



THERMOWOOD®

CLADDING INSTALLATION GUIDE





FOREWORD

Timber cladding provides an attractive, economical and often unique way to finish and protect a building's exterior. Its versatility makes it ideal for any project – refurbished and new build.

Correctly designed, specified and installed, timber cladding will have a long and lower maintenance life.

The information below sets out some important aspects that need to be considered at the design stage of a timber cladding project.



Low maintenance



Wood from sustainable managed forests



Long lifespan up to 20 years



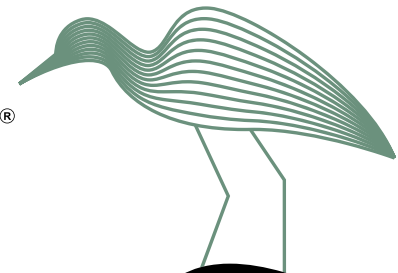
Optional certified in-house fire retardant treatment

LDCWOOD®

Innovative Belgian ThermoWood® producer & member of the International ThermoWood® Association.

Foreword	1
Key tips for a correct installation	3
How facades age and adapt differently	4
Cladding orientation	5
Cladding design considerations	6
Support battens	9
Functions of the air cavity behind cladding.....	11
Wooden support battens.....	13
Fasteners	17
Nails & screws.....	17
End joints.....	18

Installation of cladding products	20
Installation guidelines for rib profiles.....	23
Installation guidelines for T&G.....	24
Installation guideline for hidden nailing.....	25
Installation guideline for corner installation.....	26
Materials handling and storage	28
Maintenance	29
Contact	31



KEY TIPS FOR CORRECT INSTALLATION

LDCwood® ThermoWood® is a modified wood product that is heat-treated to enhance its properties, making it more durable, stable, and resistant to decay. Before installing a LDCwood® ThermoWood® facade, there are several important factors to consider to ensure a successful and long-lasting installation. Here are some general tips to take into account:

- 1. Product Selection** - Choose the appropriate type of LDCwood® ThermoWood® for your facade project. LDCwood® ThermoWood® is available in various wood species, and each species has unique characteristics in terms of color, grain pattern, and durability. Select a species that suits your design preferences and the environmental conditions of the installation site.
- 2. Quality of Material** - All LDCwood® ThermoWood® complies with product class Thermo-D. The “D” stands for “Durability” thus ensuring a higher stability and -resistance to decay and weather.
- 3. Fire-retardant treatment consideration** - Evaluate whether your wood requires fire-retardant treatment. This can be organized industrially in advance. We can give timber products a fire-retardant treatment with Burnblock® in our autoclave under pressure.
- 4. Acclimatization** - Allow the LDCwood® ThermoWood® to acclimate to the local climate and humidity before installation. This helps minimize dimensional changes that could occur after installation due to moisture fluctuations (see page 28 for more details).
- 5. Moisture Content** - Check the moisture content of the LDCwood® ThermoWood® boards. Ideally, they should have a moisture content that is appropriate for the local climate to avoid excessive expansion or contraction after installation ($\pm 4-7\%$).
- 6. Substrate and Structural Support** - Ensure that the substrate (the underlying surface) is appropriate for cladding installation and provides adequate structural support. The substrate should be flat, even, and free from defects that could affect the cladding's performance.
- 7. Weather Barrier** - Install a weather-resistant barrier between the LDCwood® ThermoWood® cladding and the substrate to prevent moisture infiltration. This barrier is essential for protecting the building structure from water damage between strapping and structure.
- 8. Spacing and Fastening** - Follow the manufacturer's recommendations for spacing and fastening the LDCwood® ThermoWood® boards.
- 9. Ventilation and Drainage** - Incorporate proper ventilation and drainage systems behind the cladding to allow moisture to escape. This prevents moisture buildup that can lead to decay or other issues (see page 28 for more details).
- 10. Finishing and Coating** - LDCwood® ThermoWood® is often used without a finish, as it weathers gracefully to a silver-gray color over time. However, you can choose to apply a protective finish or coating if you prefer to maintain its original color. If applying a finish, ensure it's compatible with LDCwood® ThermoWood® and suitable for exterior use.
- 11. Thermal Movement** - LDCwood® ThermoWood® has reduced thermal expansion and contraction compared to untreated wood, but it's still important to account for these movements during installation. Leave expansion gaps and use appropriate, stainless steel fixings to accommodate these changes (see pages 17-27 for more details).
- 12. Consultation:** - If you're not experienced with facade installation, we recommend consulting our experts at protectedbynature@ldcwood.com who have expertise with LDCwood® ThermoWood® and cladding systems. They can provide guidance on best practices and ensure the installation is done correctly.
- 13. Regulations and Codes** - Check local building codes and regulations to ensure that your LDCwood® ThermoWood® facade installation complies with safety, fire resistance, and other relevant standards.
- 14. Maintenance Considerations** - While LDCwood® ThermoWood® is more durable than untreated wood, it still requires some maintenance. Consider the long-term maintenance requirements, including cleaning, refinishing, and any necessary repairs.

By carefully considering these factors and following manufacturer guidelines, you can ensure a successful and visually appealing installation of your LDCwood® ThermoWood® facade that will stand up well to the elements and the test of time.

HOW FACADES AGE AND ADAPT DIFFERENTLY

LDCwood® ThermoWood® facades, also known as wooden exteriors or cladding, age and adapt differently compared to other building materials due to the unique properties. Several factors, including the specific type of wood used, environmental conditions, maintenance practices, and design choices, influence the aging and adaptation of these wooden facades. Let's explore the aging and adaptation of wooden exteriors.

In summary, LDCwood® ThermoWood® facades age and adapt differently due to the natural properties of wood and the interactions between the material and its environment. While aging can lead to changes in color, texture, and surface features, proper design, maintenance, and finishing practices can help enhance the prolonged durability and aesthetic appeal of such facades.

1. Initial Appearance and Aging

When initially installed, a ThermoWood® facade by LDCwood® presents a vibrant and fresh appearance. As time passes, the wood's natural aging process takes effect, resulting in a transition to a silvery-grey tone, due to exposure to sunlight and air. The rate and extent of this transformation depends on the ThermoWood® species and the local climate.»

2. Swelling and shrinkage due to moisture

The decreased equilibrium moisture content of LDCwood® ThermoWood® minimizes its swelling and shrinkage due to moisture. The thermal modification process notably decreases tangential and radial swelling in ThermoWood®.

Thanks to reduced swelling and shrinkage, LDCwood® ThermoWood® is more dimensionally stable than standard wood. It retains its dimensions well, even without surface treatment. Minor cracks, a common occurrence, are generally of little concern, with some individuals even viewing them as contributing to the facade's character.

3. Maintenance and Finishing

The aging process of facades can be influenced by the maintenance practices employed. Regular cleaning, sealing, and refinishing can help prolong the life of the facade and maintain a desired appearance. Applying pre-finished stains, paints, or protective coatings can alter the rate of weathering and provide additional protection against UV rays and other environmental factors. We can assist you in making the optimal choice between achieving your desired look and ensuring impeccable protection.

