

INSTALLATION GUIDE LUSSO SIDING SYSTEM

I. Introduction

SECTION 1
Material Components
SECTION 2
Basics
SECTION 3
Scope of Delivery

II. Installation Procedure

SECTION 1

Vertical Lusso Profile Application Expose Edges

SECTION 2

Vertical Lusso Profile Application Outside and Inside Corner

SECTION 3

Multi-board Vertical Lusso Profile High Installation using Aluminum Quik-Trim H-Mold

SECTION 4
Finishing

III. General Advice

SECTION 1 Expansion Joint SECTION 2 General Notes

IV. Safety Warnings







I. INTRODUCTION

Discover Novano: The Ultimate Novano Material

Novano is an exceptionally durable material option that mimics the appearance of timber. It offers impressive resistance to damage from sunlight, rain, frost, and even saltwater. Unlike traditional wood, it demands minimal upkeep and is highly resistant to pests, mold, and cracking.

- Natural Appearance: Novano closely resembles the look and feel of genuine wood, featuring a smooth surface finish.
- Eco-Friendly: It meets many future environmental sustainability standards, incorporating recycled and fully recyclable materials.
- Architectural Appeal: Novano is valued for its aesthetic qualities rather than for structural support.

SECTION 1 - Material Components

A blend of these three fundamental raw materials forms the essential components of Novano. This groundbreaking material opens up fresh creative possibilities for designers and architects, thanks to its striking and distinctive appearance.

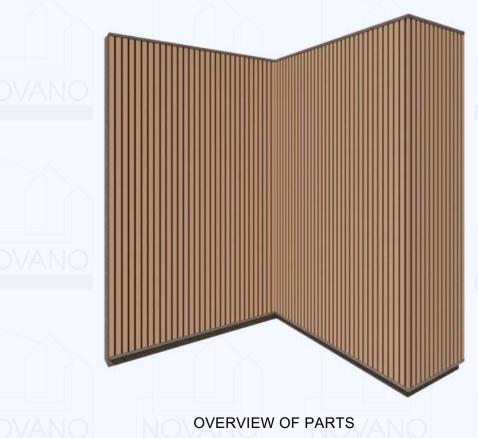




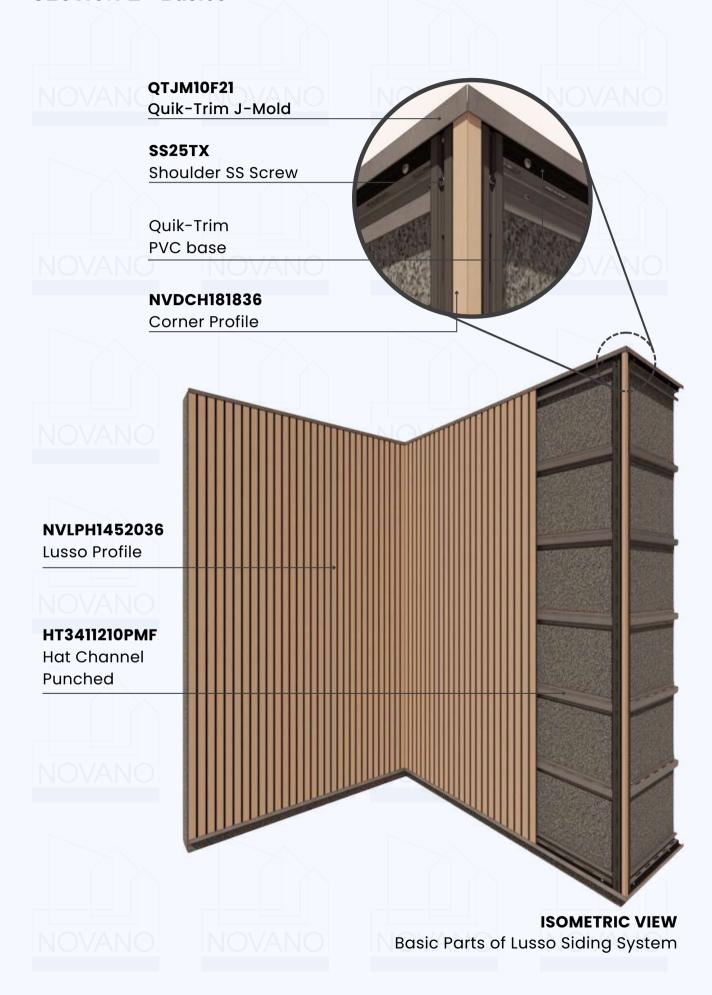




Approx. 60% RICE HUSK + Approx. 22% COMMON SALT + Approx. 18% MINERAL OIL



SECTION 2 - Basics



SECTION 3 - Scope of Delivery

PRODUCT NAME AND SPECIFICATION	SOMETRIC VIEW	SECTION VIEW
NVLPH1452036 145mm x 20mm x 3650mm 6" Lusso Profile		900-
NVDCH181836 20mm x 20mm x 3650mm Lusso Corner Profile		NOVANO
HT3411210PMF 20mm x 38mm x 3650mm Siding Hat Channel Punched Mill Finish	NOVANO	NOVANO
QTWJM10F21 25mm x 40mm x 3050mm Quik Trim Window J-Mold with PVC Base		
QTOC10F21 25mm x 25mm x 3050mm Quik Trim Outside Corner with PVC Base	NOVANO	NOVANO
QTIC10F21 40mm x 40mm x 3050mm Quik Trim Inside Corner with PVC Base		NOVANO
	NVLPH1452036 145mm x 20mm x 3650mm 6" Lusso Profile NVDCH181836 20mm x 20mm x 3650mm Lusso Corner Profile HT3411210PMF 20mm x 38mm x 3650mm Siding Hat Channel Punched Mill Finish QTWJM10F21 25mm x 40mm x 3050mm Quik Trim Window J-Mold with PVC Base QTOC10F21 25mm x 25mm x 3050mm Quik Trim Outside Corner with PVC Base QTIC10F21 40mm x 40mm x 3050mm Quik Trim Inside Corner	NVLPH1452036 145mm x 20mm x 3650mm 6" Lusso Profile NVDCH181836 20mm x 20mm x 3650mm Lusso Corner Profile HT3411210PMF 20mm x 38mm x 3650mm Siding Hat Channel Punched Mill Finish QTWJM10F21 25mm x 40mm x 3050mm Quik Trim Window J-Mold with PVC Base QTOC10F21 25mm x 25mm x 3050mm Quik Trim Outside Corner with PVC Base QTIC10F21 40mm x 40mm x 3050mm Quik Trim Inside Corner

SECTION 3 - Scope of Delivery

NO.	PRODUCT NAME AND SPECIFICATION	ISOMETRIC VIEW	SECTION VIEW
7	QTHM10F21 40mm x 3050mm Quik Trim H-Mold with PVC Base		
8	QTJM10F21 25mm x 20mm x 3050mm Quik Trim J-Mold with PVC Base	IO NOVANO	NOVANO L
9	JS10MF 22mm x 30mm x 3650mm Starter	IO VANC	N <u>OV</u> ANO
10	SS25TX 25mm Stainless Steel Shoulder Screws	JO NOVANO	

Table 1.1 Scope of Delivery

NOTE:

To view a complete list of products, please refer to our Novano brochure or visit our website <u>www.novanoeu.com</u>

IMPORTANT: Major Bullet Points You Must Follow for a Successful Novano Lusso Installation

- Screw Placement
- Room for Expansion and Contraction
- Hard Fastening of each Plank
- Top to Bottom Ventilation

Note:

Proper planning of the siding layout is essential for the ease of installation of siding boards and siding components.

Thoroughly read the following siding assembly instructions and obtain all necessary building permits prior to starting your installation.

Decide on finishing and trimming options prior to starting the project to ensure siding projections and finishing details are uniform for all sides of the siding.

Installation is the sole responsibility of the installer. Novano Company assumes no responsibility whatsoever with respect to the installation. The information contained herein is provided for guidance purposes only and should not be relied upon as any absolute representation by Novano.

Packed finished material must be kept dry.



When packed, finished Novano products are exposed to moisture, and it can develop mold/mildew on the board surfaces if left packed/bundled..

If packed material is exposed to moisture, open it immediately and spread the material to allow surfaces to dry.

This condition only applies to packed material. Finished Novano products installed in exterior applications will not exhibit this issue.

Safety Tips:

- 1. Always check for power, gas, and water lines before installing.
- 2. Always wear safety glasses when operating power equipment.

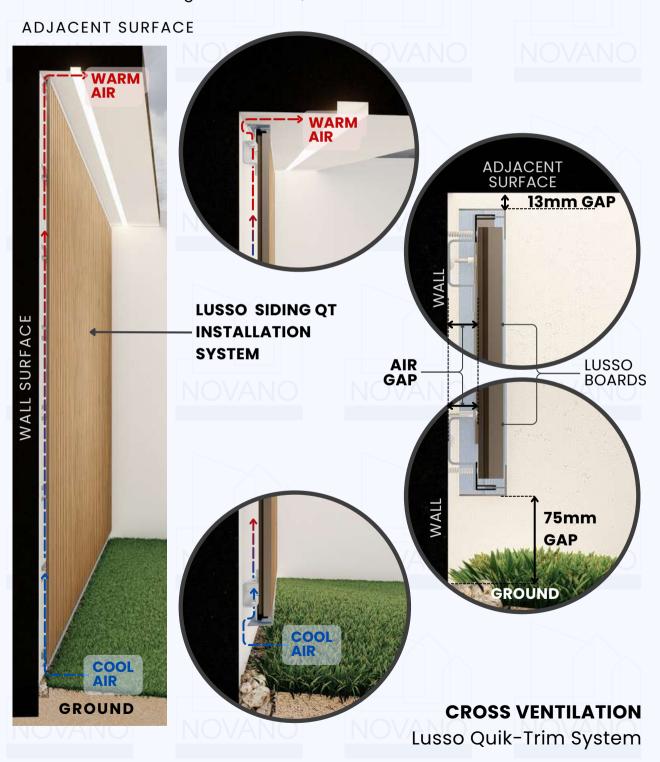
Assembly Tips:

- 1.Battens should be flat and level with each other. The profile will follow the contour of the wall.
- 2. The Novano siding system is not a rainscreen or waterproof system. Novano siding board is a watershed system.
- 3. Proper wall preparation according to local building codes and the wall covering manufacturer's recommendations should be adhered to. This includes but is not limited to flashing all openings.
- 4. All holes should be predrilled and installation holes should be slotted.
- 5.Only use construction fastening material and hardware suitable for outdoor use (e.g. stainless steel screws). Recommended is the use of SS25TX shoulder screw.
- 6. Always consider the linear expansion of Novano, which is dependent on the temperature but not the air humidity. See Table 1.4 "Novano Expansion" for more information.
- 7.Cut-off pieces and/or abrasive dust must be disposed of separately. Please comply with the regulations of your competent waste management. You may under no circumstances burn Novano material.
- 8. Cutting to length should be carried out at a consistent material temperature. Therefore, the material should be stored in the shade or in areas where it is not exposed to direct sunlight. The material can warm up considerably in the sun, leading to an increased change in length. In the case of more distinct fluctuations in material temperature, cutting to length may have to be adapted accordingly.
- 9. Please store Novano products flat on a level surface.



