grad®

Installation Guide

# Vertical Cladding with Flat Rail

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# CONTENTS

## *Useful Information*


| | |
|---|---|
| Wall Types | 4 |
| Installation Styles | 4 |
| Accessories | 5 |


## *Installing the Cladding*


| | |
|---|---|
| Before you begin | 7 |
| Protecting the wall | 9 |
| Cutting and preparing the rails | 9 |
| Securing the rails | 10 |
| Wood corner profile | 13 |
| Aluminium corner profile | 15 |
| Mounting a drip edge | 17 |
| Aluminium edge profile | 18 |
| Finishing without a corner profile | 19 |
| Assembling the cladding | 19 |
| Removing a board | 21 |
| Special case: using Sliding Clips | 22 |

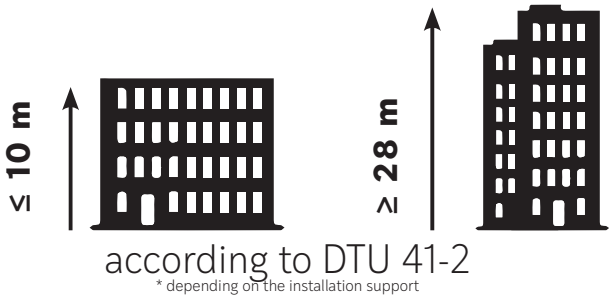
# GOOD TO KNOW

Basics of Cladding with the Grad® System

# 01. **WALL TYPES**

Our cladding system is installed using aluminium rails pre-equipped with clips. These rails can be mounted onto various wall types, including concrete, cinder block, and timber framing.

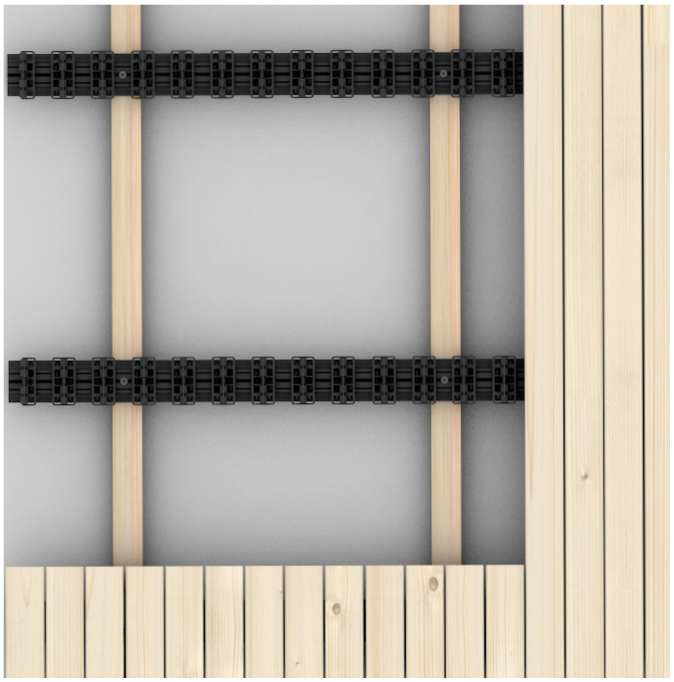
Our system allows for wall slope adjustments using shims.



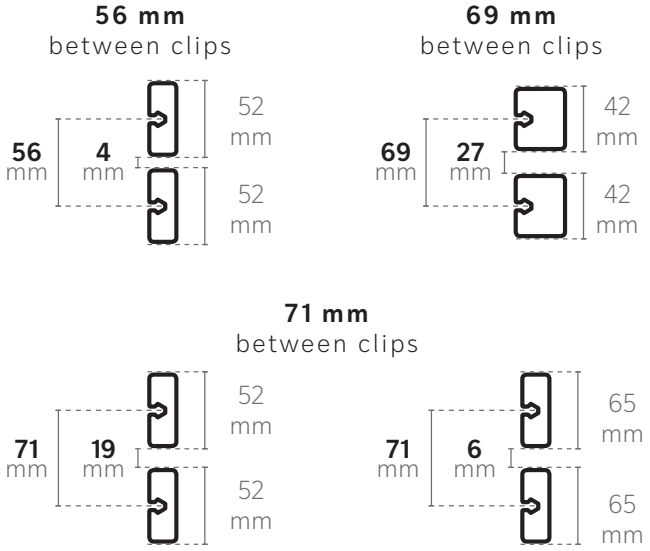

# 02. **INSTALLATION STYLES**

The cladding can be installed vertically or horizontally. The rails must be installed perpendicular to the boards: for horizontal cladding, the rails are positioned vertically; for vertical cladding, the rails are positioned horizontally.

**VERTICAL**



**POSSIBLE CONFIGURATIONS**



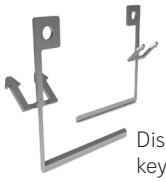
# 03. **ACCESSORIES**

Top Link

Wedge clip

Removable Grad® Clip

Half Clip

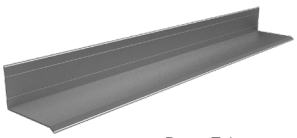


Dismantling keys

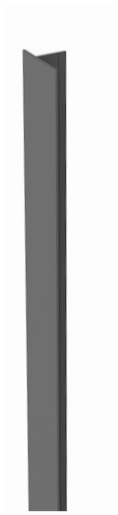
Thermo Pine Corner Profile

Aluminium corner mounting bracket

Aluminium mounting plate



Drip Edge



Edge profile

Angle profile

## ACCESSORIES

| REF | DESCRIPTION | PACKING | QTY |
|---|---|---|---|
| 2784 | **TOP LINK 46**<br>Rail joining piece - 46 mm spacing | 20 pcs/bag | 10 bags |
| 2785 | **TOP LINK 51**<br>Rail joining piece - 51 mm spacing | 20 pcs/bag | 10 bags |
| 1488 | **TOP LINK 56**<br>Rail joining piece - 56 mm spacing | 20 pcs/bag | 10 bags |
| 1489 | **TOP LINK 71**<br>Rail joining piece - 71 mm spacing | 20 pcs/bag | 10 bags |
| 1486 | **WEDGE CLIP**<br>With screw | 20 pcs/bag | 25 bags |
| 1483 | **REMOVABLE GRAD® CLIP** | 20 pcs/bag | 20 bags |
| 1485 | **HALF CLIP** | 20 pcs/bag | 20 bags |
| 3308 | **SLIDING CLIP**<br>With M5x12 countersunk screw | 20 pcs/bag | 20 bags |
| 968 | **DISMANTLING KEYS - 120**<br>For 120 mm boards | 1 pair | 6 pairs |
| 1784 | **DISMANTLING KEYS - 155**<br>For 155 mm boards | 1 pair | 10 pairs |
| 2589 | **THERMO PINE CORNER PROFILE**<br>3.8 x 3.8 x 450 cm | 1 pc | 200 pcs |
| 2997 | **ALUMINIUM CORNER PROFILE**<br>For 20 mm cladding | 1 pc | / |
| 2996 | **ALUMINIUM EDGE PROFILE**<br>For 20 mm vertical cladding | 1 pc | / |
| 2993 | **DRIP EDGE 65**<br>For 20 mm vertical cladding | 1 pc | / |
| 1221 | **ELASTOMER BAND**<br>4 mm | 1 pc | / |
| 2998 | **ALUMINIUM CORNER MOUNTING BRACKET** | 1 pc | / |
| 2999 | **ALUMINIUM MOUNTING PLATE** | 1 pc | / |

# INSTALLING GRAD® CLADDING

A Step-by-Step Guide

# BEFORE YOU BEGIN

### Transport and Storage

- Keep Grad® rails in their original packaging and store them indoors before installation.
- Rails may be temporarily stored outdoors before use.
- Follow manufacturer guidelines for storing and maintaining cladding boards
- Only use boards grooved according to Grad® specifications.
- To prevent damage or deformation, do not place heavy objects on top of the rails.