4. Environmental Impact

The local climate plays a significant role in how LDCwood® ThermoWood® facades age and adapt. Regions with high UV exposure can accelerate the color change process, while areas with heavy rain and wind might contribute to a more weathered appearance.

5. Design Considerations

The way a LDCwood® ThermoWood® facade is designed can also impact its aging and adaptation. Factors such as the orientation of the facade, the presence of overhangs, and the use of protective elements like eaves can affect the amount of exposure to environmental elements. Proper detailing and construction techniques can help minimize moisture infiltration and ensure the facade's longevity.

2019



2023



**Aging process
LDCwood® ThermoWood® Ayous
RCC Maria Assumptia Dilbeek
(Belgium)**

CLADDING ORIENTATION

The orientation of cladding can greatly influence the visual appearance and overall aesthetics of a building's facade. The choice of orientation can also impact how sunlight, rain, and other environmental factors interact with the cladding. Here are some options for the orientation of LDCwood® ThermoWood® cladding:

Horizontal Orientation

This is probably the most common orientation for cladding installation. The boards are placed horizontally, running parallel to the ground. Horizontal cladding can create a sense of stability and width, making the building appear grounded. It's suitable for a wide range of architectural styles and can, when specific profiles used, help shed water effectively.

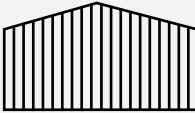
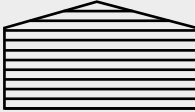
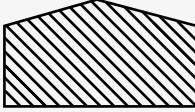
Vertical Orientation

Vertical cladding involves installing the boards vertically, running perpendicular to the ground. Vertical orientation can visually elongate a building, making it appear taller and more elegant. It can also enhance the sense of height for low-rise structures. However, vertical cladding may require more attention to detailing at joints and intersections to prevent water infiltration. Also here some specific profiles are more suitable than others, consult us for any further advice.

Diagonal or Angled Orientation

Installing the cladding at a diagonal or angled pattern adds a dynamic and distinctive visual effect to the facade. This orientation can add movement and energy to the building's appearance. However, it might be more complex to install and may require more precise cutting and detailing.

When deciding on the orientation of LDCwood® ThermoWood® cladding, consider the architectural style of the building, the desired visual effect, and how the orientation will interact with other design elements. Additionally, take into account the climate and weather conditions in the building's location, as some orientations may be better suited to shedding water and minimizing moisture retention. Consulting with design professionals or architects can help you make an informed decision that aligns with your design goals and functional requirements.

ORIENTATION	WATER DRAINAGE	SUITABLE FOR
 VERTICAL	quick and uniform	any location
 HORIZONTAL	medium	with caution in areas with high rainfall
 DIAGONAL	slow	to be avoided in areas with high rainfall

CLADDING DESIGN CONSIDERATIONS

Designing a LDCwood® ThermoWood® cladding system involves careful consideration of various factors to achieve both aesthetic appeal and functional performance. Here are some key design considerations to keep in mind when working on a LDCwood® ThermoWood® cladding project:

Architectural Style and Context

The design of the LDCwood® ThermoWood® cladding should complement the architectural style of the building and the surrounding environment. Whether it's modern, traditional, rustic, or contemporary, the cladding should harmonize with the overall design language.

Material Selection

Choose the right LDCwood® ThermoWood® species based on factors such as durability, aesthetic preferences, and local availability. Consider whether you want the LDCwood® ThermoWood® to age naturally or maintain its original color through finishes.

Orientation and Pattern

Decide on the orientation of the cladding boards, such as horizontal, vertical, diagonal, or a mix. The pattern, spacing, and arrangement of the boards also contribute to the visual impact of the facade.

Scale and Proportion

Consider the size and proportions of the cladding boards in relation to the scale of the building. Larger boards can provide a more contemporary and bold appearance, while smaller boards might suit traditional or cottage-style designs.

Color and Finish

Determine whether you want the LDCwood® ThermoWood® to weather naturally or if you'll apply a protective finish. The finish can influence the color and sheen of the wood, impacting the overall look of the facade.

Jointing and Detailing

Pay attention to how the cladding boards meet at corners, edges, and intersections. Proper detailing and joinery techniques ensure a clean and cohesive appearance while preventing water infiltration.

Texture and Dimension

The texture of the LDCwood® ThermoWood® can range from smooth to rough, and the dimensional profile of the boards can vary. The texture can influence the tactile experience and visual interest of the facade.

Integration with Other Materials

Consider how the LDCwood® ThermoWood® cladding will interact with other building materials, such as stone, metal, glass, or concrete. A balanced integration can create visual contrast and highlight architectural features.

Functional Considerations

Ensure that the cladding provides effective weather protection, thermal insulation, and moisture management. Proper detailing, ventilation, and drainage are crucial for preventing moisture-related issues.

Environmental Impact

Choose sustainably sourced LDCwood® ThermoWood® and consider the life cycle of the materials used. Sustainable design practices can reduce the environmental footprint of the project.

Maintenance Requirements

Determine the level of maintenance the cladding will require over time. Natural wood may weather gracefully but might require occasional refinishing, while finishes can reduce maintenance but need periodic upkeep.

Regulations and Codes

Adhere to local building codes and regulations that govern exterior cladding. Ensure compliance with fire safety, insulation, and structural requirements.

Lighting and Shadows

Consider how lighting will interact with the cladding. The play of light and shadows on the textured surface can enhance the facade's visual appeal.

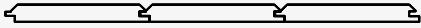





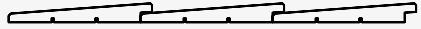






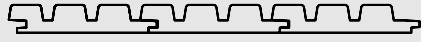


Long-Term Vision

Think about how the LDCwood® ThermoWood® cladding will age and adapt over time. Consider whether you want the facade to maintain its initial appearance or embrace a more weathered and natural look.

Consultation

Collaborate with architects, designers, and builders who have experience with LDCwood® ThermoWood® cladding. Their expertise can help you make informed decisions and achieve the desired design outcome.

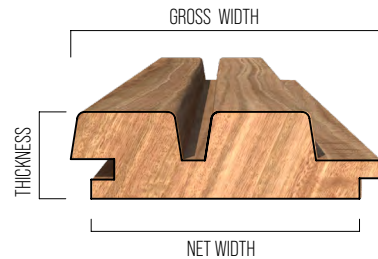
By carefully addressing these design considerations, you can create a LDCwood® ThermoWood® cladding system that not only enhances the aesthetics of the building but also contributes to its overall functionality, durability, and sustainability.