MANDATORY VENTILATION

Cross ventilation (also called Wind Effect Ventilation) is a natural method of cooling. The system relies on wind to force cool exterior air into the building through an inlet (like a wall louver, a gable, or an open window) while outlet forces warm interior air outside (through a roof vent or higher window opening). In Novano Lusso Siding Installation, the 75mm Gap at the bottom part of the Lusso Siding System acts as the cool exterior air INLET while the 13mm Gap on top acts as the warm interior air OUTLET. The air gap between wall surface and lusso siding boards resultant from the battens sub frames height allows passage air flow for cross ventilation through the LUSSO QUIK TRIM INSTALLATION SYSTEM.



Code Compliant Batten Spacing

Part Number	Part Description	Batten Span (mm)	Minimum Steel Gage Size
NVLPH1452036	Lusso Siding Profile 145mmx 20mm x 3650mm	400	18

Table 1.2 "Batten Spacing Requirements"

Recommendation for Batten Spacing

If the siding profile is being installed in a hot southern location and will be exposed to direct sunlight for the majority of each day and/or the board will be stained a dark color, the batten spacing is suggested to be reduced to 200mm or 300mm center-to-center for all siding profiles.

Expansion / Contraction of Siding Profile

Novano Expansion – Contraction Guide					
Profile Length	3650mm				
Expansion / Contraction amount (approx 0.3% over 90°F variation in temperature)	12mm				

<u>Table 1.3 "Expansion – Contraction:"</u>
Average expected expansion–contraction (this can vary based on the geographical region).

Always consider the linear expansion of Novano during the installation of siding profile products. If temperatures fluctuate during the installation, the gaps placed between the ends of the boards and a corner, window, or door must change with the temperature. Use the guide above to gap boards during installation.

Novano	Lusso Pr	ofile Board	d Gap Guid	de	
NOVANO NO	Trim	Trim Gap of Lusso Profile Board			OVANO
Temperature at Installation	Below 30° F	60°F	90°F	120°F	Channel Gap
Amount for Lusso Siding Profile Length of 3560mm.	12mm	8mm	5mm	0	6mm

Table 1.4 "Novano Expansion"

Ensure a steady material temperature when cutting the boards to size, i.e. the cutting has to be done under constant conditions, e.g. inside or in shade.

Expansion – Contraction Tips:

1)Control Piece

at the start of the day cut a length of board that is desired to be installed and keep this board in the same area as the cutting and storage of the remaining boards. This board will be a "Control Piece" to reference when cutting other boards to be installed. Throughout the day the "Control Piece" can be referenced and the saw cuts adjusted accordingly as the boards expand and/or contract. The heat from the sun will cause Novano boards to expand so if the material is stored in the shade keep the "Control Piece" in the shade as well.

Example:

If 3650mm boards are being installed put aside one 3650mm board at the start of the day. Reference these boards throughout the day and adjust the cutting of the other boards to match.

2)Control Gap

at the start of the installation place the board gap according to Table 1.4 and mark the first gap made. This gap will be a "Control Gap" to reference when gapping the remaining boards to be installed. Throughout the installation reference back to this "Control Gap" to match the other gaps being installed. This will ensure that all the gaps installed are the same.

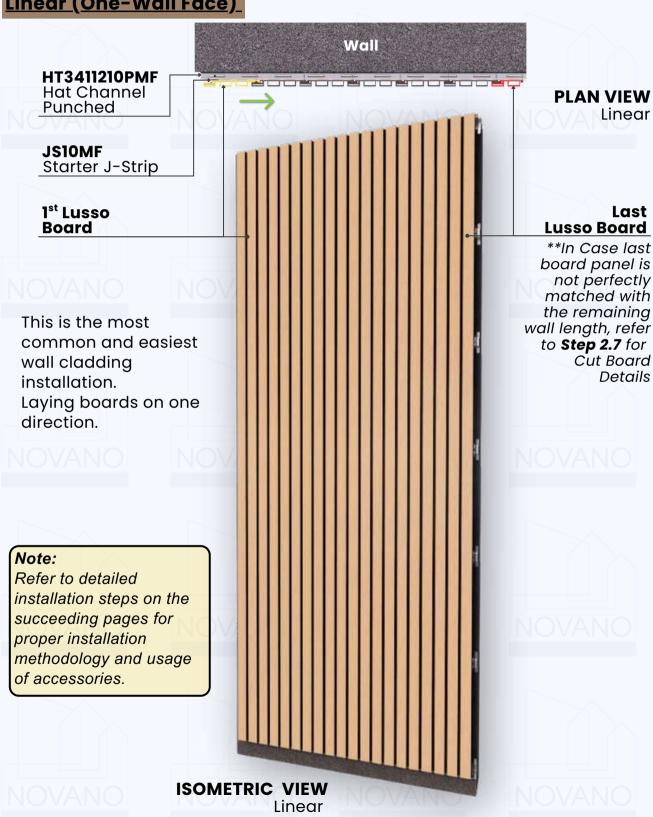


SEQUENCE OF BOARD INSTALLATION BASED ON PROJECT 6 WALL LAY-OUT

When installing the Lusso Siding Profile and its components, it is important to study the sequence of board placement to ensure proper termination especially of the last boards.

Below are the general wall lay-outs and board sequence suggestions (for other complex wall lay-out, the following can be used in combinations):

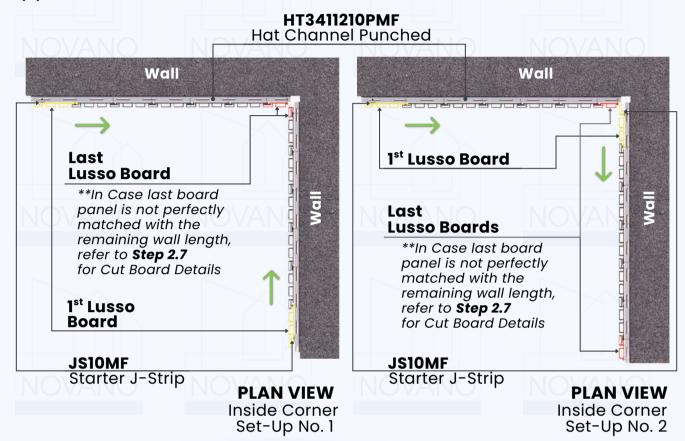
Linear (One-Wall Face)

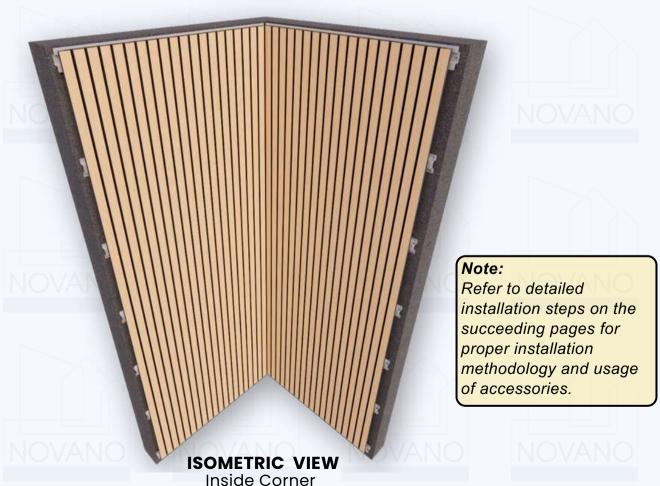


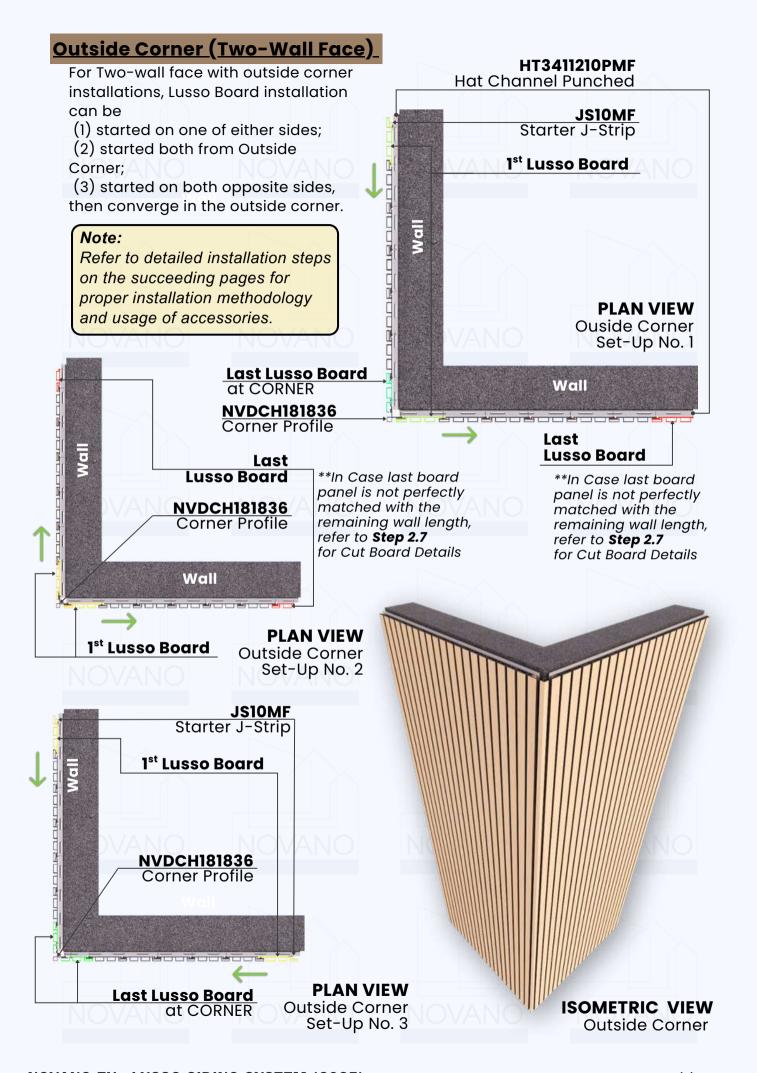
Inside Corner (Two-Wall Face)

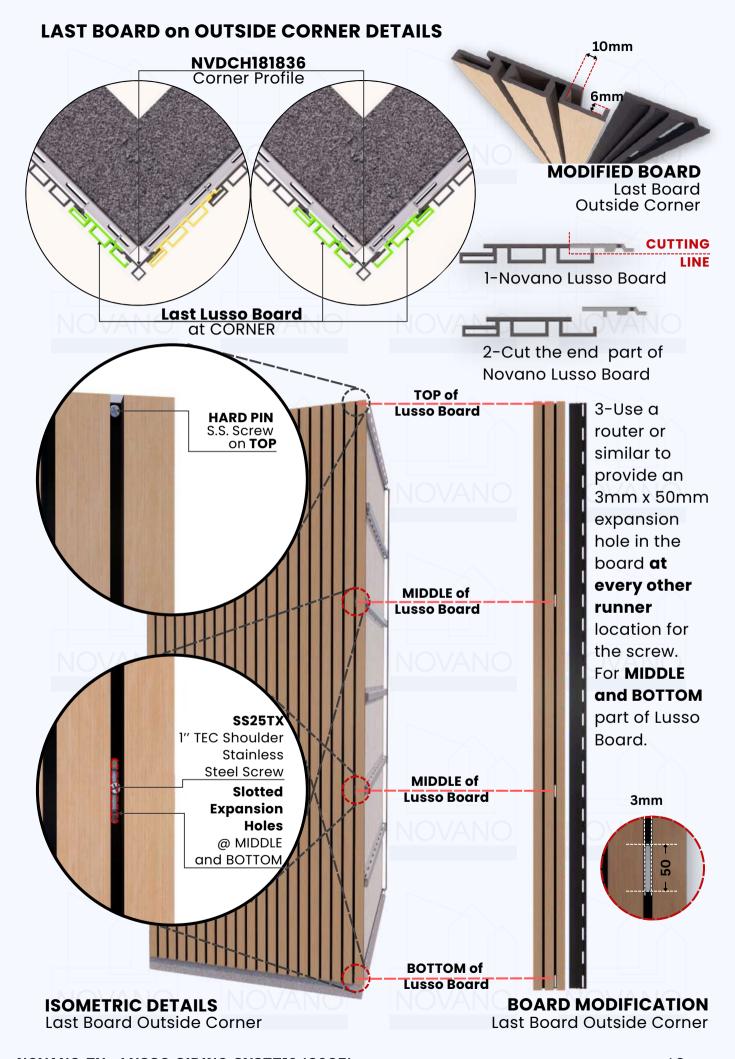
For Two-wall face with inside corner installations, Lusso Board installation can be

- (1) started on both opposite sides, then converge in the inside corner; or
- (2) started on one of either sides.