### Safety Guidelines

- Wear the recommended personal protection equipment (PPE) when cutting aluminium (safety goggles, gloves, long sleeves, and a mask).
- The installer is responsible for adhering to all safety instructions.
- Grad® is not responsible for incorrect installations or failure to follow safety instructions

# REQUIRED TOOLS
## FOR INSTALLING GRAD® CLADDING

- Pneumatic nail gun or drill
- Compressors with sufficient air supply for pneumatic tools
- Laser level & manual level
- Tape measure
- Mitre saw & jigsaw
- Hammer (with plastic cap)
- Clamps
- Personal protective equipment (PPE)

# PRE-INSTALLATION CHECKLIST

- The wall must be straight, level, and undamaged.
- With the appropriate fixings, the rails can be installed directly on a concrete wall, wooden supports, or any other hard, flat surface.
- The boards used with the Grad® system must comply with local regulations.
- The user must verify in advance that the rails available are compatible with the boards they intend to use.
- Only material grooved according to Grad® specifications can be used with Grad® rails.
- Installers must ensure that the structure includes moisture protection, such as a rain barrier, against weather conditions. These must be installed in compliance with local regulations and meet the manufacturer's requirements, particularly for the following points:
  - → Openings (doors and windows)
  - → Wall/ceiling junctions
  - → Chimneys
  - → Transition with another type of cladding

# DISCLAIMER

While this guide has been designed with the utmost accuracy according to current cladding practices, we are not responsible for errors or omissions that may arise from its use. All users assume full risks and responsibilities associated with it.

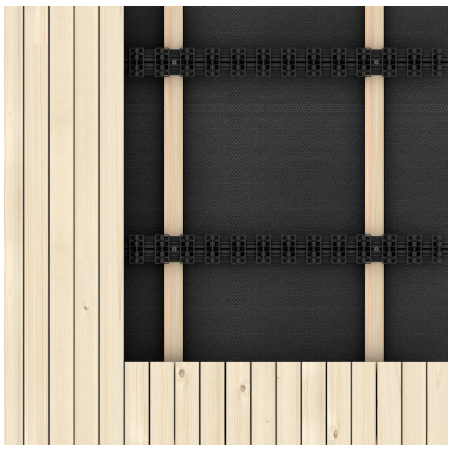
This guide presents the best installation practices for Grad®. It should be used in conjunction with local regulations and the technical specifications of cladding manufacturers. It is the duty and responsibility of the installer to consider all available documentation before beginning work to ensure the validity of the manufacturer's warranties.

For simplification and legibility, the technical drawings in this guide do not show all construction details required to meet regulations and standards.

**Do not hesitate to contact us in case of doubt or if you have questions regarding specific applications of Grad® rails that are not covered in this guide.**

# 01. **PROTECTING THE WALL**

Before installing the cladding, protect the wall with a rain barrier (mandatory for open-joint cladding per DTU 41.2 standards).



**Choose the correct rain barrier for your project:**

**Open-joint cladding:**
- Water penetration resistance W1
  → (tested to 5000 hours UV – EN 13859-2)

**Closed-joint cladding:**
- Water penetration resistance W2
  → (tested to 336 hours UV – EN 13859-2)

# 02. **CUTTING AND PREPARING THE RAILS**

When possible, use full length rails. However, rails may need to be cut if the length of the wall is not 2 meters or a multiple of 2 meters.

Measure the length of the wall, taking into account that the rails **must start at a minimum of 20 cm from the ground.**

Cut the rails to match the length of the wall.
When possible, cut between two clips. However, if there is a clip where the cut needs to be, remove the clip using the disassembly keys.

**Attention: It is important to protect your eyes with appropriate PPE in case of projections.**

# 03. **MOUNTING THE RAILS**

The rails can be fixed directly to any hard, flat surface such as a concrete wall, studs, or timber framing using stainless steel nails or screws.

*Note: The use of self-tapping screws eliminates the need to pre-drill the rails. There is no installation direction for standard rails, as they are symmetrical.*

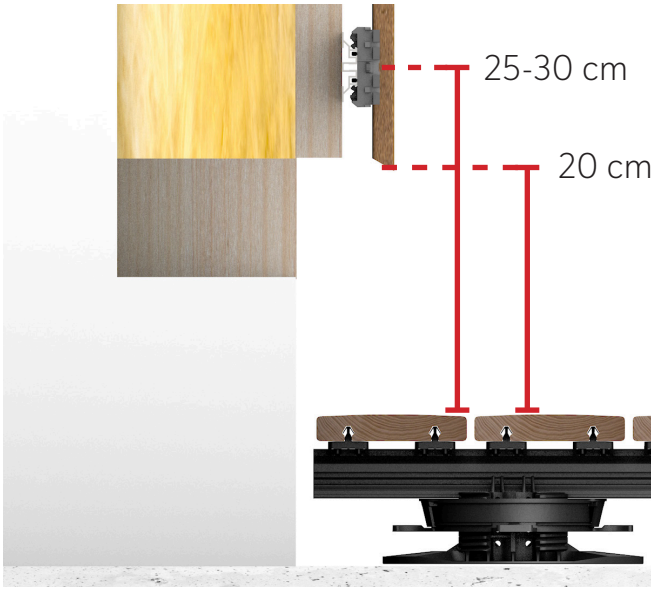
The choice and sizing of fasteners are defined in the technical data sheet for the Flat Rail (DS133). These dimensions take into account the wind force exerted on the cladding.

## *Install the first rail*

Position the rail so that the ends of the boards will be at least 20 cm from the ground, ensuring that the boards do not extend past the rails by more than 10 cm.

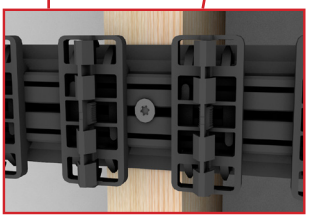
Use a level to ensure that the rail is correctly positioned on the wall. Secure the rail to the wall using the appropriate tool and fasteners for your substrate.

Using a laser level or string, draw a vertical reference line along the height of the wall to ensure the clips on all of the rails are aligned.




