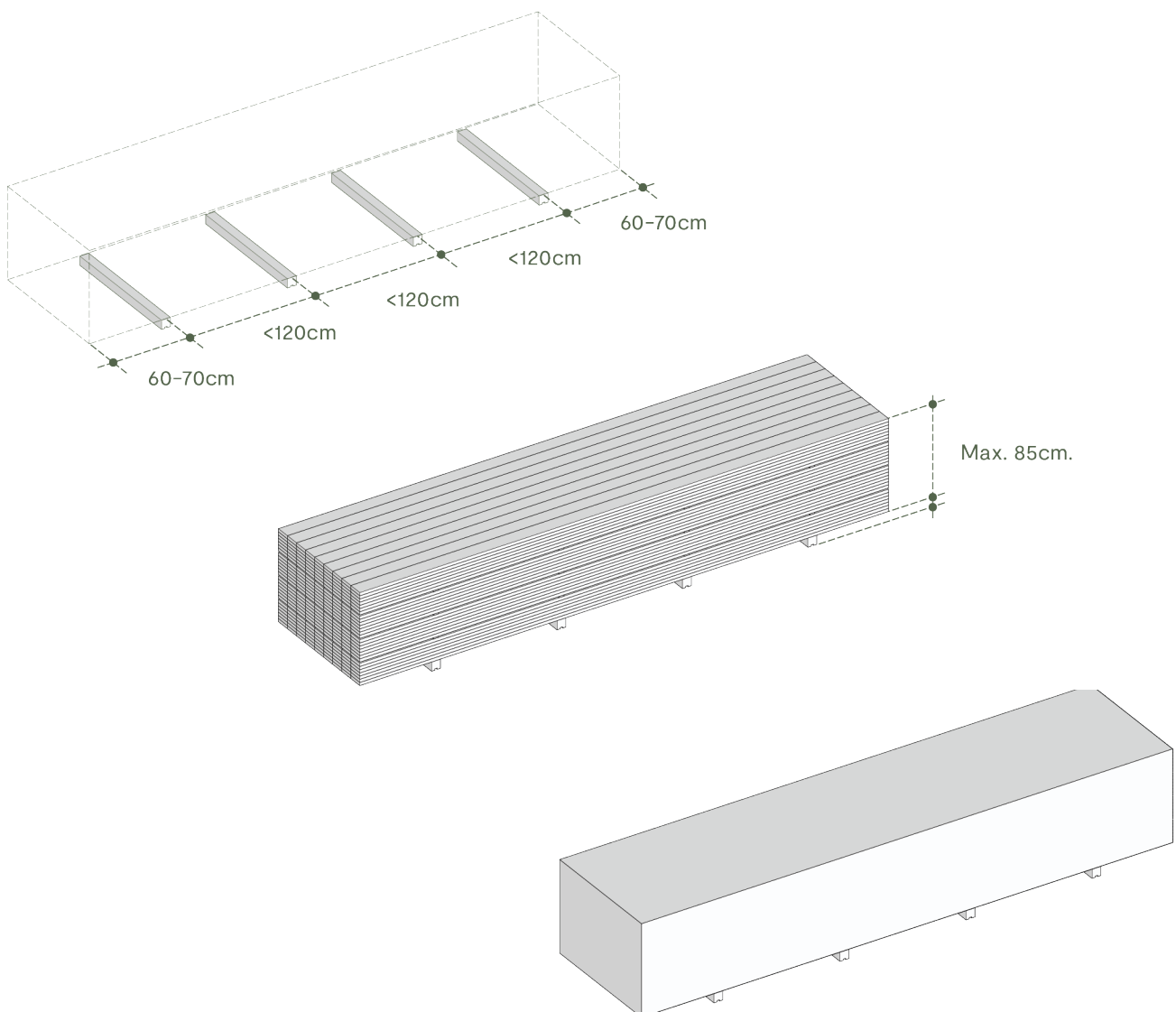
Store the boards in a dry, ventilated place, protected from direct rain and sunlight. Place them on aligned bearers, not directly on the ground. Air must be able to circulate underneath.

Before starting installation, thermowood can also be temporarily stored outdoors — it's important that it is properly protected from UV rays, rain, and snow. Timber packs are covered with a protective film over the top and sides — to prevent the boards from greying — while

the underside is left open so it can ventilate at least somewhat.