PROFILE		CLADDING JOINT	RECOMMENDED ORIENTATION		
			HORIZONTAL	VERTICAL	DIAGONAL
	Tongue & Groove (T&G)	Closed			
	Rectangular / batten	Closed - board on board			
	Bevel	Closed			
	Shiplap	Closed			
	Parallelogram	Open			
	Rib	Closed			

Summary of generic characteristics

Overview

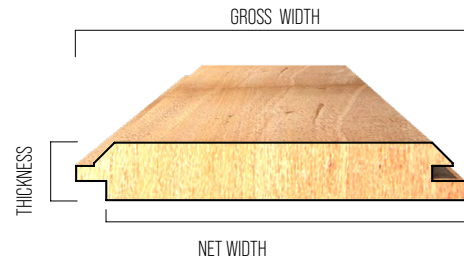
Rib profiles



BELO

PROFILE	THICKNESS (mm)	GROSS WIDTH (mm)	NET WIDTH (mm)	WOOD TYPE (durability class)
BELO	34	121	105	Ayous (I), Fraké (II)
ELSA (KITE)	20	140	132	Ayous (I), Pine (I), Spruce (II), Ash (II), Poplar (II)
FARO (BODO)	34	186,1	170	Ayous (I), Pine (I), Spruce (II)
GODO	34	83	70	Fraké (II)
KYLE	27	143,5	127,5	Pine (I), Spruce (II), Ash (II)
RIB4	21	115	107	Ayous (I)
ZAZA	21	168	155	Ayous (I)

T&G



MORA

PROFILE	THICKNESS (mm)	GROSS WIDTH (mm)	NET WIDTH (mm)	WOOD TYPE (durability class)
ALTA	18	142	131	Pine (I), Spruce (II), Ash (II), Poplar (II)
BANA	21	170	159	Ayous (I)
EDEA	21	126	115	Ayous (I), Fraké (II)
MORA	21	142	131	Ayous (I), Fraké (II), Spruce (II), Ash (II), Poplar (II)
OLLA	15	142	131	Ayous (I)
PARA	18	68	0	Ayous (I), Pine (I), Spruce (II)

Rectangular



INTERIOR 2

PROFILE	THICKNESS (mm)	GROSS WIDTH (mm)	NET WIDTH (mm)	WOOD TYPE (durability class)
INTERIOR 1	20	45		Ayous (I), Fraké (II), Pine (I), Spruce (II), Ash (II), Poplar (II)
INTERIOR 2	20	45		Ayous (I), Fraké (II), Pine (I), Spruce (II), Ash (II), Poplar (II)
INTERIOR 3	20	90		Ayous (I), Fraké (II), Pine (I), Spruce (II), Ash (II), Poplar (II)
INTERIOR 4	20	90		Ayous (I), Fraké (II), Pine (I), Spruce (II), Ash (II), Poplar (II)

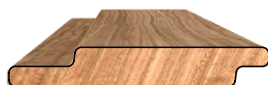
Bevel



JAMY

PROFILE	THICKNESS (mm)	GROSS WIDTH (mm)	NET WIDTH (mm)	WOOD TYPE (durability class)
JAMY	11,5/25	190	175	Pine (I), Spruce (II)
TABY	9,5/20	140	130	Pine (I), Spruce (II)

Shiplap



NOLA

PROFILE	THICKNESS (mm)	GROSS WIDTH (mm)	NET WIDTH (mm)	WOOD TYPE (durability class)
NOLA	18	120	105	Ayous (I)

Parallelogram



PARA

PROFILE	THICKNESS (mm)	GROSS WIDTH (mm)	NET WIDTH (mm)	WOOD TYPE (durability class)
PARA	18	68		Ayous (I), Pine (I), Spruce (II)

SUPPORT BATTENS

Functions of the air cavity

The air cavity behind LDCwood® ThermoWood® cladding serves several important functions in a building's envelope system. This space, often referred to as a ventilated or drained cavity, is a deliberate design feature that provides various benefits for the cladding, the building structure, and its overall performance. Here are the primary functions of the air cavity behind LDCwood® ThermoWood® cladding:

Moisture Management

One of the key functions of the air cavity is to manage moisture that may infiltrate behind the cladding. Rainwater, condensation, and moisture that may have penetrated the cladding are channeled downward and outward, away from the building envelope. This helps prevent moisture accumulation that could lead to decay, rot, or mold growth in the LDCwood® ThermoWood® and underlying structure.

Ventilation

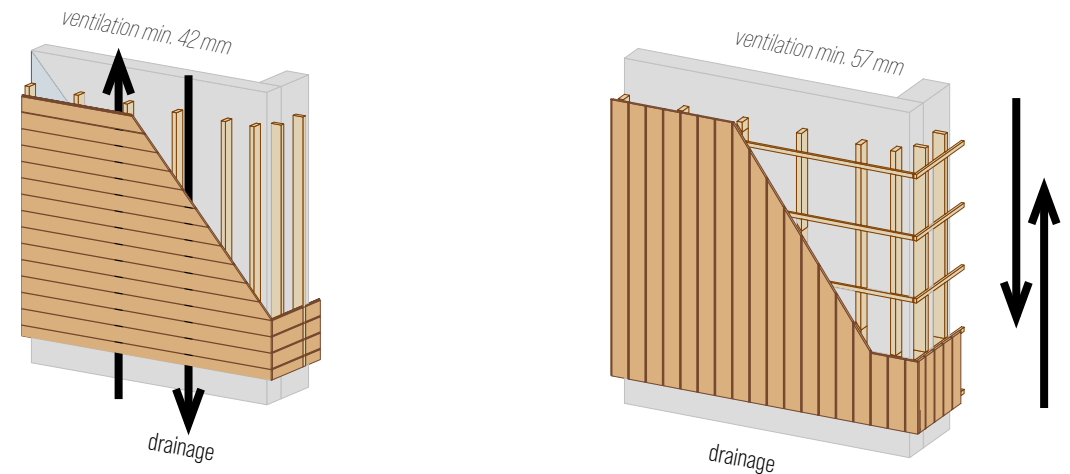
The air cavity allows for natural ventilation between the cladding and the substrate. This promotes air circulation, which aids in the drying process. Proper ventilation helps to evaporate any moisture that does enter the cavity and prevents it from becoming trapped, thereby maintaining a drier and more stable environment.

Thermal Performance

The air cavity can act as an additional layer of insulation, enhancing the overall thermal performance of the building. The air within the cavity creates a buffer zone that helps reduce heat transfer through conduction, convection, and radiation. This can contribute to improved energy efficiency and comfort inside the building.

Temperature Regulation

The ventilation provided by the air cavity can help regulate the temperature of the cladding itself. In cold conditions, air movement within the cavity can reduce the risk of freezing and subsequent expansion that could damage the cladding. In hot conditions, the cavity can help dissipate excess heat, reducing the potential for overheating.



Reduction of UV Exposure

Direct sunlight and UV radiation can impact the longevity and appearance of LDCwood® ThermoWood® cladding. The air cavity can provide some shading and reduce the intensity of UV exposure on the cladding's surface, helping to slow down the natural weathering process.

Preservation of Cladding Finish

For cladding with applied finishes, such as paints or stains, the air cavity can help protect and extend the life of the finish by reducing direct contact with moisture and environmental elements. This can lead to less frequent maintenance and refinishing.

Pressure Equalization

The air cavity helps equalize air pressure between the exterior and interior of the building. This is particularly important in windy conditions, as it prevents the wind from exerting excessive pressure on the cladding, which could lead to damage or stress on the fasteners.

Sound Insulation

The air cavity can contribute to sound insulation by creating a barrier that dampens sound transmission from the exterior. This is especially beneficial for buildings located in noisy environments.

Overall, the air cavity behind LDCwood® ThermoWood® cladding plays a crucial role in maintaining the integrity, performance, and longevity of both the cladding system and the building envelope as a whole. Proper design and installation of the cavity, including ventilation and drainage considerations, are essential to ensure its effectiveness in managing moisture and maintaining a healthy building environment.