**VERTICAL CLADDING INSTALLATION**

Distance between fixings: refer to the Flat Rail technical data sheet (DS133) (varies according to geographical area)



SCAN ME!

# 03. **MOUNTING THE RAILS**

## *Mark the rail spans*

The maximum distance between rails is 65 cm. This space can be adjusted on site to match the dimensions of the wall and to optimize the trimming of the cladding boards.

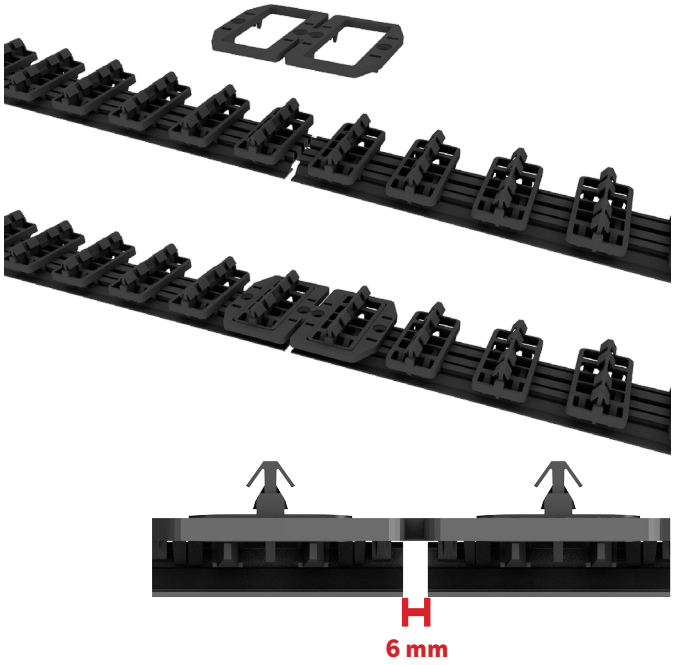
## *Install the other rails*

They must be parallel to the first rail and follow the reference line drawn to ensure the clips are aligned across all of the rails.

## *Connecting two rails*

For façades over two meters wide, Top Link rail connectors allow the rails to quickly be aligned and butt-jointed with the correct spacing to allow for potential aluminium expansion.

- Make sure the first rail is secured to the wall
- Place the second rail against the first and position the Top Link as shown to the right.
- Use a level to make sure the second rail is properly aligned, and secure it to the wall




In some cases, it may not be possible to install a Top Link. In this case, place a rail beside the two rails to be butt-jointed. This extra rail will serve as a guide to ensure that the clips are spaced correctly.

*Note: Make sure there is a 6 mm gap between the two rails to allow for the expansion of the aluminium. Top Link does not prevent the boards from being unclipped in vertical, open-joint cladding.*

| Reference | Product Name |
|---|---|
| **2784** | Top Link 46 |
| **2785** | Top Link 51 |
| **1488** | Top Link 56 |
| **1489** | Top Link 71 |

**Butt-jointing without Top Link**

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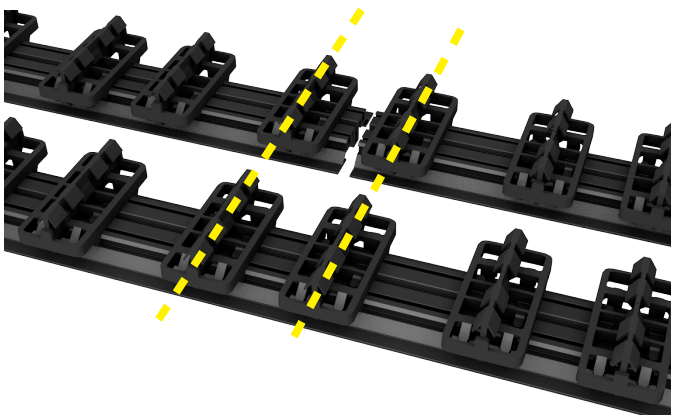


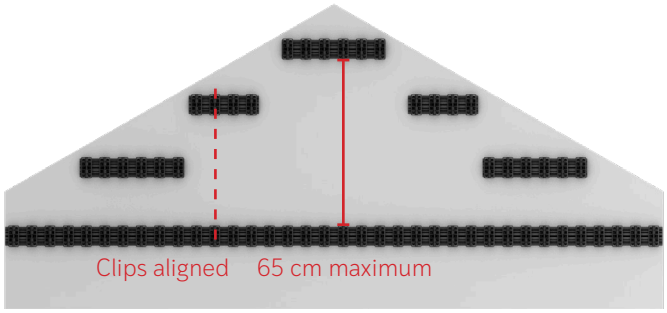
# 03. **MOUNTING THE RAILS**

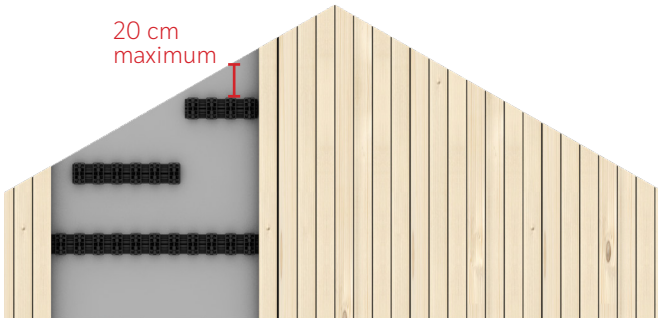
## *Roof Gables*

The maximum that a board can extend past the last rail is 20 cm.

For cladding on roof gables, short rails must be added along the slope of the roof to ensure that the cladding boards are secure.

Always ensure that the clips of all rails are aligned.