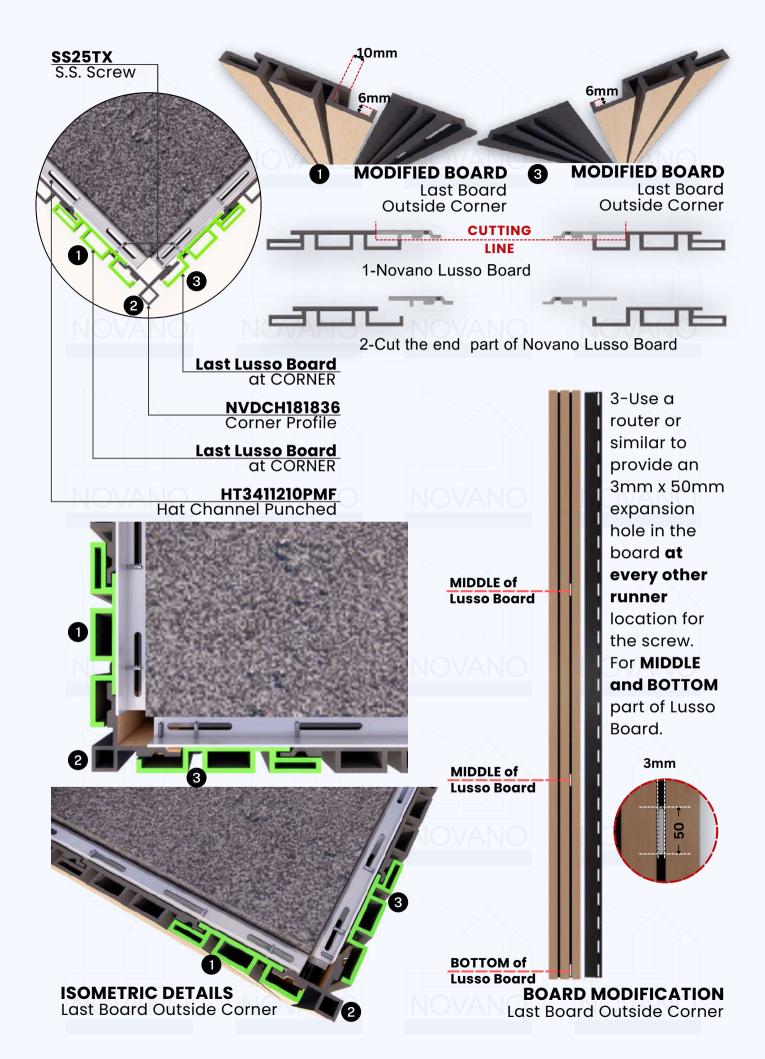


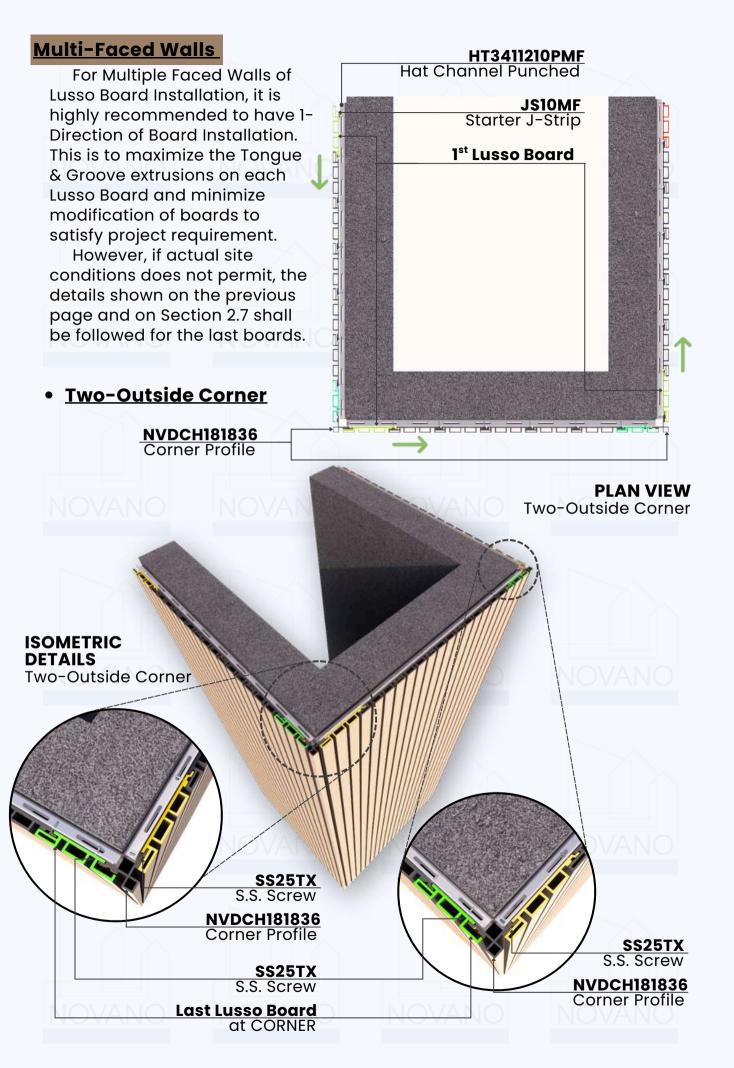




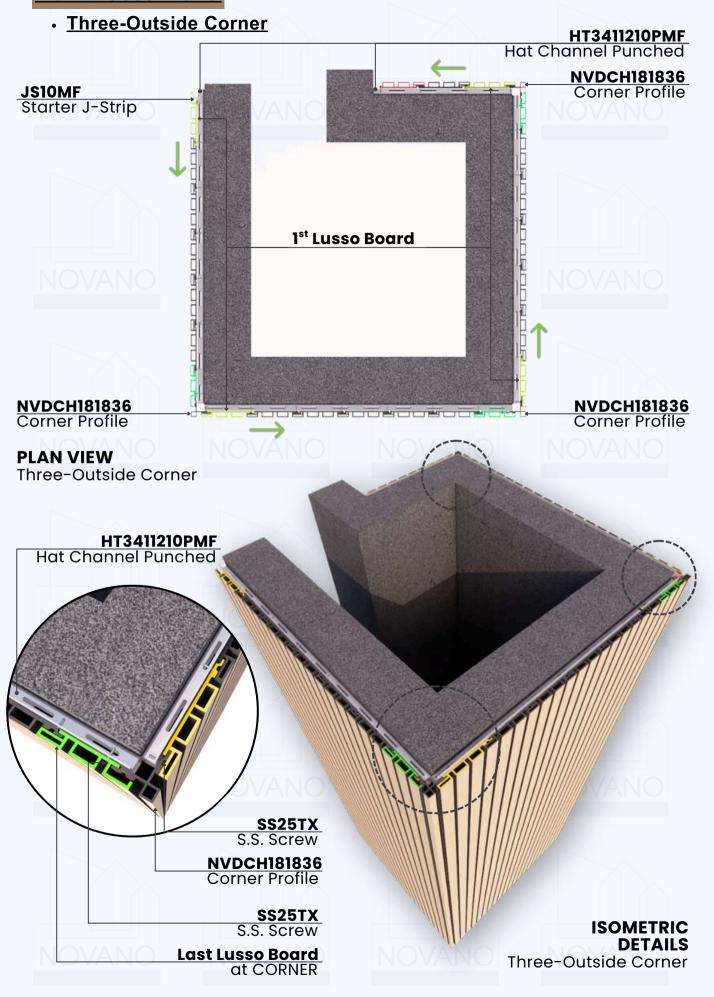


LAST BOARD on OUTSIDE CORNER DETAILS (on 1 FACE) 10mm 6mm SS25TX **MODIFIED BOARD** S.S. Screw Last Board **Outside Corner CUTTING** LINE 1-Novano Lusso Board 3 **Lusso Board** 2-Cut the end part of Novano Lusso Board NVDCH181836 Corner Profile 3-Use a **Last Lusso Board** at CORNER router or similar to HT3411210PMF Hat Channel Punched provide an 3mm x 50mm expansion hole in the board at every other **MIDDLE of** runner Lusso Board location for the screw. For **MIDDLE** and BOTTOM part of Lusso Board. **MIDDLE of** Lusso Board 3mm **BOTTOM of** Lusso Board ISOMETRIC DETAILS **BOARD MODIFICATION** Last Board Outside Corner Last Board Outside Corner

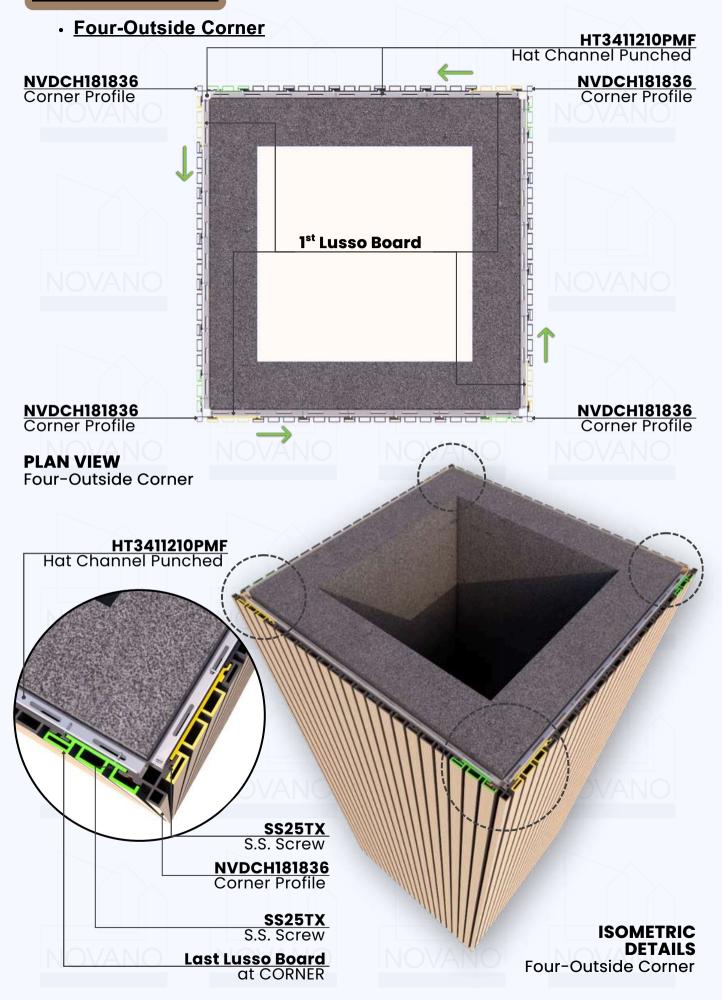




Multi-Faced Walls



Multi-Faced Walls



II. INSTALLATION - PROCEDURE

SECTION 1 – Vertical Lusso Profile Application Expose Edges

STEP 1.1

Check the layout and designed direction of the Lusso profile to be installed; depends on the design requirements. Also, check the layout for existing plumbing and electrical wiring to make sure that there is not any interference.