Wooden support battens

Fixing wooden support battens properly is essential for ensuring the stability and longevity of cladding systems. Support battens are typically horizontal or vertical wooden strips attached to the building's substrate, providing a secure base for attaching the cladding material. Here's how to correctly fix wooden support battens for cladding:

Steps

1. Prepare the Substrate

Ensure the substrate (the surface to which you'll be attaching the battens) is clean, flat, and free from debris or obstacles. Apply a weather-resistant barrier or moisture barrier to the substrate before attaching the battens.

2. Measure and Mark

Use a measuring tape and a pencil or chalk line to mark the positions where the battens will be attached. The spacing between battens will depend on the cladding material and design considerations. Measure and mark both the horizontal and vertical lines, depending on the orientation of the battens.

3. Leveling

Use a plumb rule or laser to ensure that the lines you've marked are level or plumb, depending on the orientation of the battens. This step is crucial to ensure that the cladding is applied evenly and looks visually appealing.

4. Attach the Battens

Depending on the substrate and cladding material, you can attach the battens using screws or nails. Make sure the fasteners are appropriate for the substrate and are resistant to corrosion, especially if the cladding is exposed to the elements.

5. Screws

Pre-drill holes slightly smaller than the diameter of the stainless steel screws through the batten and into the substrate. This prevents the wood from splitting. Attach the battens using stainless steel screws, aligning them with the marked lines.

Tools and Materials you may need

- Wooden battens
- Plumb rule
- Measuring tape
- Pencil or chalk line
- Drill
- Stainless steel screws or nails
- Wall plugs (if needed)
- Cladding material

6. Nails

Use stainless steel nails with a length that is appropriate for securing the battens to the substrate. Hammer the nails into the battens, making sure they are driven straight and secure.

7. Spacing and Alignment

As you attach the battens, ensure they are evenly spaced and aligned with the marked lines. Check the level or plumb using a plumb rule to maintain a uniform appearance.

8. Wall Plugs (if needed)

If you're attaching battens to masonry or concrete walls, you might need to use wall plugs to provide additional stability and support. Pre-drill holes in the substrate, insert wall plugs, and then attach the battens using screws.

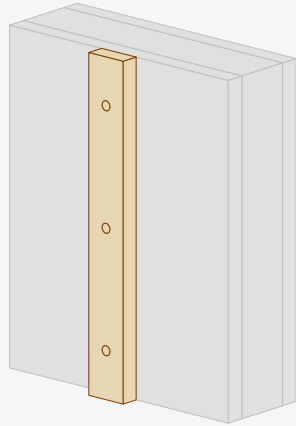
9. Cladding Installation

Once the battens are securely attached, you can proceed to install the cladding material according to the manufacturer's instructions. The battens will serve as the anchor points for the cladding.

Remember that the specific method of fixing battens can vary based on factors such as the type of substrate, cladding material, and local building codes. It's a good idea to consult with professionals

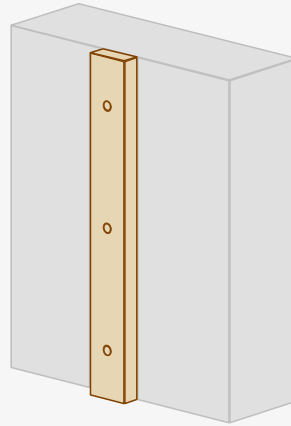
Type of support wall

Timber structure - Timber frame or CLT

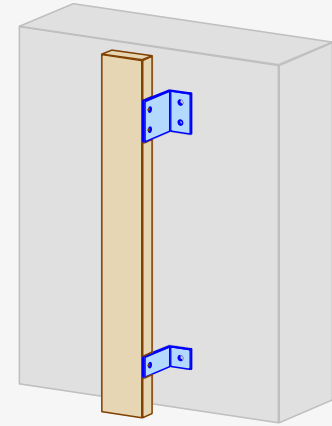


Direct fixing to a timber support wall using self-drilling screws suitable for timber made of AISI 304 (A2) stainless steel.

Concrete structure - Masonry



Direct fixing to a timber support wall using plastic anchors and screws suitable for use in concrete and masonry walls.

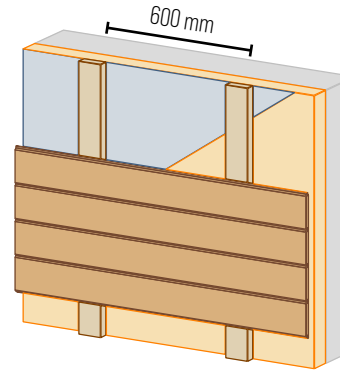


Fixing through a system of metal fastening brackets that allow adjusting the position of the battens regardless of the support wall flatness.

Facade with wooden support battens

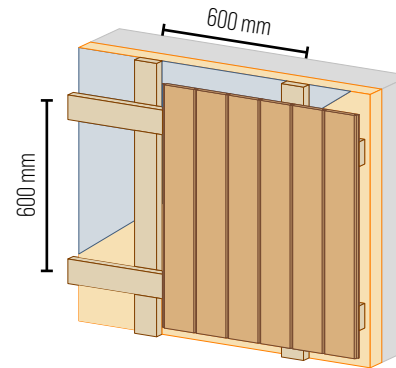
Horizontal orientation:

Horizontal cladding profiles are fixed to vertical battens with a minimum size of 42 x 42 mm spaced 600 mm centres.



Vertical orientation:

In vertical orientation cladding, a double order of battens must be used to provide adequate ventilation and drainage to the cavity. Vertical cladding profiles are installed onto horizontal battens with a minimum size of 30 x 50 mm. These horizontal battens are separated from the support wall to guarantee water evacuation using vertical battens with a minimum size of 30 x 50 mm. It is recommended to space vertical and horizontal battens at 600 mm centres. We recommend installing the horizontal timber battens at an angle of 15 degrees towards the interior of the cavity to ensure water drainage.

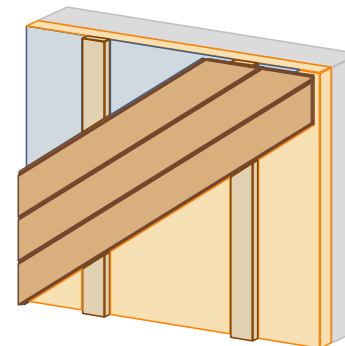


Diagonal orientation:

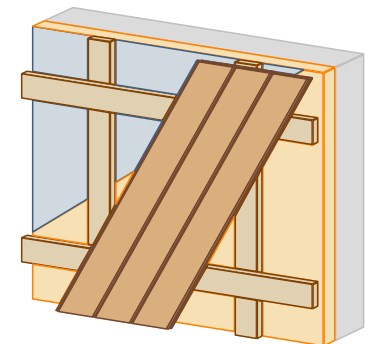
If the cladding profiles form an inclination angle greater than 45 degrees with the horizontal, the installation guidelines are the same as those used in the vertical orientation and a double order of battens will be used. Facade profiles must be fixed to the horizontal battens with a minimum size of 30 x 50 mm., which must be attached to the vertical battens with a minimum size of 30 x 50 mm.