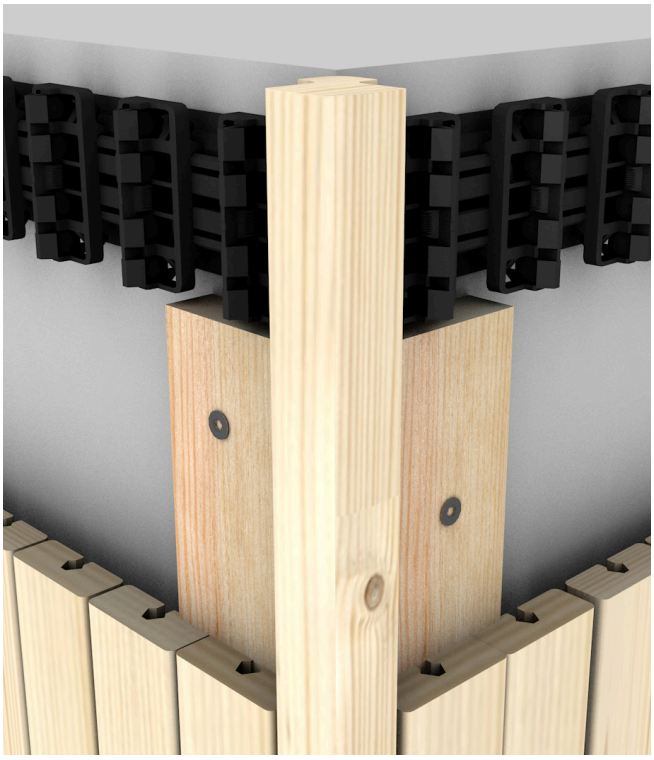



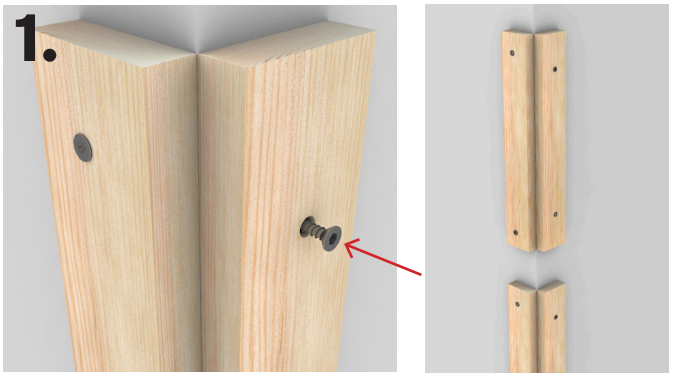
# 04. **INSTALLING A WOODEN CORNER PROFILE**

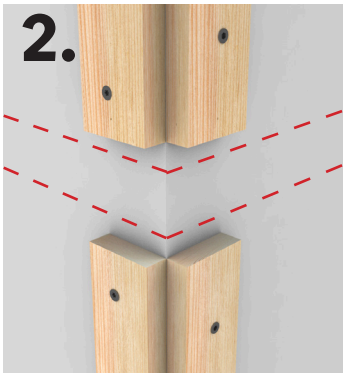
The corner profile should be secured to the battens at least every 60 cm, on alternating sides of the profile.

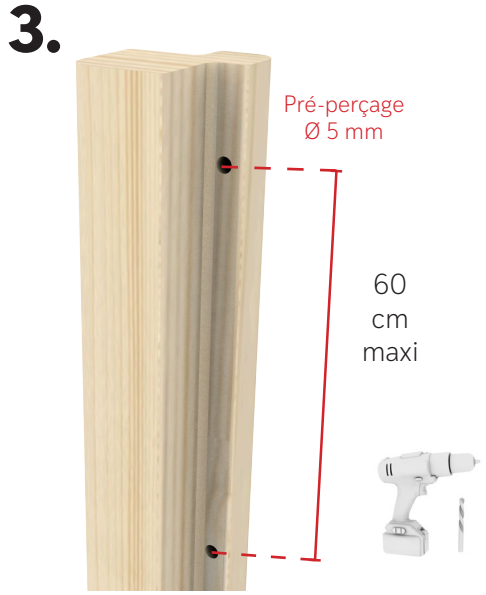
1. Mount the battens along both sides of the corner. Secure them with the appropriate fasteners.
2. Leave enough space for the rails to fit between the battens.
3. Pre-drill the corner profile using a drill bit suited to the diameter of the corner profile fasteners.
   → *We recommend a ø 4.5 mm screw and a ø 5 mm pre-drill.*
   → *Distance: every 60 cm max.*
4. Secure the corner profile to the battens on alternating sides of the profile.

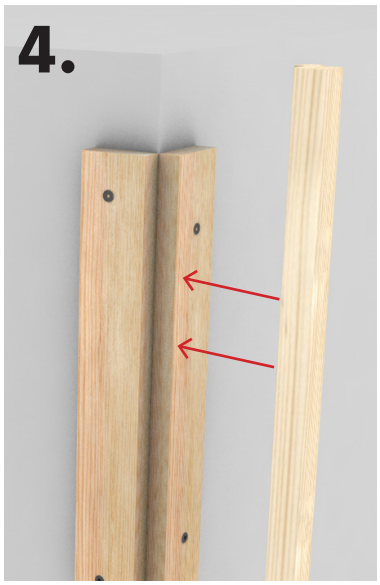
The wooden corner profile can also be used in an inset corner by following the same installation steps above.