STEP 1.2

Check the surface wall level to be 100% levelled before installing the aluminium Runner HT3411210PMF.

STEP 1.3

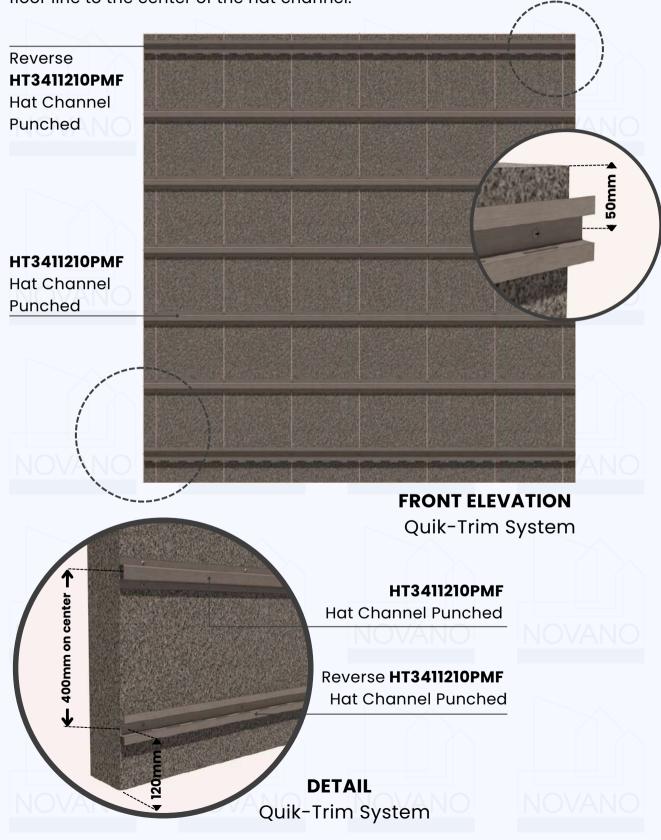
Establish gridline for the aluminum hat channel HT3411210PMF, minimum of 50mm from finish ceiling line to center of first hat channel and followed by minimum 400mm spacing center to center hat channel. The last hat channel needs to have a maximum of 120mm from the finish floor line to the center of the hat channel.



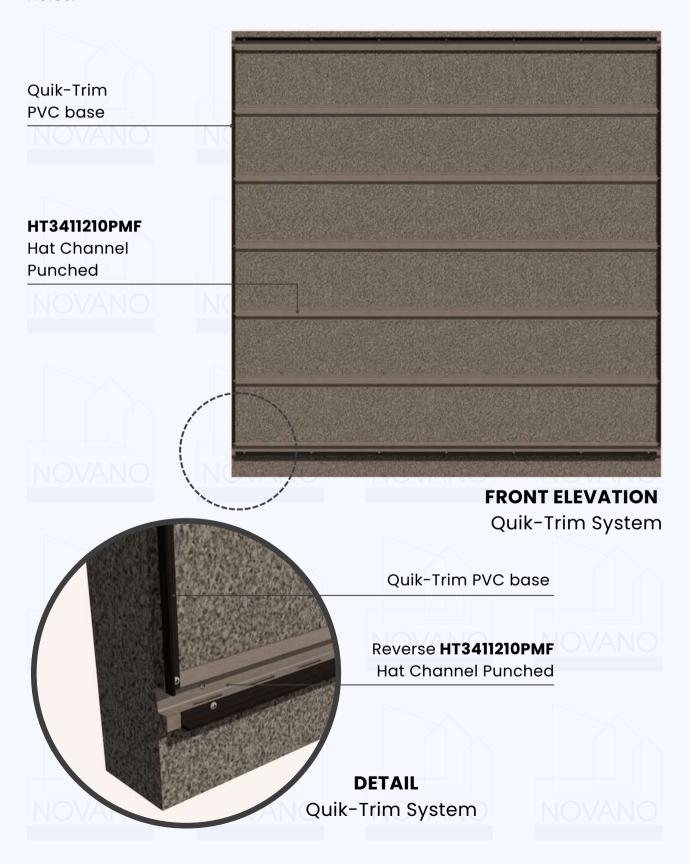
FRONT ELEVATION

Quik-Trim System

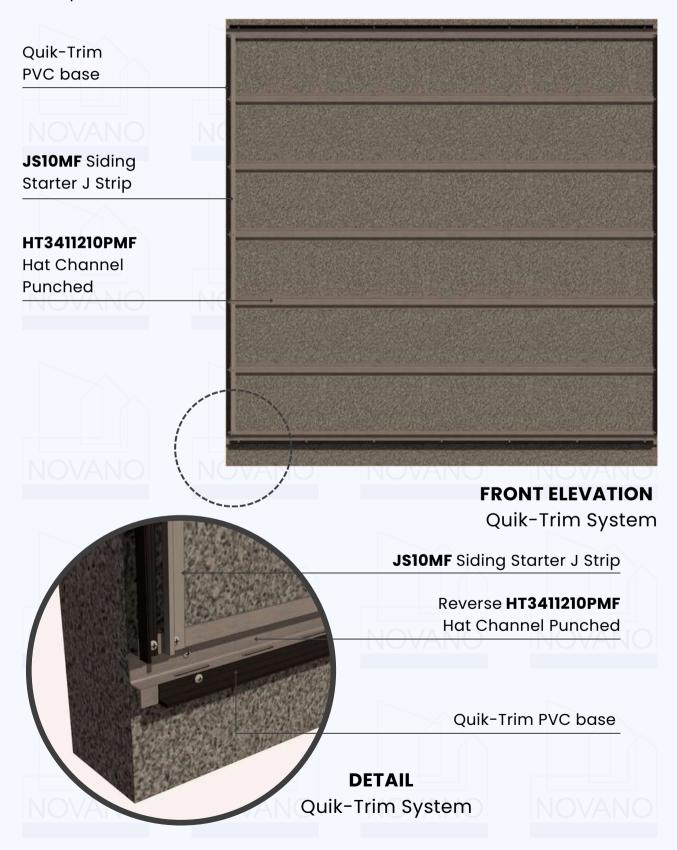
Install the first horizontal hat channel on a reverse orientation starting from the finish ceiling line to the center of the hat channel with a minimum of 50mm and followed by a minimum of 400mm center to center. Note that the last hat channel needs to have a maximum of 120mm from the finish floor line to the center of the hat channel.



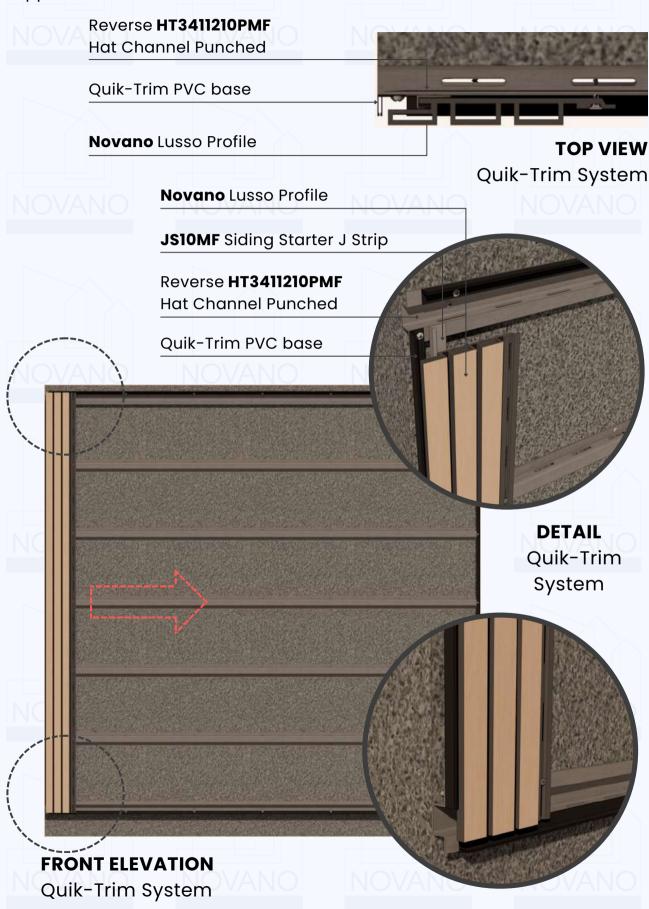
Pre-apply the Quik-Trim PVC base for all finishing trim accessories such as trim around corners, windows, and doors according to the pre-plan layout and following the manufacturer's recommendations. Ensure that all trim is level and square. Battens should be installed horizontally with punched holes.



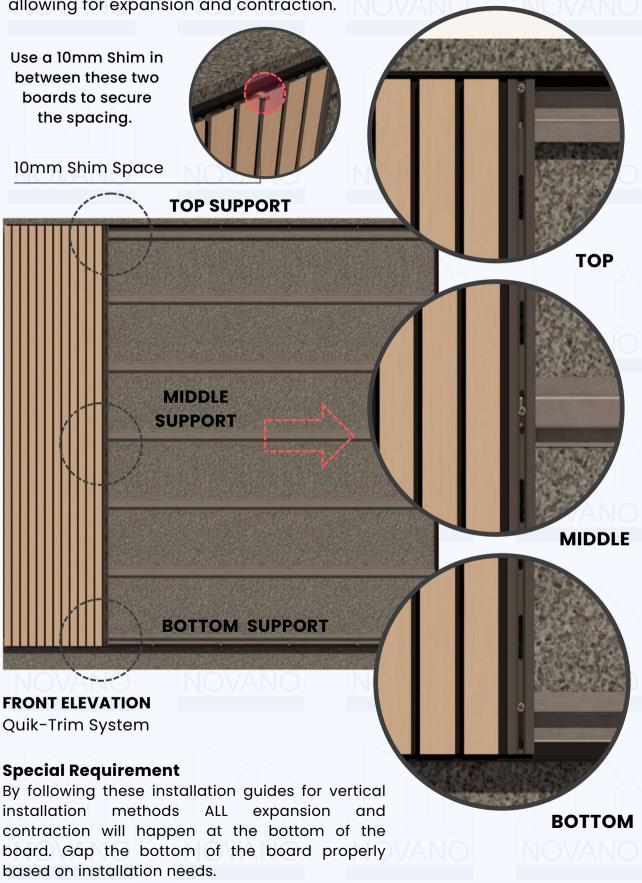
A starter J-strip is required to install the Novano lusso siding profile. Besides the PVC base attach the starter strip vertically at one end of the batten substructure following the fastener and spacing recommendations. The Novano lusso siding profile will hang beyond the starter strip therefore the starter strip should be attached accordingly per the pre-plan layout. If the lusso profile is installed at the corner follow Section 2.