If the inclination angle of the profiles is less than 45 degrees with the horizontal, the installation guidelines are the same as those used in horizontal orientation. In this case, a secondary order of battens is not necessary. Facade profiles must be fixed to the vertical battens with a minimum size of 42 x 42 mm.

For cladding in diagonal orientation, it is recommended to space battens at 400 mm centres.



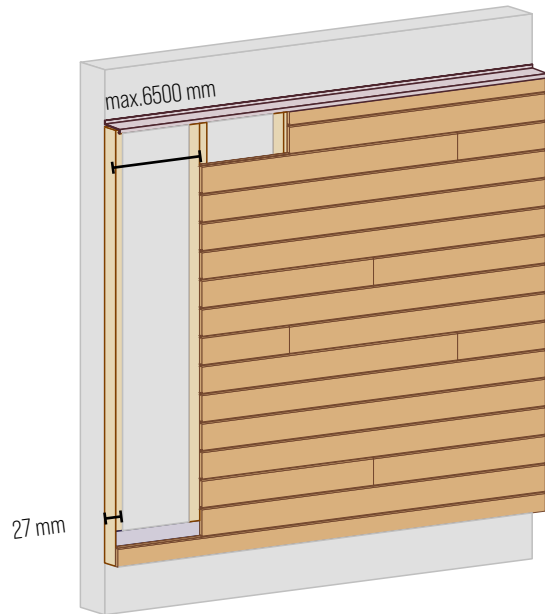
Inclination angle of the facade < 45 degrees



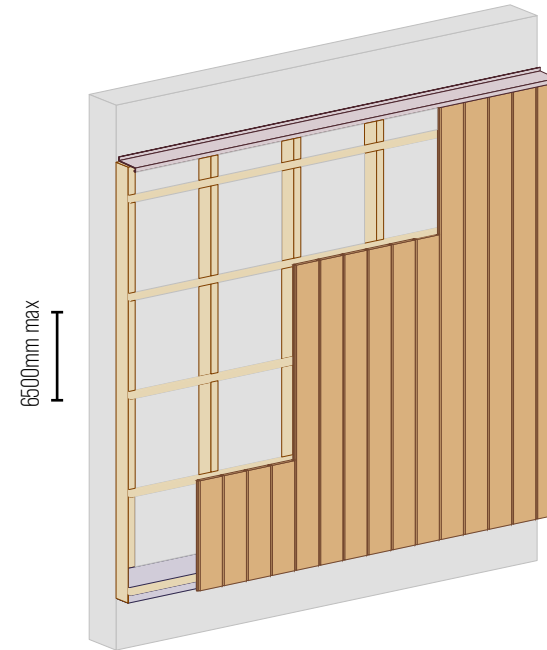
Inclination angle of the facade > 45 degrees

External cladding installation recommended by LDCwood

Horizontal installation: single battening



Vertical installation: mandatory double battening



FASTENERS

Because of LDCwood® ThermoWood® products' pH value (acid), any fasteners must be made of stainless steel or stronger material in order to prevent corrosion. This applies to products used indoors and outdoors.

Other fasteners react with LDCwood® ThermoWood®, causing staining around the fastener. If thermally modified timber is used in combination with other materials, possible reactions between the materials must be determined.

Table 2 presents the minimum requirements for the fasteners' protection against corrosion. The most common class for stainless steel is **Class A2 (AISI 304, EN 1.4301)**.

APPLICATION	CLASS	QUALITY	TYPE
Ceiling and wall cladding (dry space)	A2	AISI 304 [EN 1.4301]	Stainless steel
Floor (dry space)	A2	AISI 304 [EN 1.4301]	Stainless steel
Ceiling and wall cladding (bathroom)	A2	AISI 304 [EN 1.4301]	Stainless steel
Decking boards	A2	AISI 304 [EN 1.4301]	Stainless steel
Exterior cladding	A2	AISI 304 [EN 1.4301]	Stainless steel

Table: Minimum requirements for fasteners' corrosion protection level in use with LDCwood® ThermoWood® products.

Nails & screws



LDCwood® ThermoWood® products can be fixed in a traditional manner with nails and screws like any other timber products. Various hidden fastening systems are also available. The nails or screws used must be sufficiently long to extend through the mounting batten or board. The length of nails or screws must be selected so that they do not pierce any air or moisture barrier or similar structure. When nails or screws are used, they must be fixed so that their head is on the same level as the timber surface [see page 21].

If a nail gun is used to fix exterior cladding or decking boards, the machine must have a depth control mechanism to ensure that the nail head will be on the level with the timber surface. While this also affects visual quality, it is important in preventing water from entering the timber structure via the fastener. With nails and screws, it is important to ensure that they do not cause a crack in the timber (distance from the end). Pre-drilled holes can also be used for the fasteners.

End joints

End joints in LDCwood® ThermoWood® cladding refer to the points where two pieces of cladding meet at the ends. Properly managing these end joints is crucial for the overall aesthetics and durability of the cladding installation. Here's how to effectively handle end joints in LDCwood® ThermoWood® cladding:

1. Minimize Visible End Joints

Whenever possible, try to design the cladding layout in a way that minimizes the number of visible end joints. Longer cladding boards can help reduce the frequency of these joints, enhancing the visual continuity of the facade.

2. Spacing

Maintain an appropriate spacing between end joints to avoid clustering them closely together. Spacing them out evenly across the facade can create a more balanced and visually appealing appearance.

3. Overlap

If the cladding boards have a tongue-and-groove or shiplap profile, you can utilize the overlapping feature to conceal the end joints. The overlapping design creates a continuous appearance while providing some protection against moisture infiltration.

4. Staggered End Joints

Consider staggering the end joints in a way that they don't align vertically across multiple rows. This prevents a distinct vertical line of end joints, contributing to a more random and natural look.

5. Butted Joints with Blocking

For cladding with flat profiles, you can create a butt joint where the ends of two adjacent boards meet directly. To ensure stability and proper fastening, install a blocking or backing piece behind the joint before attaching the cladding boards. This strengthens the joint and provides additional support.

6. Treatment of End Grain

The end grain of wood is more susceptible to moisture absorption, which can lead to decay or splitting. To mitigate this, consider applying a wood preservative or end-grain sealer to the exposed ends of the cladding boards before installation.