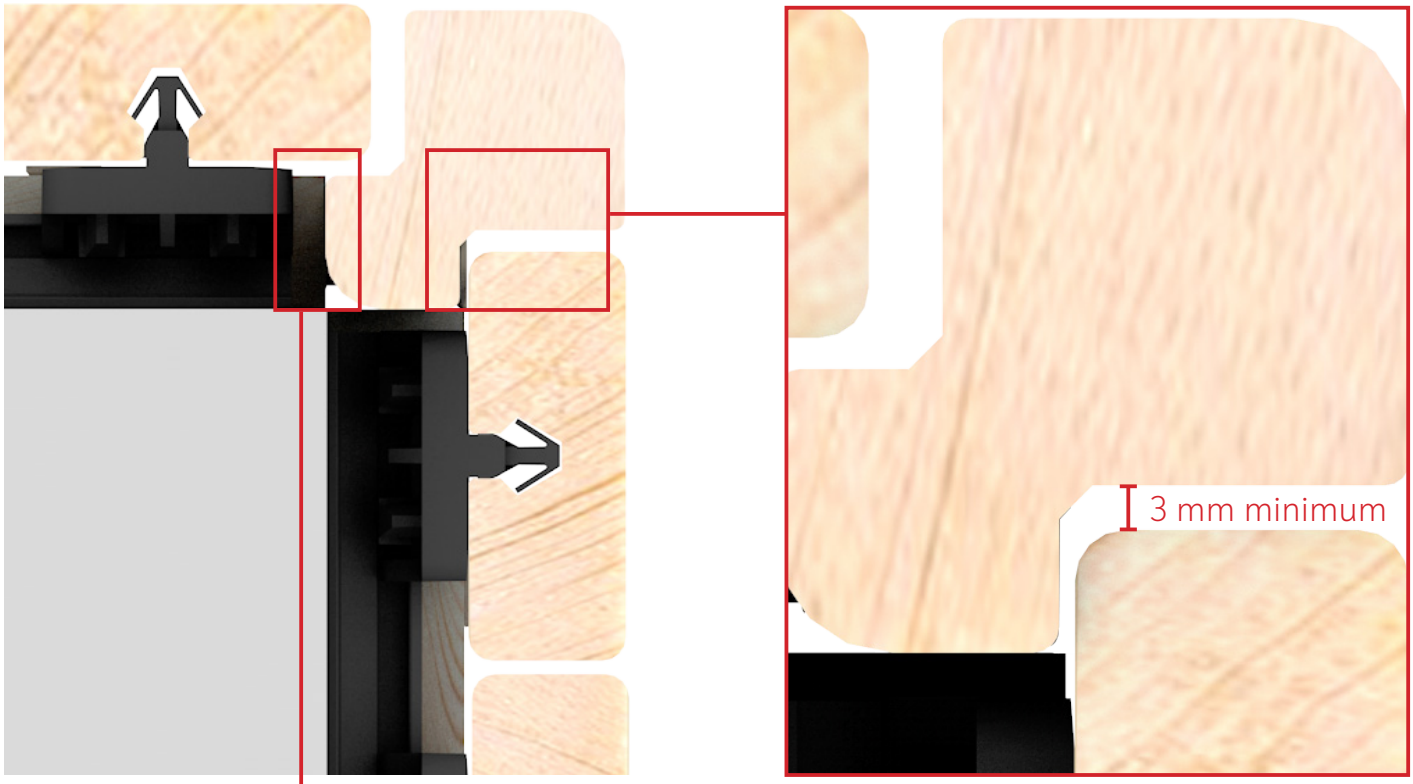


# 04. **INSTALLING A WOODEN CORNER PROFILE**

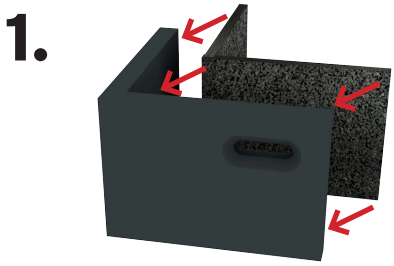


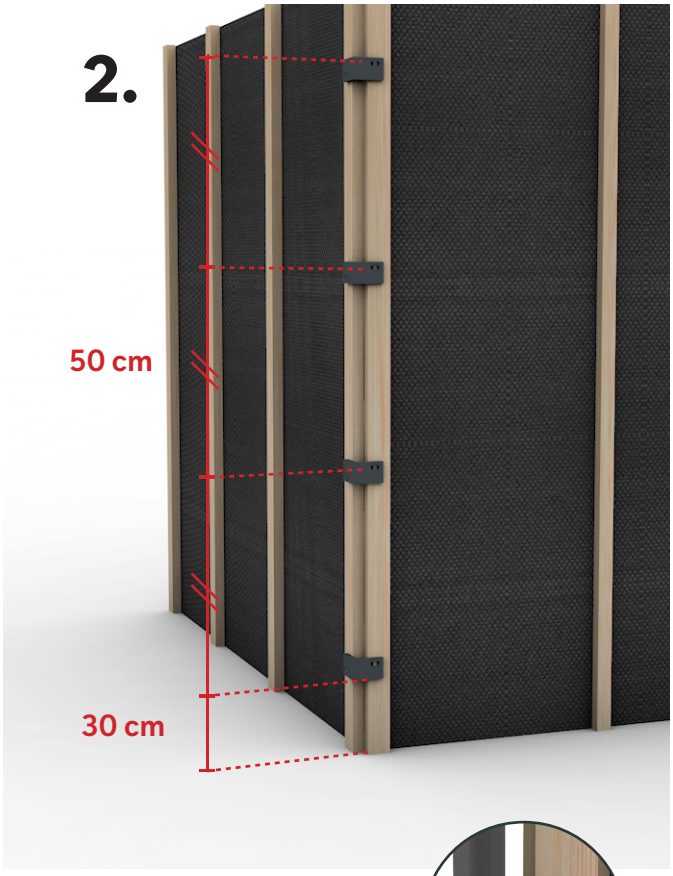

If necessary, cut the rails flush with the clips. Leave a minimum gap of 3 mm between the boards and the corner profile.

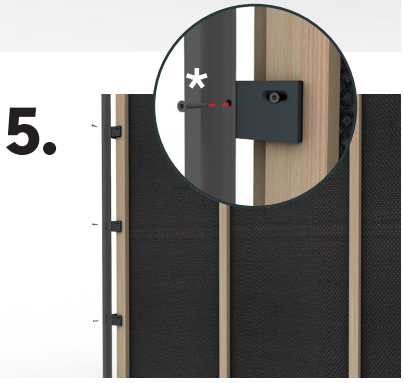
# 04. **INSTALLING AN ALUMINIUM CORNER PROFILE**

To install an aluminium corner profile:

1. Fit the corner mounting brackets with a piece of elastomer band.
2. Place the first mounting bracket 30 cm from the ground, then every 50 cm.
3. Position the aluminium profile against the brackets and pierce the profile with a ø 3 mm drill bit enough to make a mark on the mounting brackets.
4. Remove the corner profile and finish pre-drilling the mounting brackets.
5. Reposition the corner profile and secure it to the mounting brackets with the appropriate screws. →

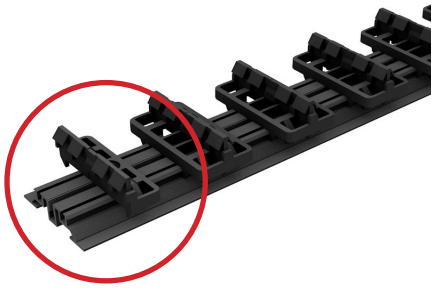


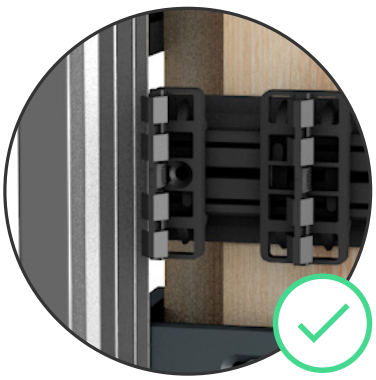






Before installing the rails, replace the first clip on the rail with a Half Clip to prevent a collision between the clip and the corner profile.

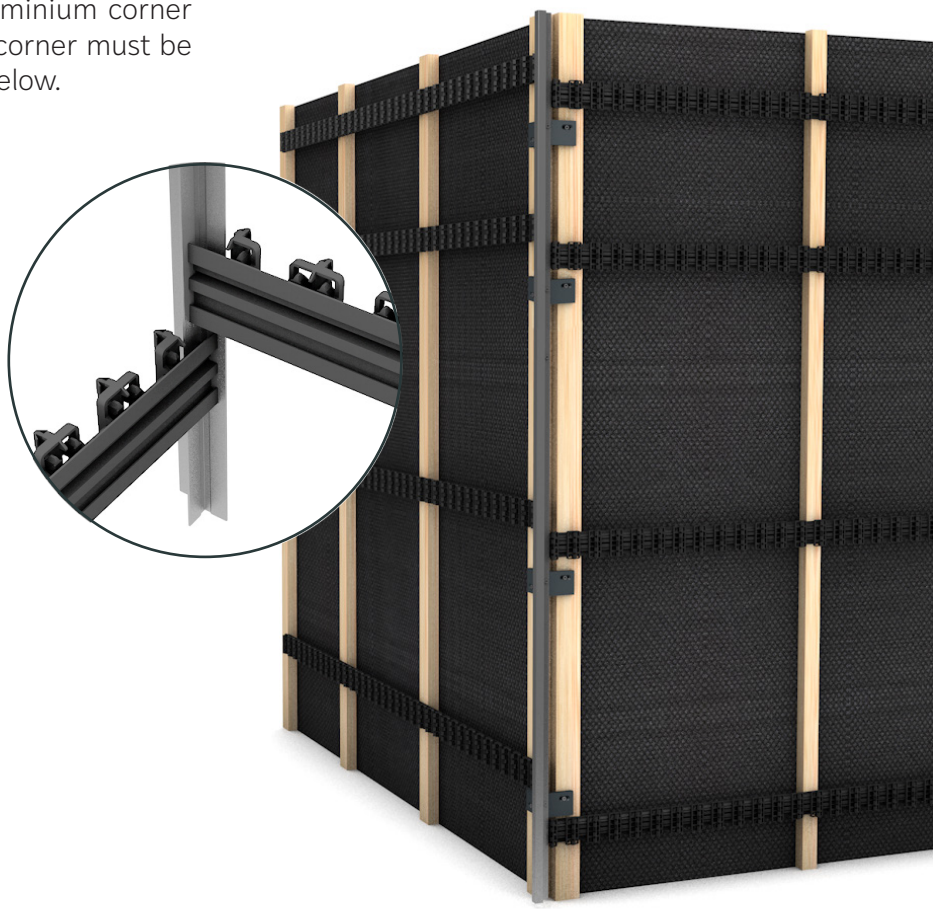
Pre-drill the rail according to the maximum distance between fasteners indicated in the Flat Rail technical data sheet (DS133).