Hook the groove end of the first lusso profile into the starter J-strip vertically and screw using SS25TX screw into the slotted hole in every hat channel support.



Continuously install the lusso profile vertically and install a SS25TX screw or a #8 screw into the slotted hole at the top of the lusso profile. DO NOT overtighten this screw. This screw should be placed at the top of the slotted hole and loose enough to allow the board to move freely in the vertical direction allowing for expansion and contraction.

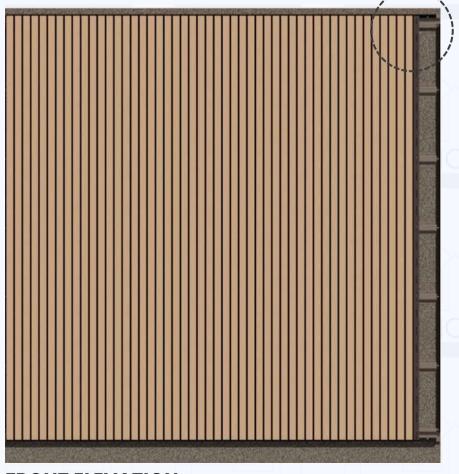


Note

If installing more than one board in height, please refer to Section 3 – Multi-Board Vertical Lusso Profile Applications

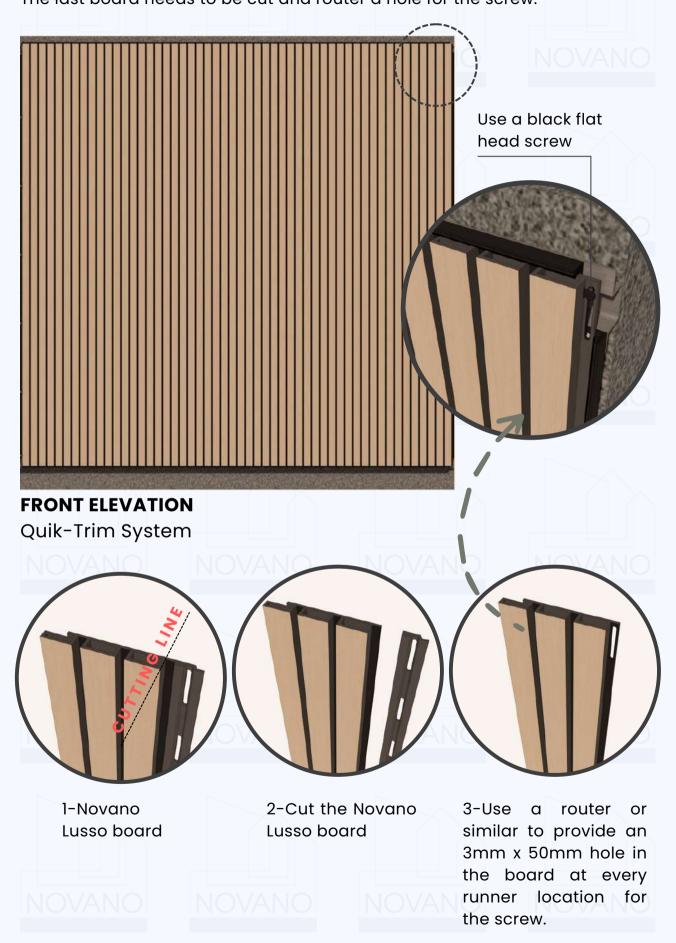
STEP 1.9Continue installing the lusso profile vertically as outlined in STEP 1.7,



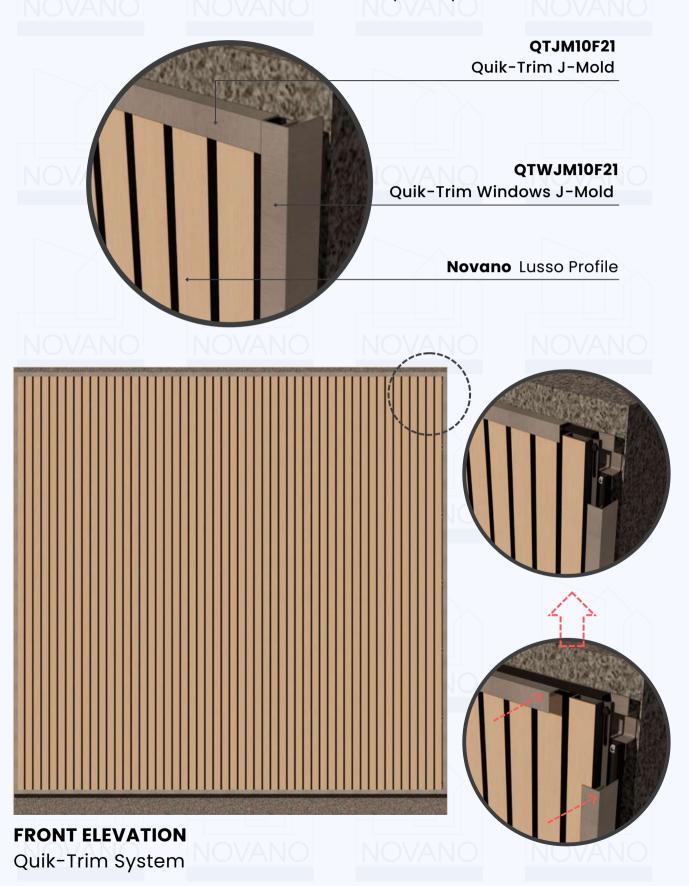


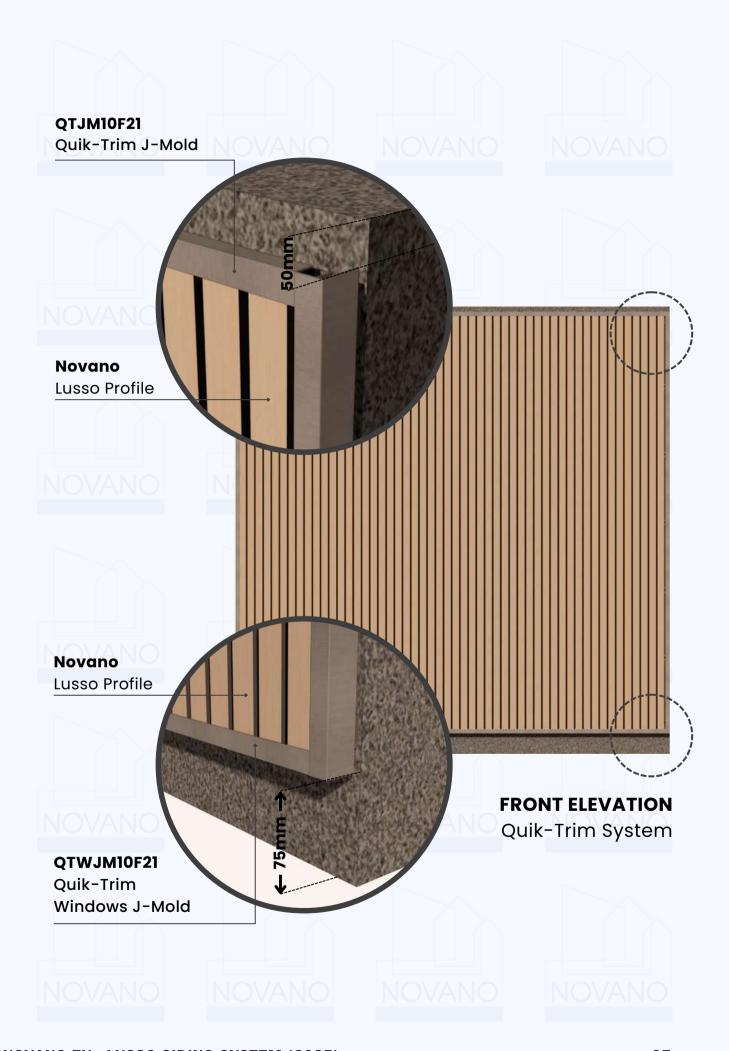
FRONT ELEVATIONQuik-Trim System

STEP 1.10The last board needs to be cut and router a hole for the screw.



After the installation of the last Lusso profile, the exposed edges will be finished by aluminum Quik-Trim. Finally, install the window J-mold into the PVC base on the sides and J-mold into the topmost part.

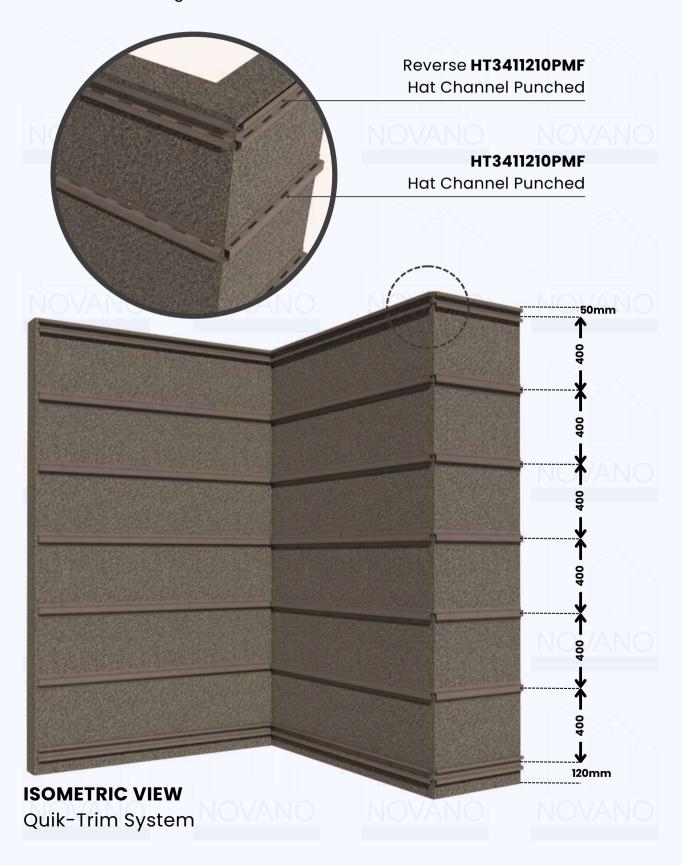




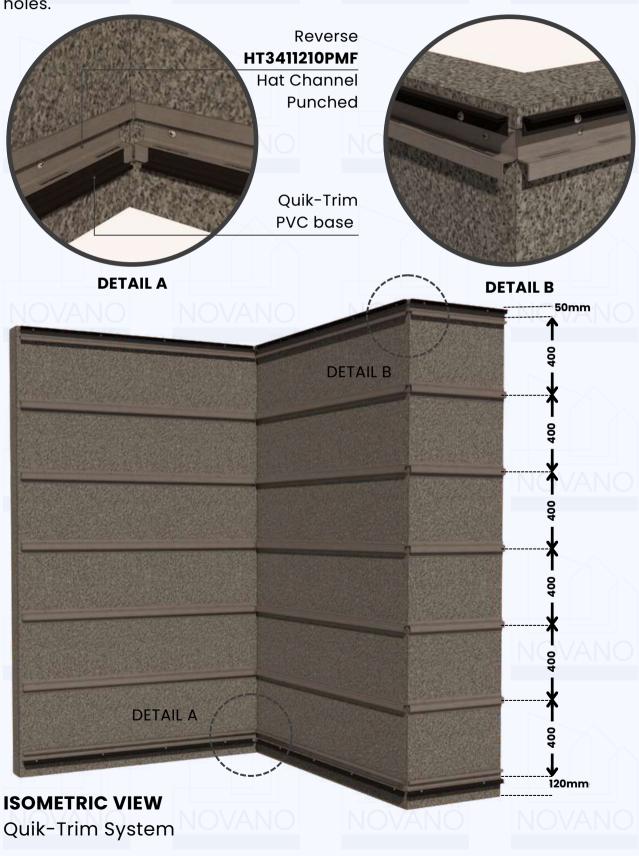
SECTION 2 – Vertical Lusso Profile Applications on Outside Corner