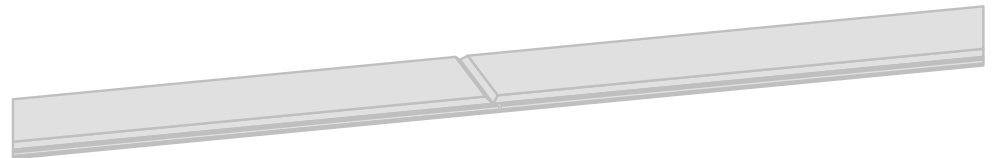
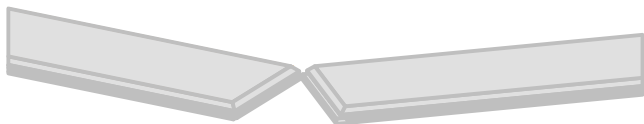
7. Material Selection

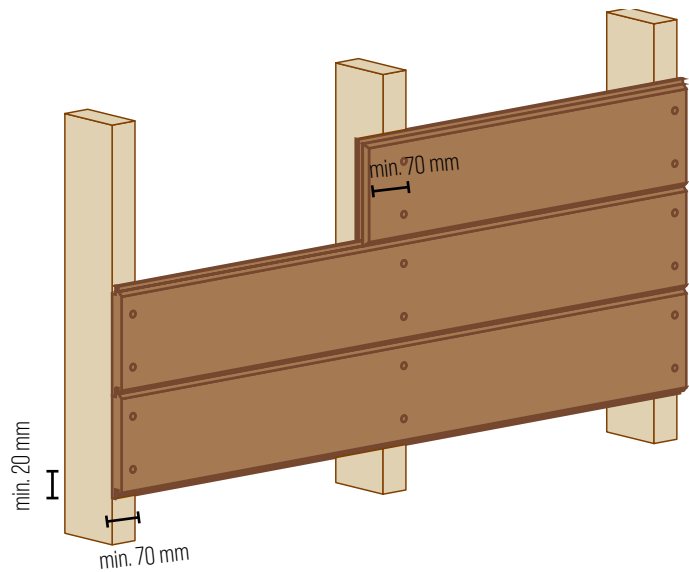
Choose cladding materials that offer options for managing end joints effectively. Certain profiles and materials may offer better solutions for concealing or managing these joints.

8. Professional Installation

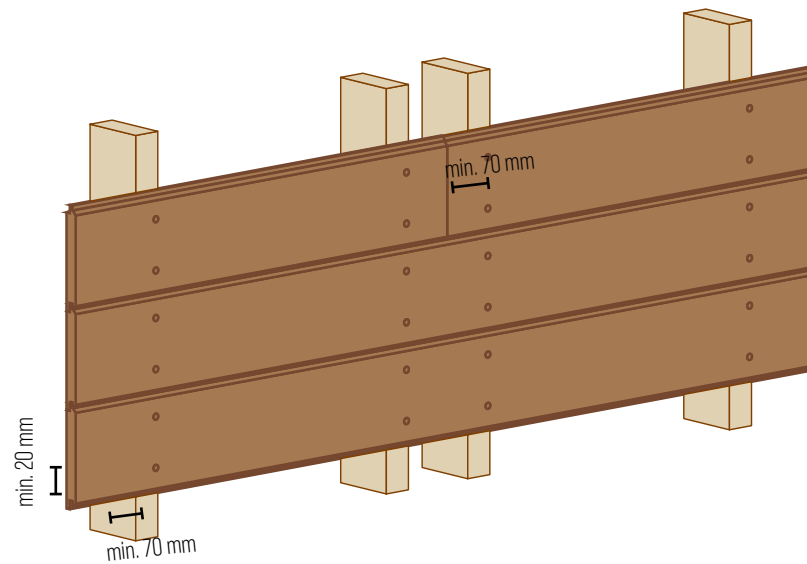
If you're unsure about the best way to handle end joints, consider consulting our professionals at protectedbynature@ldcwood.com with professionals or experienced contractors who specialize in LDCwood® ThermoWood® cladding. Their expertise can help you achieve the desired look while maintaining structural integrity.

Managing end joints in LDCwood® ThermoWood® cladding requires a combination of thoughtful design, careful planning, and skilled installation techniques. By applying these strategies, you can achieve a visually appealing and durable cladding installation that enhances the overall aesthetics of the building's facade.



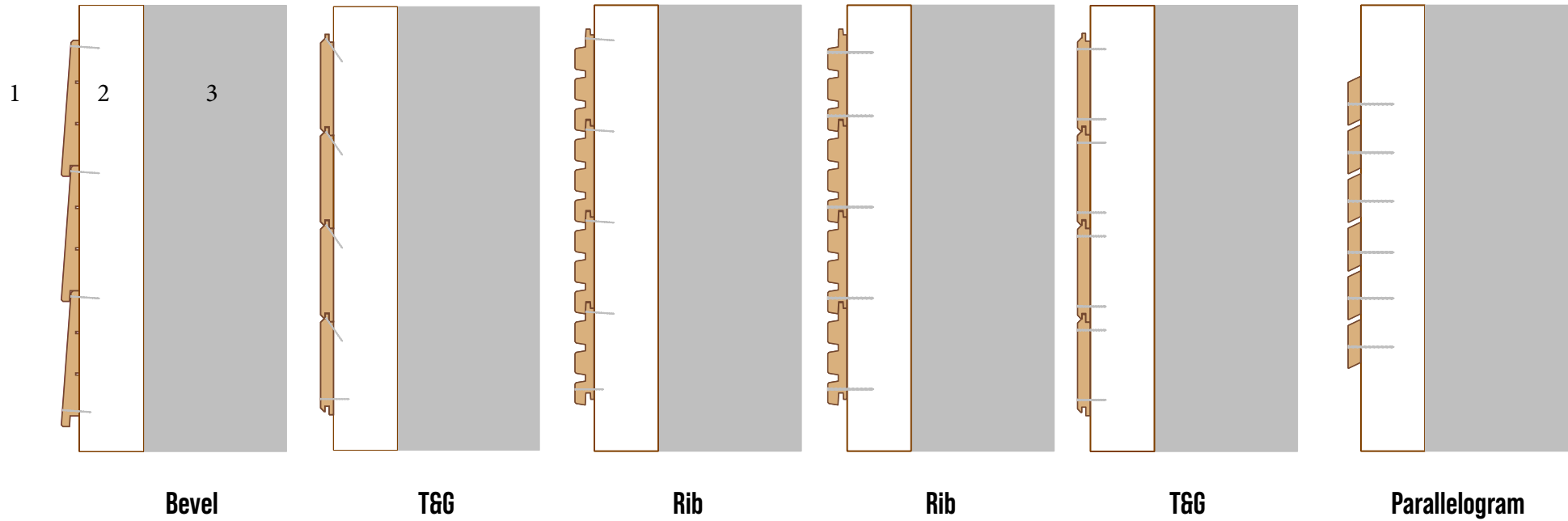


The recommended distances to edges and ends without pre-drilling with LDCwood® ThermoWood® products.



The recommended distances to edges and ends without pre-drilling with LDCwood® ThermoWood® products (without tongue and groove joint).