# 04. **INSTALLING AN ALUMINIUM CORNER PROFILE**

When installing the rails with an aluminium corner profile, the rails on each side of the corner must be offset, as shown in the illustrations below.



Once the Clip Grips have been installed (see pg. 20), the cladding boards can be installed.

# 05. **INSTALLING A DRIP EDGE PROFILE**

If there's an opening in the wall (e.g. a window), it is recommended to install a drip edge profile.

The drip edge is an easy-to-install aluminium profile designed to prevent water from infiltrating the cladding. It slopes down and outwards to encourage water to drain away from the building's structure, and acts as a protective barrier by diverting rainwater that might run down the façade, preventing it from seeping behind the cladding.

In addition to keeping the wall watertight, this profile also adds an aesthetic finishing touch to the project.

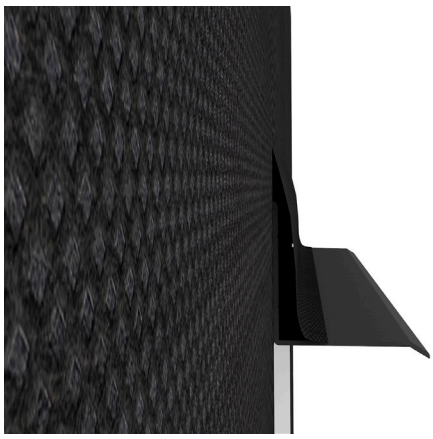
SCAN ME!

| Reference | Product Name |
|---|---|
| 2993 | Drip Edge 65 |

## *Mounting the drip edge profile*

1. Using a level, position the profile along the wall above the opening.
2. Secure the profile using screws suitable for the substrate.

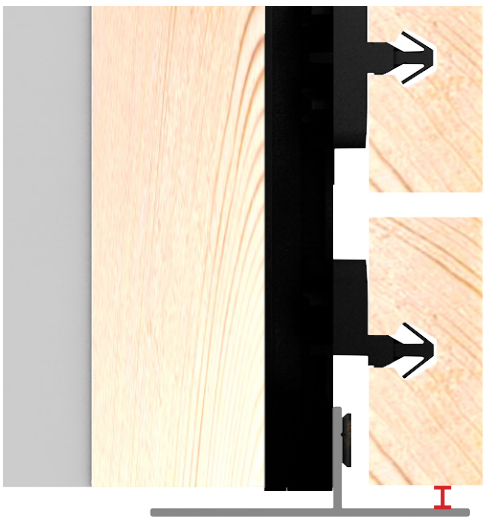
*Note: if a rain screen is used, it must cover the top of the drip edge once it is fixed to the wall (see below).*

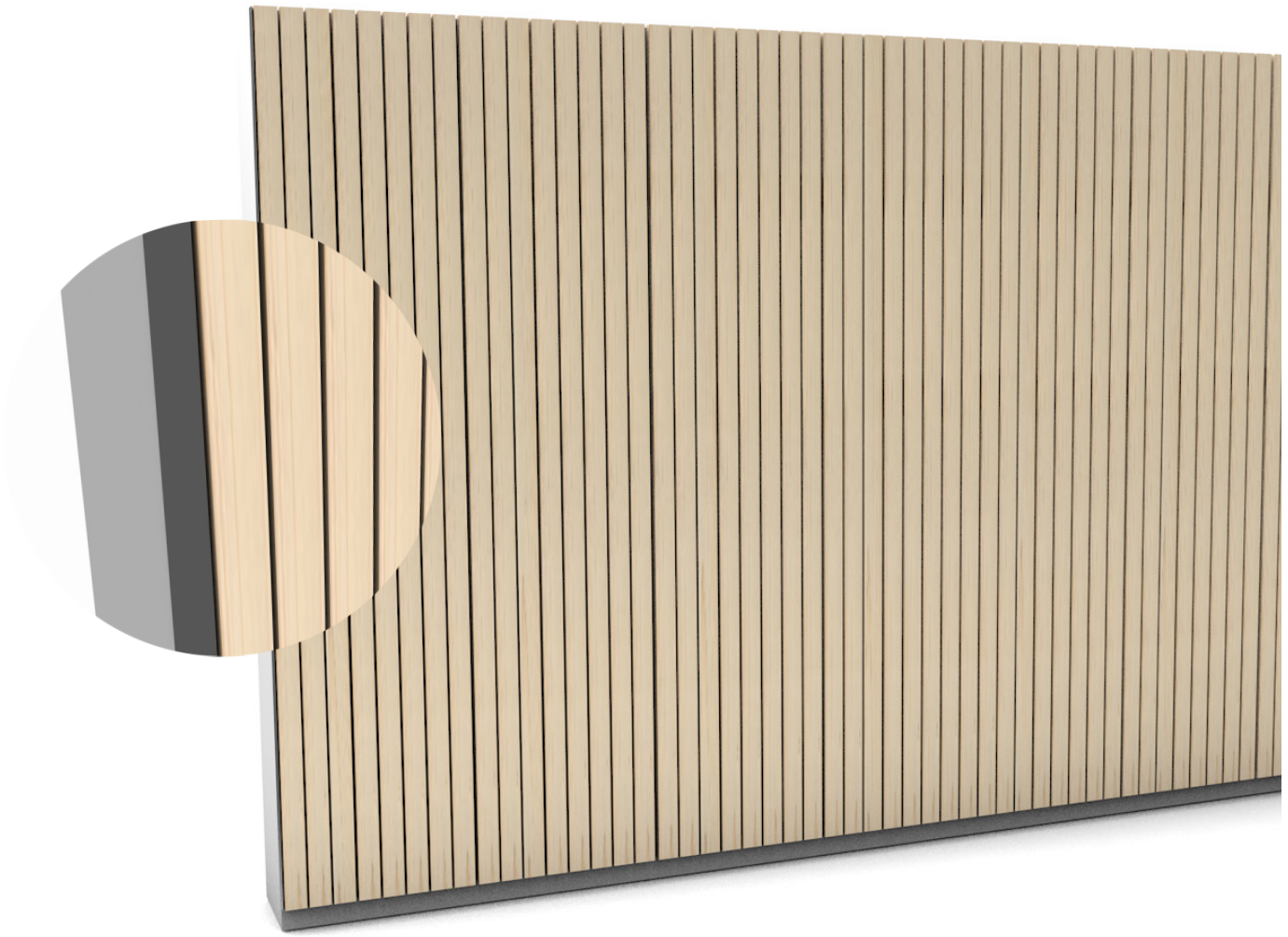


# 06. **ALUMINIUM EDGE PROFILE**

If the cladding is installed on a single wall section without a corner, an aluminium edge profile can be installed.