STEP 2.1

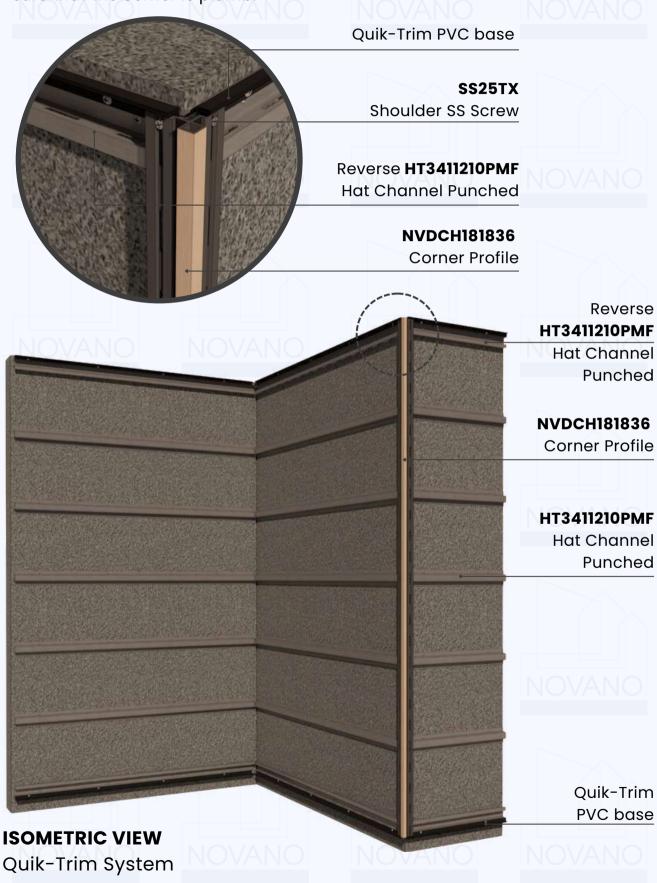
Follow Steps 1.1, 1.2, 1.3, and 1.4 from Section 1. Ensure the installation of the hat channels is aligned with each other on the other side of the wall.



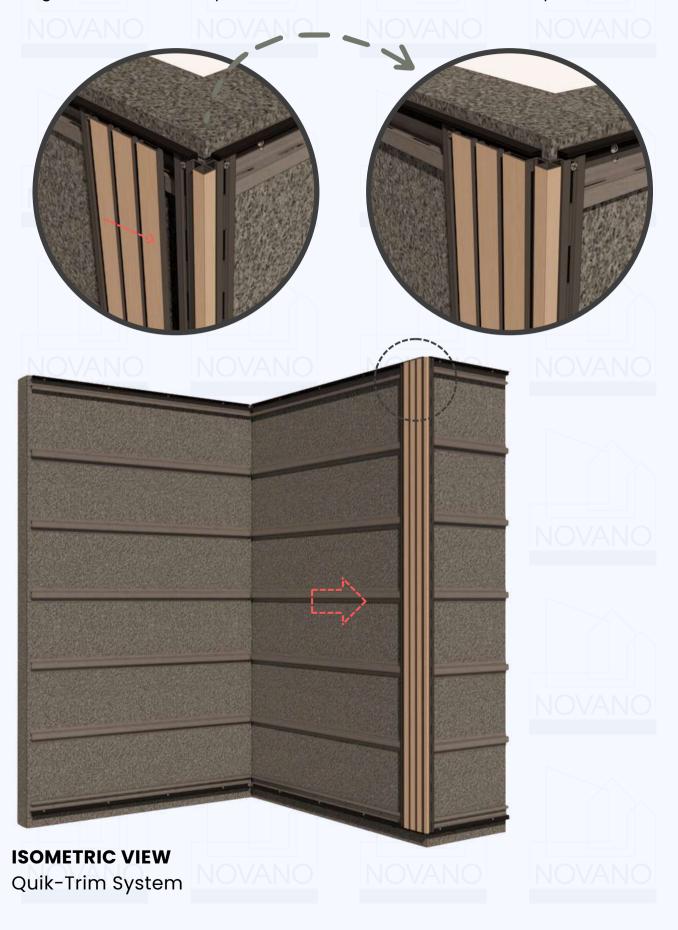
Pre-apply the Quik-Trim PVC base for all finishing trim accessories such as trim around corners, windows, and doors according to the pre-plan layout and following the manufacturer's recommendations. Ensure that all trim is level and square. Battens should be installed horizontally with punched holes.



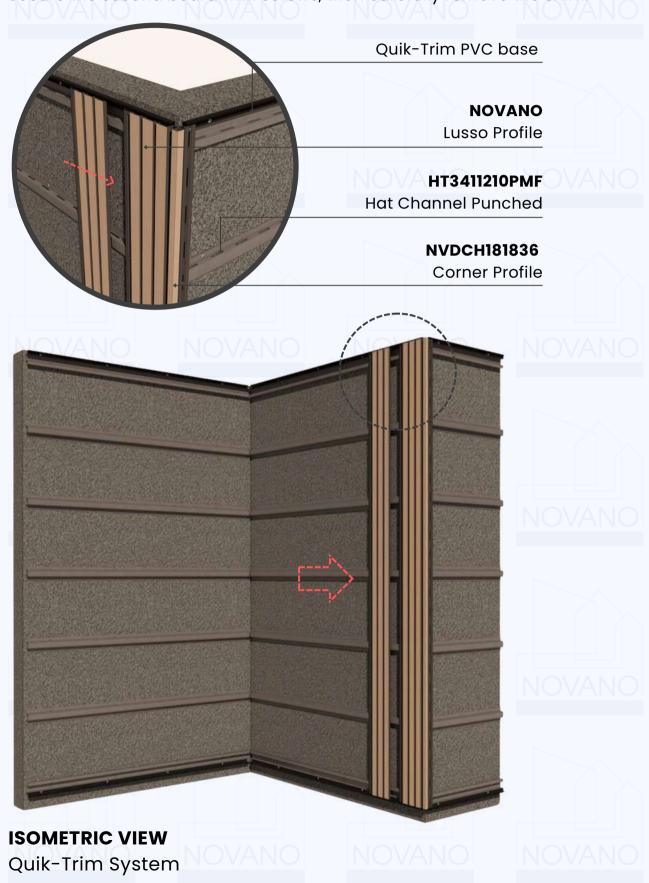
After the installation of the Quik-Trim PVC base, screw the NVDCH181836 corner profile directly into the hat channel using the SS25tx screw and make sure that the corner is plumb.

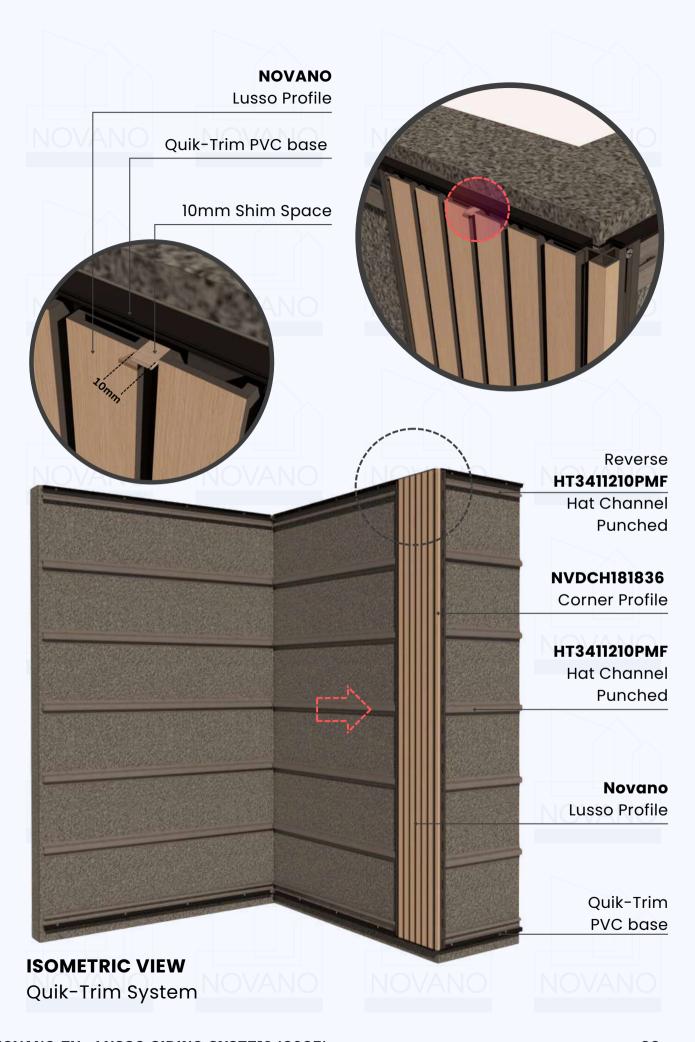


Slide in the first lusso board and screw on the topmost part using SS25tx aligned into the corner profile and make sure that the board is plumb.