Here are some basic installation options:



1. Wood profile
2. Fixing system
3. Support wall

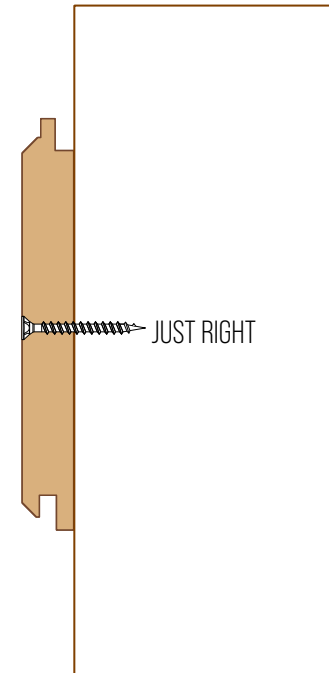
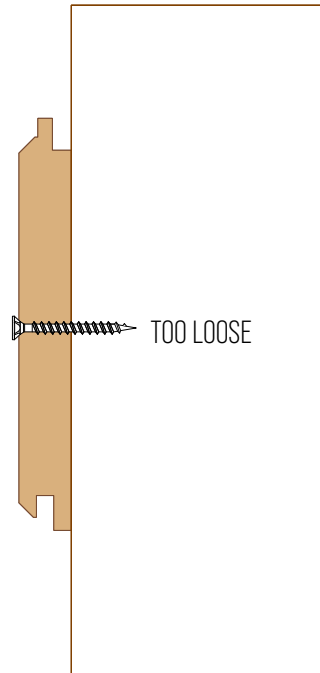
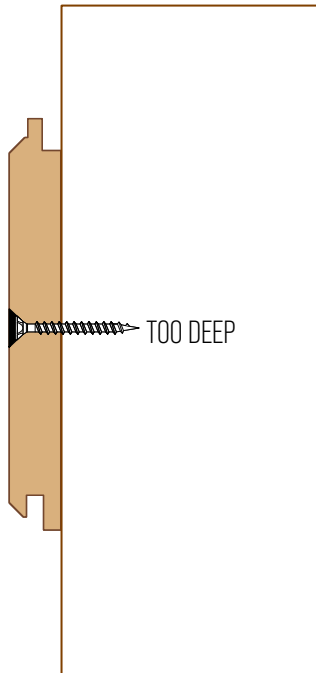


Project: Private House. Facade cladding in LDCwood® ThermoWood® ayous BELO profile. Planned by Lemahieu Group®.

GENERAL GUIDELINES

Fasten nails or screws to the correct depth

Screw head must not penetrate too deep into the cladding and must be flush with the surface of the tongue to prevent excessive moisture absorption.

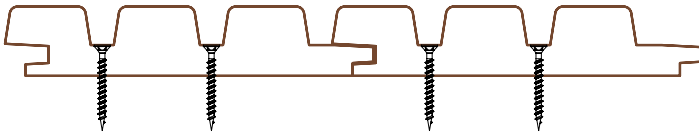


INSTALLATION GUIDELINES FOR RIB PROFILES

SCREWS - FACE

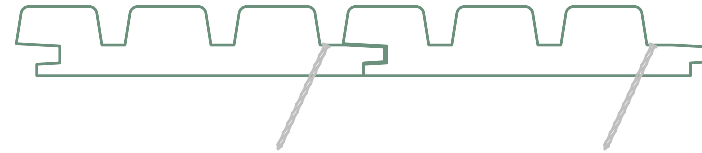
Stainless steel screw: lenght 40 mm

Screw head diameter max. 7 mm



NAILS - HIDDEN

Stainless steel screw: lenght 40 mm

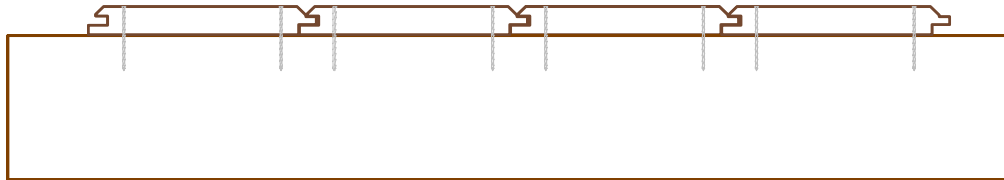


INSTALLATION GUIDELINES FOR TONGUE & GROOVE PATTERNS (T&G)

SCREWS

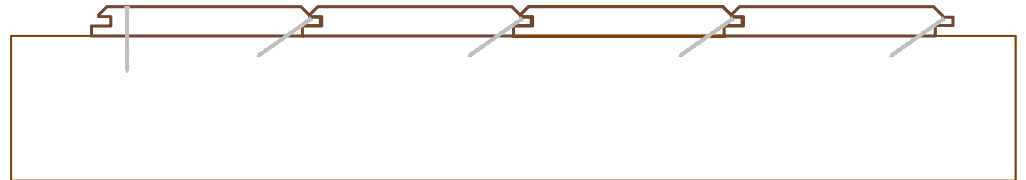
Stainless steel screw: length 40 mm

Screw head diameter max. 7 mm



NAILS

Stainless steel nail: length 40 mm



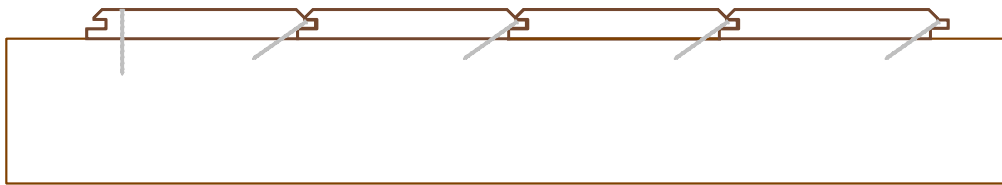
INSTALLATION GUIDELINES FOR HIDDEN NAILING

T&G installation

Recommended joist spacing 600 mm

Fasten with the one nail above the "V-groove"

Use the stainless steel nails



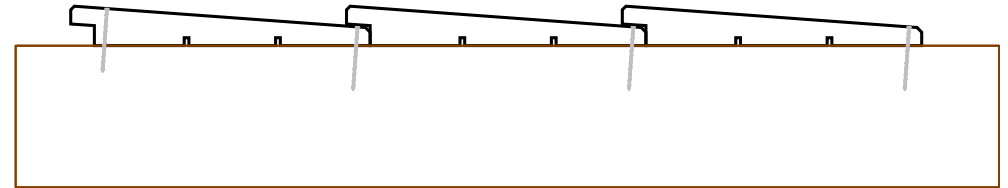
You can use starting clip on the first round

Bevel edge installation

Recommended joist spacing 600 mm

Fasten with the one nail above the "V-groove"

Use the stainless steel nails



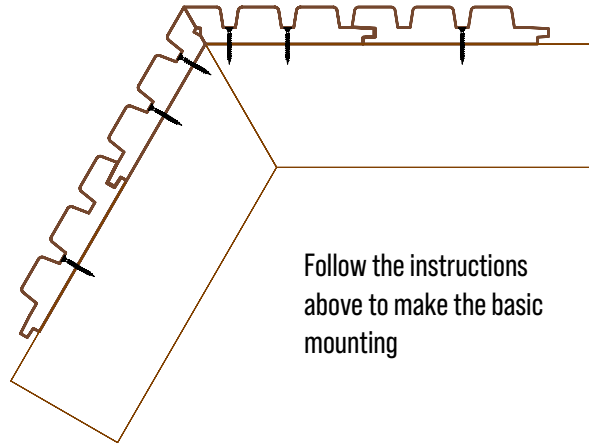
You can use starting clip on the first round