The aluminium edge profile is installed the same way as the aluminium corner profile (see pg. 15)

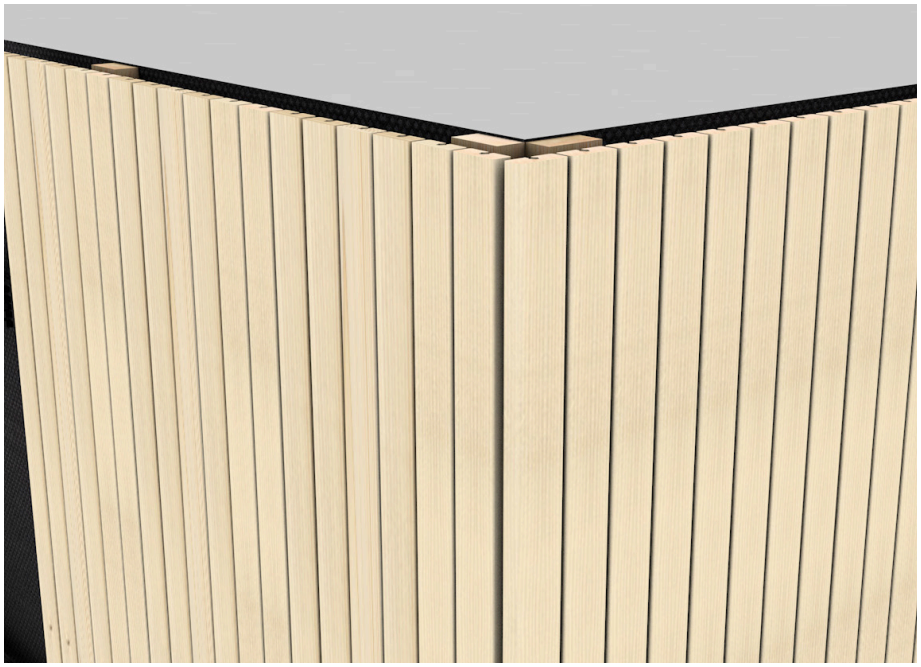


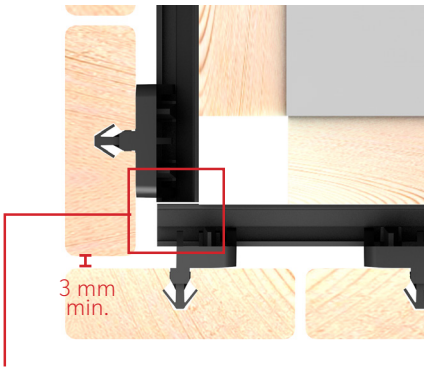


# 07. **CORNER FINISH WITHOUT A PROFILE**

For a corner finish without using a profile, we recommend finishing the corner with a butt joint.

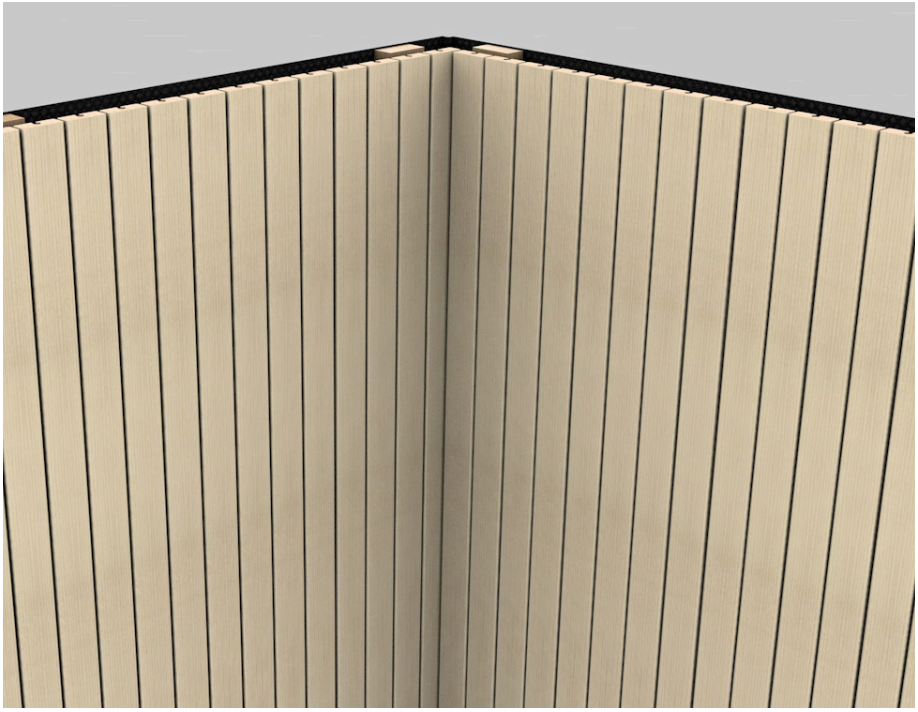
On an external corner

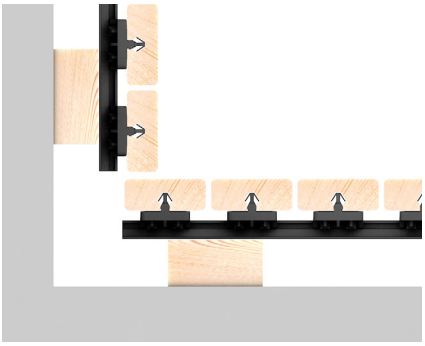


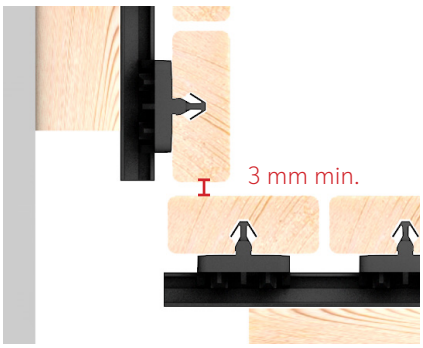



Cut the rails back to the edge of the clip. If necessary, a half-clip can be added.