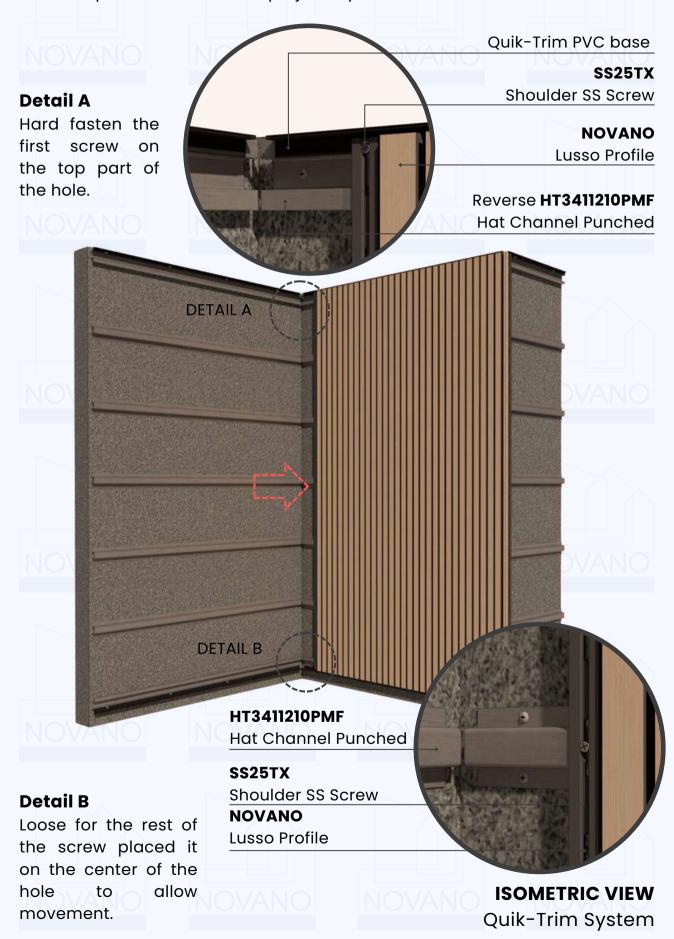


Insert the second Lusso siding board, ensuring it aligns with the first board. Place a 10mm shim between the two boards to maintain proper spacing. Secure the second board with screws, then carefully remove the shim.





Repeat step 2.5 until reaching the end of the wall and make sure that the corner is plumb based on the project layout.



The inside corner needs to be finished by lusso cut board. See Option 1 and 2 termination.

OPTION 01 Cutting the male part of the Lusso Board

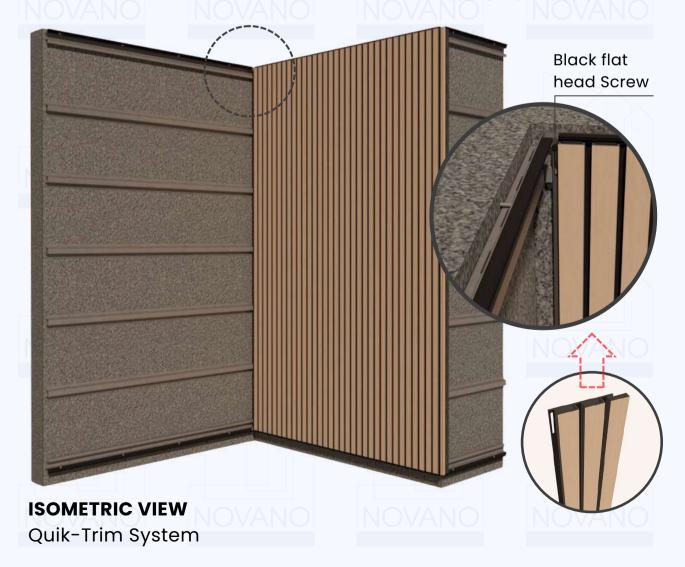
(INSIDE CORNER DETAIL)

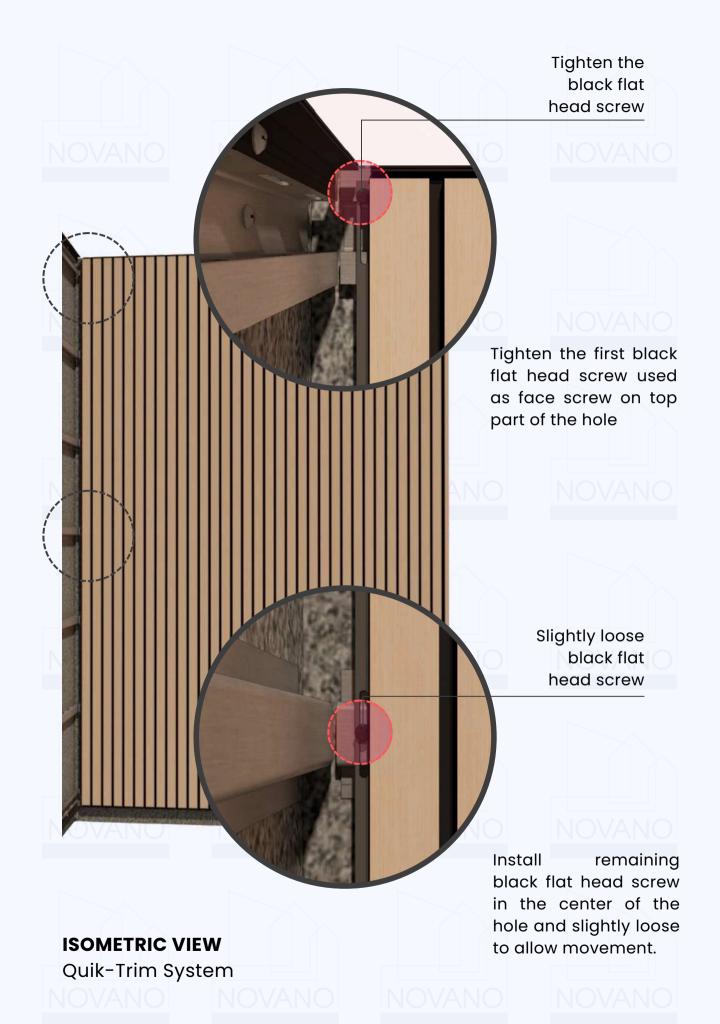


1-Novano Lusso board

2-Cut the male part of Novano Lusso board

3-Use a router or similar to provide an 3mm x 50mm hole in the board at every runner location for the screw.





OPTION 02 Cutting the female part of the Lusso Board

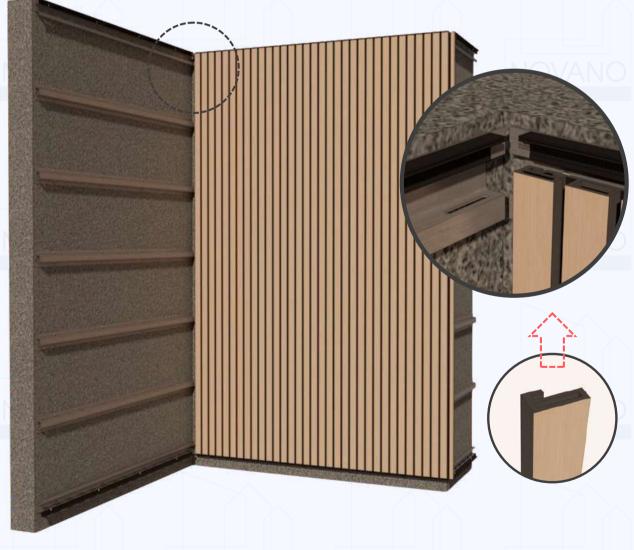
(INSIDE CORNER DETAIL)



1-Novano Lusso board

2-Cut the female part of Novano Lusso board

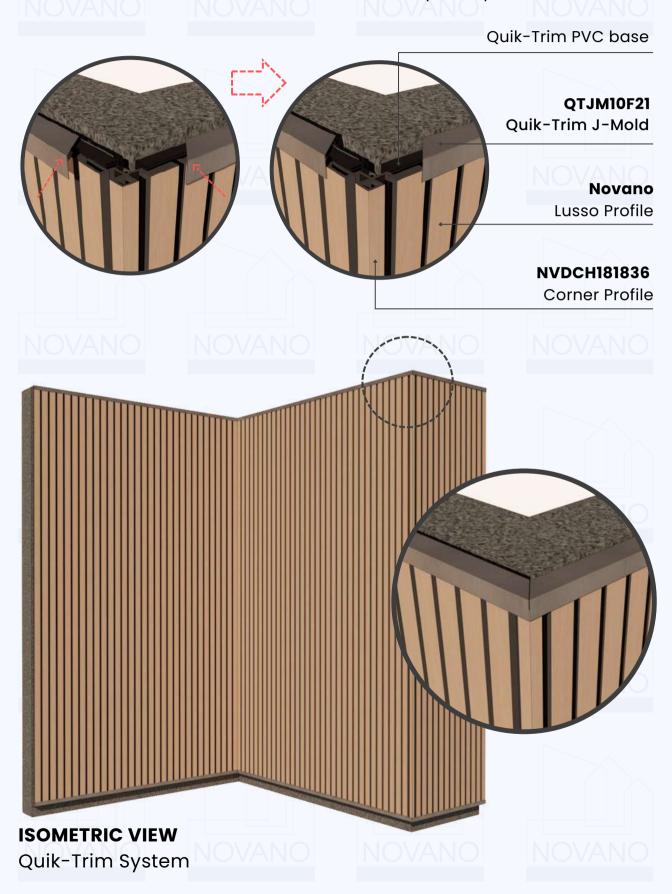
3 Apply PL Premium adhesive on this area to hold the cut female board.



ISOMETRIC VIEW

Quik-Trim System

After the installation of the last Lusso siding profile, the exposed edges will be finished by aluminum Quik-Trim. Finally, install the window J-mold into the PVC base on the sides and J-mold into the topmost part.



SECTION 3 – Multi-Board Vertical Lusso Profile High Installation using the Aluminum Quik-Trim H-Mold

STEP 3.1

Ensure that the reverse battens have been installed horizontally where boards are to be installed end to end.

STEP 3.2

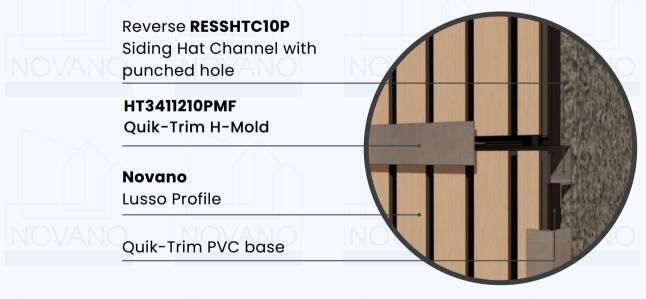
Follow Steps 1.2, 1.3, 1.4, and 1.5 from Section 1 to install the Quik-trim trim, starter J-strip, and hook in the first Lusso board. Install another Quik-trim PVC base horizontally into the hat channel where the H-mold aluminum trim will be installed at each board abutment joint to cover the ends of the Novano Lusso Siding board. This is an option for installations using 3 or more boards abutted end-to-end. None of the Lusso profile Trim should be installed horizontally unless weep holes are drilled at 8" intervals to allow for moisture to escape from behind the face flange.

STEP 3.3

Install the SS25TX screw into the slotted hole at the top of the lusso board. DO NOT over-tighten this screw. This screw should be placed at the top of the slotted hole and loose enough to allow the board to move freely in the vertical direction allowing for expansion and contraction.