INSTALLATION GUIDELINES FOR CORNER INSTALLATION

Miter 60 degree corner

Split to a 60 degree angle

Screw the corner from opposite sides at different heights



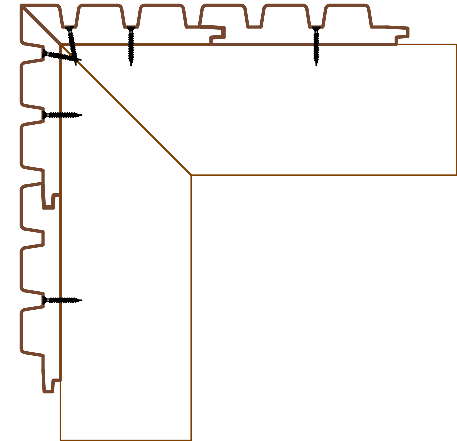
Follow the instructions above to make the basic mounting

Miter 90 degree corner

Split to a 45 degree angle

Screw the corner from opposite sides at different heights

Follow the instructions above to make the basic mounting

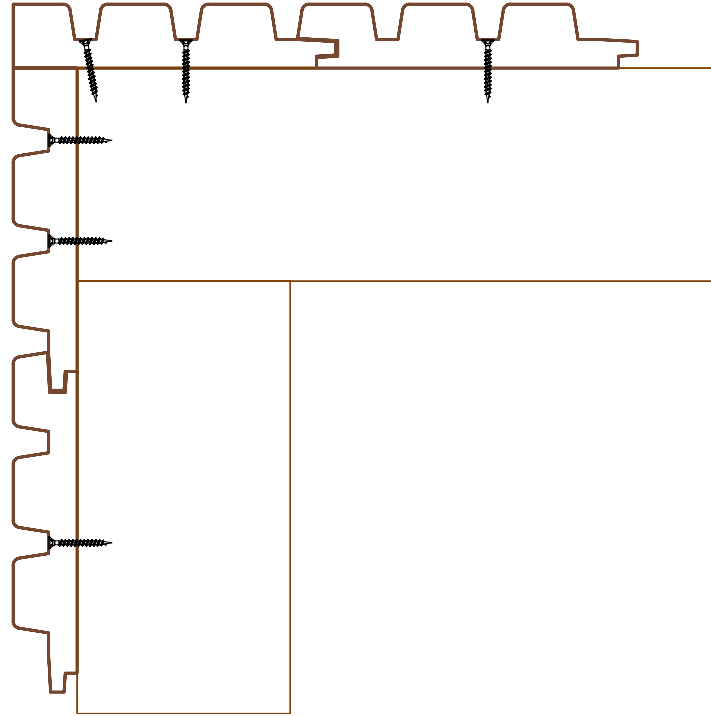


Basic 90 degree corner

Split to a 90 degree angle

Screw the corner from opposite sides at different heights

Follow the instructions above to make the basic mounting



MATERIALS HANDLING & STORAGE

How to storage timber on the construction site

LDCwood® ThermoWood® products are available from timber retailers and hardware stores that stock other timber products. The stocked products vary depending on the retailer, and special products must be ordered separately.

Whenever possible, LDCwood® ThermoWood® should be stored inside, out of the weather and sun. When this is not possible, LDCwood® ThermoWood® needs to be elevated off the ground, stacked uniformly and covered with a waterproof cover. Leave the ends of the cover open so moisture is not trapped inside, making certain the stored wood is not subjected to the elements or sun as the UV rays will fade the material.

Under no circumstances should LDCwood® ThermoWood®, even in original packaging, be subjected to rain or any moisture as it cannot dry properly when stacked and/or packaged.

The following factors must be taken into account in the storage of LDCwood® ThermoWood®:

- A dry ventilated storage space must be used (a dry outdoor space can be used for products for outdoor applications)
- Products to be used for indoor applications must be stored in a heated indoor space
- Products must be protected against dirt and UV radiation
- They must be placed in a horizontal position on an even base (off the ground)
- A sufficient number of battens must be used as the base
- Product bundles must not be loosened before use
- Interior cladding products are used directly from the package
- When lifting long products, bear in mind their reduced bending strength
- Products with a tongue-and-groove finish must be handled with care to avoid damage (particularly with long products)



An even surface and a sufficient number of base battens prevent the products from warping.

MAINTENANCE

LDCwood® ThermoWood® has a prolonged life and it doesn't necessarily need a surface treatment applied to it. Some people choose to add a finish or paint to their timber to enrich its colour, but if it's left untreated, the wood will naturally change to a silvery grey (similar to that of cedar or larch). This process will begin immediately and, depending on the amount of UV exposure, may take several months to a year. This does not make the wood less resistant to decay.

Unlike pressure impregnated wood, LDCwood® ThermoWood® can be recycled as untreated wood when it is no longer required.



Surface treatment

LDCwood® ThermoWood® as a basis for surface treatment

LDCwood® ThermoWood® makes an excellent basis for surface treatment agents because it is resin-free and it only swells and shrinks to a small degree when exposed to moisture.

It should be noted that all surface treatment agents do not sufficiently adhere to the surface because of the acidity and low water absorbance capacity of ThermoWood®.

Fire Protection Treatment

One of the challenges of timber facades is to meet the requirements of the necessary reaction to fire classification.

Optionally, we can give timber products a fire retardant treatment with Burnblock® in our autoclave under pressure. Burnblock® consists of 100% natural ingredients, is 100% biodegradable, and pH-neutral. Moreover, the product also has GOLD-level Cradle-to-Cradle Certification™.

At our production site in Ostend, both our autoclave and the drying kilns guarantee a qualitative treatment in accordance with current standards.

The most commonly used surface treatment agents

LDCwood® ThermoWood® can be treated with agents similar to those used with standard timber (including paint, lacquer, oil and wax).

Industrial surface treatment is recommended for LDCwood® ThermoWood® as well as for other timber products. This ensures that the surface treatment is carried out in controlled conditions with suitable treatment agents, guaranteeing the high quality and durability of the surface treatment.

Consult our professionals at protectedbynature@ldcwood.com for more detailed information on suitable coatings.



LDCWOOD® THERMOWOOD®

LDCwood® provides a solution for every need with a wide range of wood types and patterns. LDCwood® ThermoWood® can be treated with fire retardant Burnblock® under vacuum pressure, pre-aged, oiled, brushed and varnished.

Our membership in the International ThermoWood® Association guarantees the highest quality of thermally modified timber. With wood from sustainable managed forests there are no boundaries to choose LDCwood® ThermoWood®.



Low maintenance



Wood from sustainable managed forests



Long lifespan up to 20 years



Certified in-house fire retardant treatment

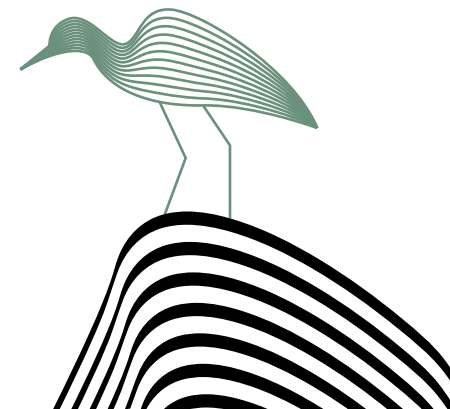


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THERMOWOOD®

+32 (0)59 50 55 14

protectedbynature@ldcwood.com

Vergunningenstraat 7

8400 Ostend, BELGIUM

www.ldcwood.com



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www.ldcwood.com