On an interior corner







# 08. **ASSEMBLING THE CLADDING**

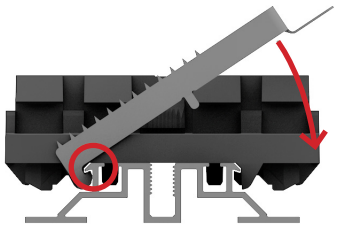
## *Adding Clip Grips*

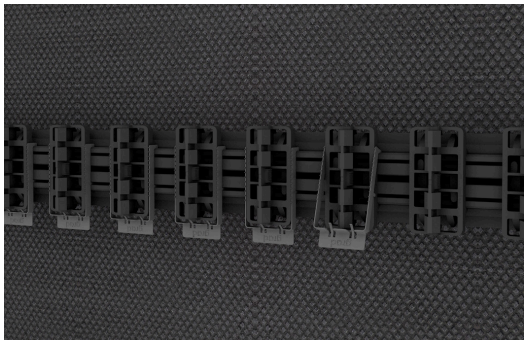
Clip Grips hold the boards in place and prevent them from shifting along the clips.

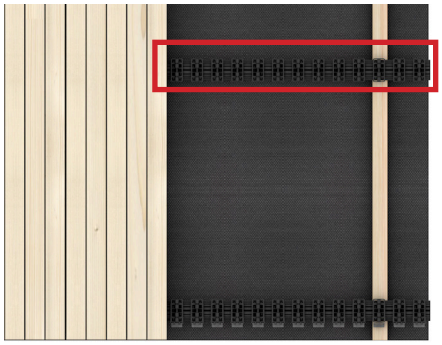
SCAN ME!

Clip Grips are installed over removable Grad® clips. This step should be carried out before the boards are positioned.

To install a Clip Grip, insert the hooks into the grooves on the side of the rail, then lower the Clip Grip until it locks into place. We also recommend installing them on the lower rails. Every board needs to be mounted onto at least one Clip Grip.







Please note that once the teeth of the Clip Grip are embedded in a board, it is no longer possible to slide the board along the clips. The boards, therefore, need to be positioned with precision.

Clip Grips are not suitable for:

- installation on a half-clip
- installation on a removable clip fitted with a Top Link

To install the cladding boards, gently press the first board by hand onto the first clip or clips of the rail closest to the ground. **Do not use a hammer or other tools that could damage the board.**

Complete the row with more boards until you reach the other end of the wall.

Start the second row of boards above the first. All boards must be clipped onto at least two rails to ensure they are securely installed. The board joints can be aligned or staggered, depending on the desired aesthetic result.

It is recommended to leave a space (generally 3-5 mm) between the ends of two boards to prevent water stagnation and allow the wood to expand. *Consult the recommendations of the board manufacturer for the minimum space required.*

When installing vertical cladding, it is recommended to trim the ends of each board at a 30° angle to prevent water stagnation.

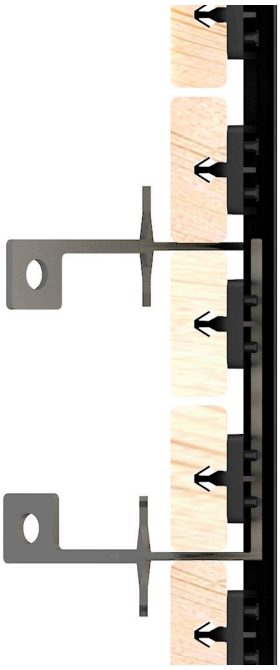
Don't hesitate to contact Grad® for more information or if you have any questions.

# 09. **REMOVING A BOARD**

For open-joint cladding, it is possible to remove a board using the dismantling keys. The keys' reference should be chosen according to the cladding profile and the spacing between the boards.

The keys must be positioned as shown here and slid along the rail until they are wedged between the clip and the rail. Tilt the keys away from each other and they will detach the clip from the rail. Then, carefully slide the clips out of board and re-clip them into the perforations in the rail.

*There must be a gap of at least 4 mm between the boards in order for the keys to be inserted.*



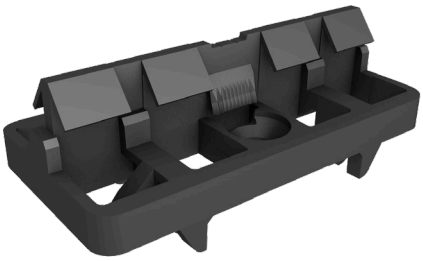
| **Rail ref.** | Dismantling keys compatibility | |
|---|---|---|
| **1188** | Keys 120 ref 968 | Clip span 56 mm |
| **1187** | Keys 145 ref 1010 | Clip spans 69/71 mm |

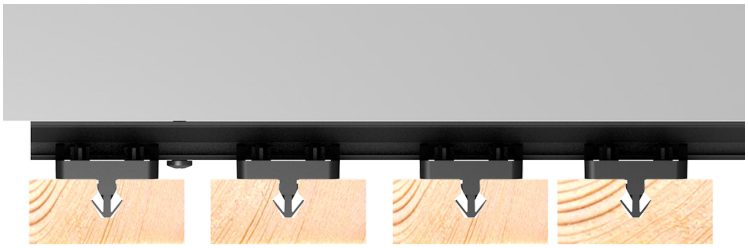
# 10. SPECIAL CASE: **SLIDING CLIP**

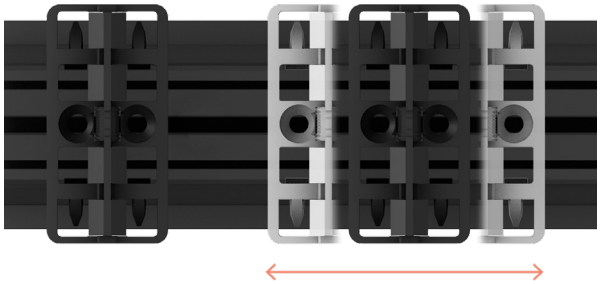
For special cases that require board adjustments, removable Grad® clips can be replaced with Sliding Clips. These clips can be used to accentuate or reduce the gap between boards.

Once the clip has been positioned, it can be held in place using an M5x12 countersunk screw.

*Please note that once the clip is held in position with a screw, it can no longer be removed using the dismantling keys.*





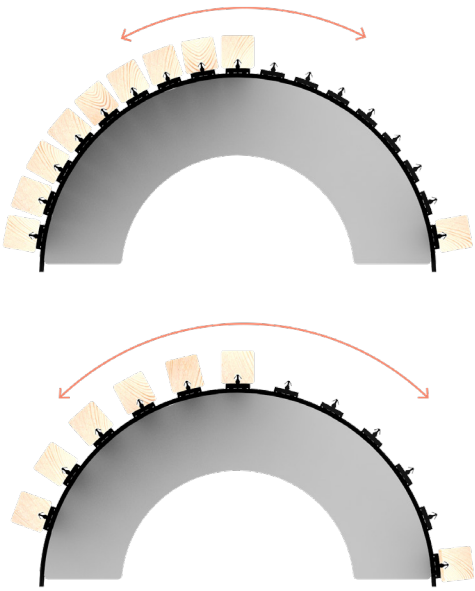


*Sliding Clip information*

| Reference | Product name |
|---|---|
| 3362 | Sliding clip |

## *Adding Sliding Clips to Mini Rail*

When used on Mini Rail, the sliding clips allow the cladding boards to be adjusted on a curved support. The clips will be held in position with a wood screw, for example.



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