STEP 3.4

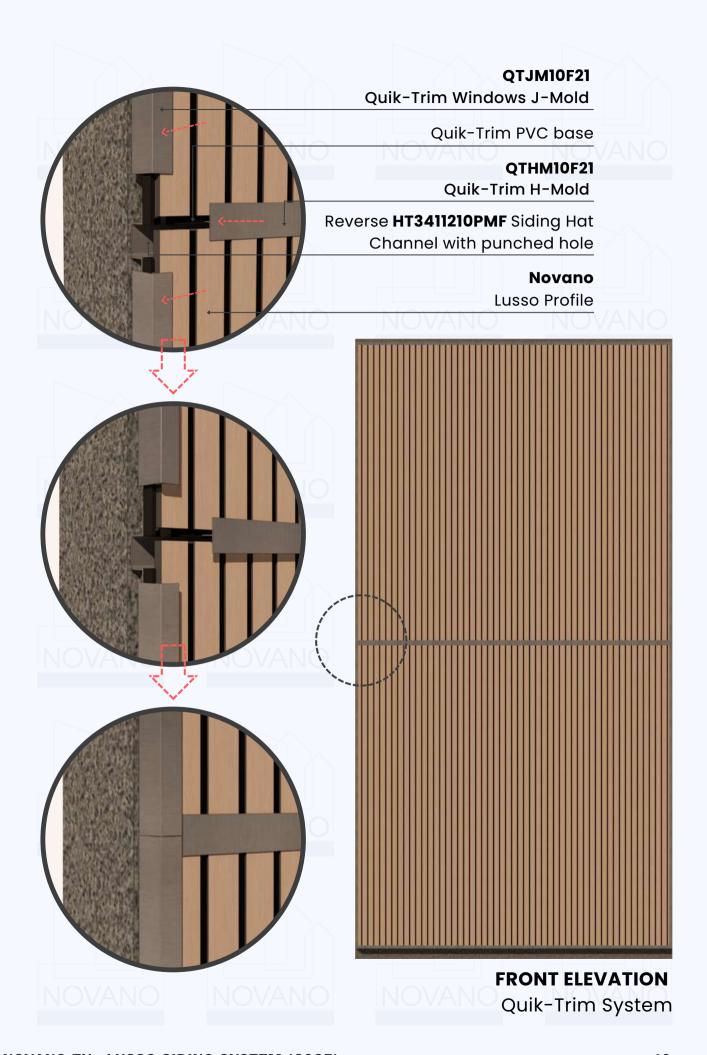
Hook the groove end of the next lusso board onto the tongue of the installed lusso board. Proper gapping between the lusso board and Quik-trim PVC base for the H-mold aluminum trim finishing.



DETAILQuik-Trim System

STEP 3.5

Continue installing the Lusso board vertically as outlined in Section 1 until the last Lusso board is installed. After the installation of the last lusso board, finally, install all the aluminum trim on the Quik-Trim PVC base to finish the installation.



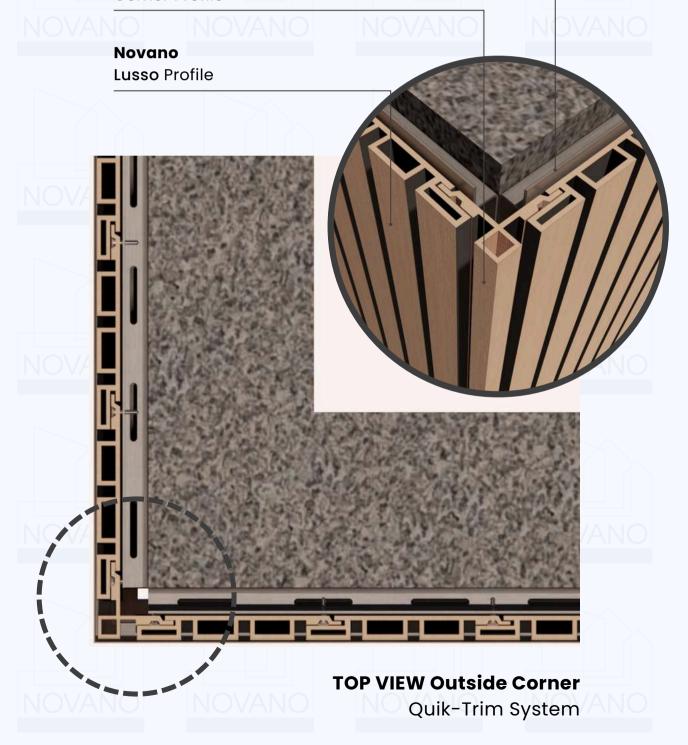
SECTION 4 - Finishing

VERTICAL OUTSIDE CORNERS

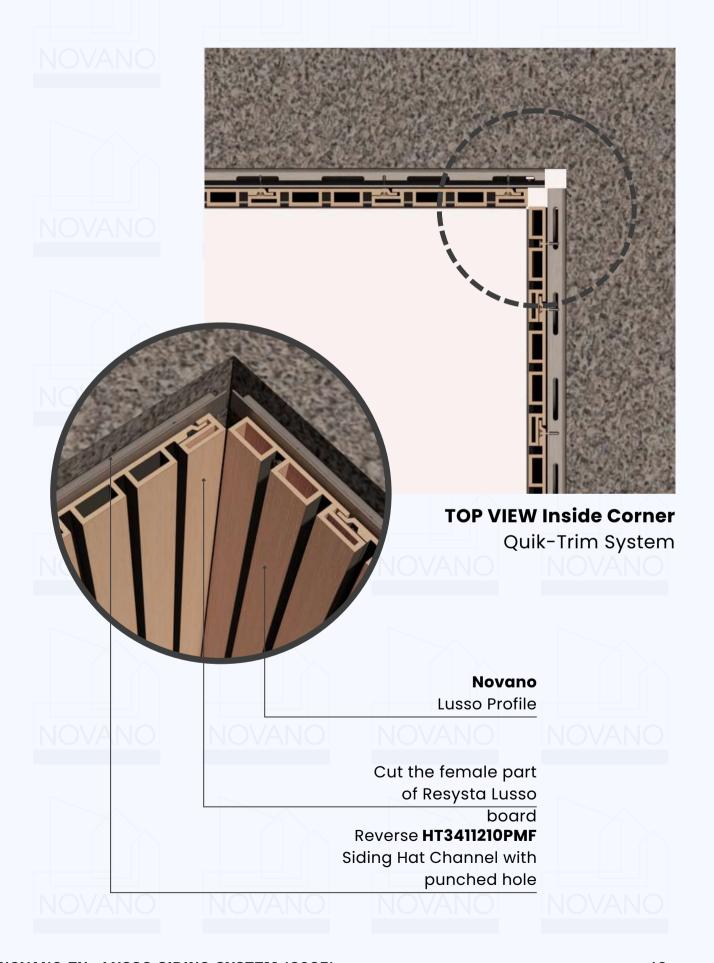
Reverse **HT3411210PMF**Siding Hat Channel with punched hole

NVDCH181836

Corner Profile



VERTICAL INSIDE CORNERS



III. GENERAL ADVICE

SECTION 1 – Expansion Joint

Expansion joint caters for temperature- dependent linear expansion of 1/16" gap per board every 10 degrees in temperature change between the ends of the planks. e.g. 2900mm plank= approx. 3mm distance. If the planks are installed closed to a wall the distance here should be 10mm. (Refer to expansion chart).

Surface	Gap	Gap	Ending
Temperature	(2900mm board)	(3650mm board)	
30°C-40°C	2mm	3mm	10mm
15°C-30°C	3mm	4mm	15mm
40°C-60°C	lmm	2mm	10mm
60°C-70°C		none	5mm

Table 1.2 "Expansion Joint"

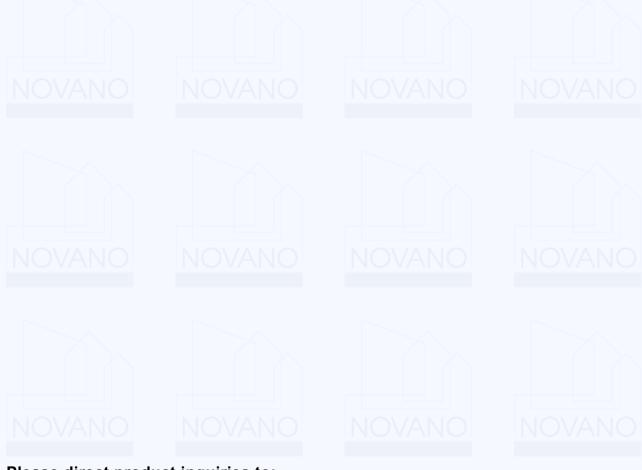
- 1.1 The Dimensional change of Novano is solely dependent on the thermal expansion. Air, humidity, and water have no influence on dimensional change. Thermal expansion must be considered at installation.
- 1.2 Cutting to length should be carried out at consistent material temperature. Therefore, the materials should be stored in the shade or in areas where it is not exposed to direct sunlight. The material can warm up considerably in the sun, leading to an increased change in length. In the case of more distinct fluctuations in material temperature, cutting to length may have to be adapted accordingly.
- 1.3 Novano has a high vapor diffusion resistance. Please consider installation.
- 1.4 Novano has a class A fire rating (ASTM-E84).
- 1.5 Cut-off pieces and/or abrasive dust have to be disposed of separately. Please comply with the regulations of your competent waste management. You may under no circumstances burn Novano yourself.

SECTION 2 - General Notes

- 2.1 Novano Building Products is not responsible for the information shown on all details beyond the specification scope of work BID/quoted and as indicated in the contract documents.
- 2.2 Details of adjustment work are shown for completeness only. The project Architect / Project Engineer / Erecting Contractor supplying and/or installing the structural support is responsible for its design/installation to accommodate all loads imposed upon the products.
- 2.3 Our Engineer is limited to the load-carrying components of the Lusso siding system and its fasteners shown on the subsequent drawings. The components are supplied by other parties.
- 2.4 These drawings are the copyright property of Novano Building Products, Inc.
- 2.5 Please read our installation and design recommendation documents for further information that may be important for your specific project or installation.
- 2.6 Ensure a steady material temperature when cutting the boards to size. The cutting has to be done under constant conditions. e.g. inside or in the shade.
- 2.7 Always consider the linear expansion of Novano, which is dependent on the temperature but not air humidity. See Table 1.1 for more information.
- 2.8 Minimum runner/batten spacing for the 200mm Lusso siding system.
- 2.9 Slots should be used to attach Lusso siding to runners/battens.
- 2.10 Overhang Lusso siding boards to a maximum of 1".
- 2.11 Only use construction fastening material and hardware suitable for outdoor use (e.g. Stainless Steel Screws).

IV. SAFETY WARNING

Novano Products do not present an inhalation, ingestion, or contact health hazard unless subjected to operations such as sawing, sanding, or machining, which result in the generation of airborne particulates. This product contains amorphous silica. Respirable amorphous silica limits are specified by OSHA. Exposure to respirable (fine) silica dust depends on a variety of factors, including activity rate (e.g. cutting rate), method of handling, ventilation, environmental conditions (e.g. weather conditions, workstation orientation), and engineering control measures used. Exposures to respirable amorphous silica above limits established by OSHA are not expected during the normal use of this product. Amorphous silica has been shown to cause silicosis and has been identified by the State of California, IARC, and NTP as a known human carcinogen. The risk of developing silicosis is dependent upon the exposure intensity and duration. It is recommended that a NIOSH-approved particulate respirator be worn whenever working with this product results in airborne dust exposure.



Please direct product inquiries to:

Ernst-Gremler-Straße 18, 58239 Schwerte, Germany Tel: +49 (0) 2304 911 80 38

Email: info@novanoeu.com