Even so, we recommend installing the product as soon as possible, since outdoors — especially on a building site — timber packs usually pick up not only moisture but also dust and pollen, which creates an ideal breeding ground for surface mould inside the covered packs. As a result, surface mould may appear while the boards are still packed, or right after installation.

When transporting and unloading — avoid impacts, bending, or pulling from one end. Lift the boards at multiple points, distributing the weight along their length.







**Riverside Business Centre decks** // Lithuania, 2020 // Mykolas 26x117 decking // Architects: Plazma Architecture Studio // Photographers: Ieva Saudargaitė, Darius Gumbrevičius



# Common Mistakes

## **Improper base preparation**

Topsoil not removed, making the deck unstable.

Base too soft or uneven, soil not compacted.

Insufficient drainage or incorrect slope, causing water to pool.

## **Poor ventilation**

Frame too close to the ground or base, preventing air circulation.

Minimum 50 mm gap between frame and base not maintained.

Deck sides closed off, blocking airflow.

## **Improper frame installation**

No stable supports used (footings, screw piles, or concrete blocks).

Gaps between frame battens too large, causing boards to deform or become unstable.

Not fixed to the base, unstable frame.

Frame batten “free” ends left too long (over 200 mm), creating an unstable structure.

## **Incorrect board installation**

Board joints not aligned with frame crossbeams, leaving boards unstable.

Required gap between boards not maintained (minimum 5 mm), no ventilation.

Board ends installed too close to frame edges, causing splitting.

## **Unsuitable fastening system**

Unsuitable fasteners used (e.g. galvanised screws, or stainless steel below the required grade).

Fasteners driven too close to the board edge, causing splitting.

Brofix or other hidden fastening systems installed without following the instructions.

## **Incorrect deck slope**

Required slope (1–2°) for water drainage not installed, causing water to pool on the deck.

Boards installed in the wrong direction (should run away from the façade).

## **Incorrect storage**

Thermowood stored in a damp or unventilated place before installation, which can cause boards to deform or develop surface mould.

## **Disregarding weather conditions**

Weather conditions disregarded — deck installed during ground frost or heavy rainfall.

Foundation depth insufficient, above the frost line, causing footings to shift or heave.

# Limitation of Liability

## **Product characteristics**

Brolis Timber thermowood is an organic material — as a result, every board differs slightly in knot pattern, weight, density, texture, or shade. Thermal modification halves the wood's movement but doesn't eliminate it entirely. The wood therefore still reacts somewhat to ambient moisture: expanding or contracting. Splits or small chips may also occur. These are natural processes and not a manufacturing defect.

## **Installation and use**

Storage, installation, and use must follow Brolis Timber's technical recommendations set out in this document. If the instructions are not followed, we are not liable for any resulting changes in quality.

Thermowood is not intended for building structures, as it is more brittle and less elastic than unmodified wood. We recommend following local building codes and regulations. If you have any questions or doubts, always consult a designer, structural engineer, or construction professional.

## **Maintenance**

If the surface is not protected with pigmented oil, thermowood will change colour outdoors and grey over time. This is a visual change and does not affect durability. If you want to retain the original colour, use a pigmented oil.

We recommend inspecting fastening points and the wood surface every year. If needed, wash the wood surface or refresh the coating following the recommendations in the Maintenance and Ageing section of this document.

Do not use high-pressure cleaning equipment, as it will "raise" the grain on the surface.

## **Manufacturer's liability**

The manufacturer's liability covers manufacturing quality issues only. If the product was used or installed without following the instructions, responsibility lies with you.

Changes caused by natural factors — such as rain, UV rays, or contamination — including colour change, cracking, or surface ageing, are not considered defects. Mechanical damage occurring during transport (except when transported by Brolis Timber), installation, or use is not the manufacturer's responsibility.

Boards that do not meet the quality grade description may not be cut or otherwise used. Until assessed, products must be stored raised off the ground on a level surface and protected from UV rays. If these instructions are not followed, the boards will not be replaced.



### Further Consultation

You are always welcome to contact us. We're happy to help you make the most of our thermowood products and avoid mistakes. You'll find our division contacts at [www.brolistimber.eu](http://www.brolistimber.eu), or you can reach us by email at [info@brolis.eu](mailto:info@brolis.eu).

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// Photographers: Saulius Žiūra, Karolis Milaševičius



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