



Castellation Cladding System Installation

v20190909 AUS



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IMPORTANT:
Read All Sections Before You Start

For the most up to date information, please visit our website @ www.newtechwood.com

Prior to installing any composite cladding system, it is recommended that you check with local building codes for any special requirements or restrictions. The diagrams and instructions outlined in this guide are for illustration purposes only and are not meant or implied to replace a licensed professional. Any construction or use of NewTechWood must be in accordance with all local zoning and/or building codes. The consumer assumes all risks and liability associated with the construction and use of this product.

Safety

When dealing with any type of construction project, it is necessary to wear appropriate safety equipment to avoid any risk of injuries. NewTechWood recommends, but is not limited to the following safety equipment, when handling, cutting, and installing NewTechWood: gloves, a respiratory protection, long sleeves, pants, and safety glasses.

Tools

Standard woodworking tools may be used. It is recommended that all blades have a carbide tip. Standard stainless steel or acceptable coated deck screws and nails are recommended.

Environment

A clean, smooth, flat, and strong surface is needed to install NewTechWood's products correctly. Please check with local building codes before ever installing any type of cladding. If installation does not occur immediately, NewTechWood's products need to be put on a flat surface at all times. It should NEVER be put on a surface that is NOT flat.

Planning

Plan a layout for your cladding before starting it to ensure the best possible looking cladding for your project. Building codes and zoning ordinances generally apply to permanent structures, meaning anything that is anchored to the ground or attached to the house. So nearly every kind of cladding requires permits and inspections from a local building department. We recommend drawing out a site plan of your proposed project that you intend to do to minimize errors and make your perfect wall cladding.

Construction

NewTechWood UltraShield is NOT intended for use as columns, support posts, beams, joist stringers or other primary load-bearing members. NewTechWood must be supported by a code-compliant substructure. While NewTechWood products are great for retrofits, NewTechWood's products CANNOT be installed on existing cladding boards.

Static

Static can also be more prevalent in areas that are of higher altitude because the humidity is lower. For these areas, be careful of using conducive objects such as metal railing and chairs as static shocks might occur more often. A potential way to lower the amount of static shocks occurring is to apply Staticide

(www.aclstaticide.com) on your deck or use anti-static mats before doorways.

Ventilation

NewTechWood products CANNOT be directly installed onto a flat surface. It must be installed onto a substructure, so there is adequate and unobstructed air flow under the cladding to prevent excessive water absorption. A minimum of 25 mm (1 inch) of continuous net free area under the cladding surface is required for adequate ventilation on all cladding, so air can circulate between adjacent members to promote drainage and drying.

Heat and Fire

Excessive heat on the surface of NewTechWood products from external sources such as but not limited to fire or reflection of sunlight from energy efficient window products. Low-emissivity (Low-E) glass can potentially harm NewTechWood products. Low-E glass is designed to prevent passive heat gain within a structure and can cause unusual heat build-up on exterior surfaces. This extreme elevation of surface temperatures, which exceeds that of normal exposure, can possibly cause NewTechWood products to melt, sag, warp, discolor, increase expansion/contraction, and accelerate weathering.

Current or potential NewTechWood customers that have concerns about possible damage by Low-E glass should contact the manufacturer of the product, which contains Low-E glass for a solution to reduce or eliminate the effects of reflected sunlight.

Fasteners


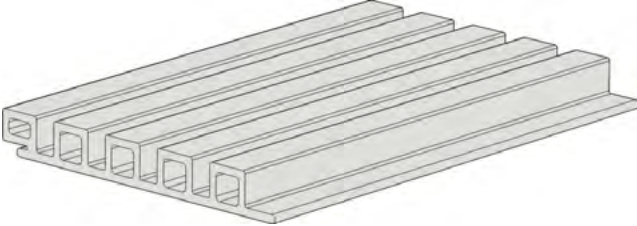
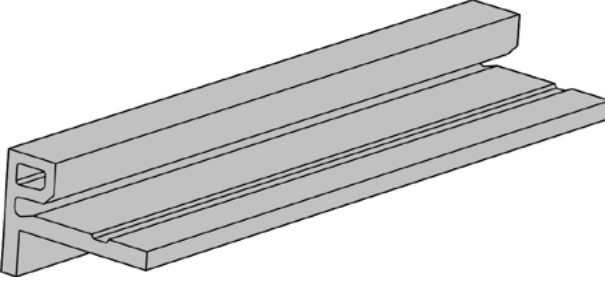
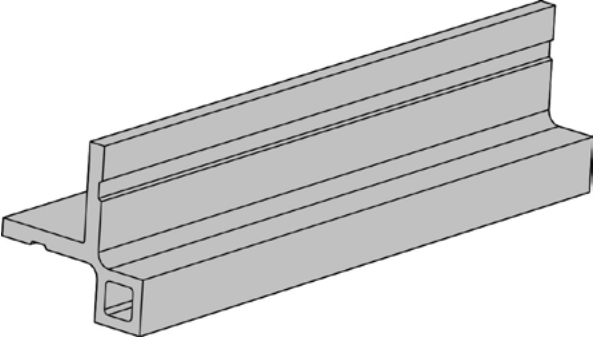
When fastening NewTechWood's products all screws that are face fastened should always be driven in at a 90 degree angle to the cladding surface. Toe nailing/screwing should never be done to the products. An extra joist should be added if a 90 degree angle cannot be driven into the board. All fasteners should be on their own independent joists, when two boards ends meet each other there must be a sister joist. The end of each board must sit on its own joist.

Use white chalk, straight boards, or string lines as templates for straight lines. NEVER USE COLORED CHALK. Colored chalk will permanently stain NewTechWood's products and are highly not recommended.

All nails/screws that are face fixed should always be stainless steel. Depending on the screws that you use when face fixing, there could be potential bulging or mushrooming. It is recommended to take care of these mushrooms/bulges by taking a rubber mallet and patting them down to give your cladding a better look.

When choosing which screws/nails to use always check first with your local home centers and hardware stores to see if they have screws that are engineered specifically for composite wood. These screws/nails will always work and give NewTechWood's products the best looking outcome, using other screws/nails that are not recommended for composite could potentially damage/harm the cladding. If you are unsure which screw/nail to use, contact your manufacturer for more information.

Castellation Cladding Parts

Product	Purpose	Part
<p>AW-08</p>	<p>Used at every joist to fix each board to the joist</p>	
<p>UH61</p>	<p>Castellation Cladding Board</p>	
<p>UH50</p>	<p>F-Trim, used as the first and last board</p>	
<p>UH51</p>	<p>Outside Corner Trim, used on the outside corners</p>	

Castellation Cladding Screws (For Wood Joist)





Product	Purpose	Part
<p>*M3 x 12 SS304</p>	<p>Used when locking the board into AW08</p>	
<p>*M4 x 80** SS304 **depends on the thickness of your joists</p>	<p>Used when installing the joist to the wall</p>	
<p>*M4 x 20 SS304 (pan head)</p>	<p>Used when installing AW08 into wood joists</p>	
<p>*M4 x 20 SS304 (flat head)</p>	<p>Used when installing trims into wood joists</p>	

table 1

Castellation Cladding Screws (For Aluminum Joist)





Product	Purpose	Part
*M3 x 12 SS304	Used when locking the board into AW08	
*M4 x 80** SS304 **depends on the thickness of your joists	Used when installing the joist to the wall	
*M4 x 20 SS410 (pan head)	Used when installing AW08 into aluminum joists	
*M4 x 20 SS410 (flat head)	Use when installing trims into aluminum joists	

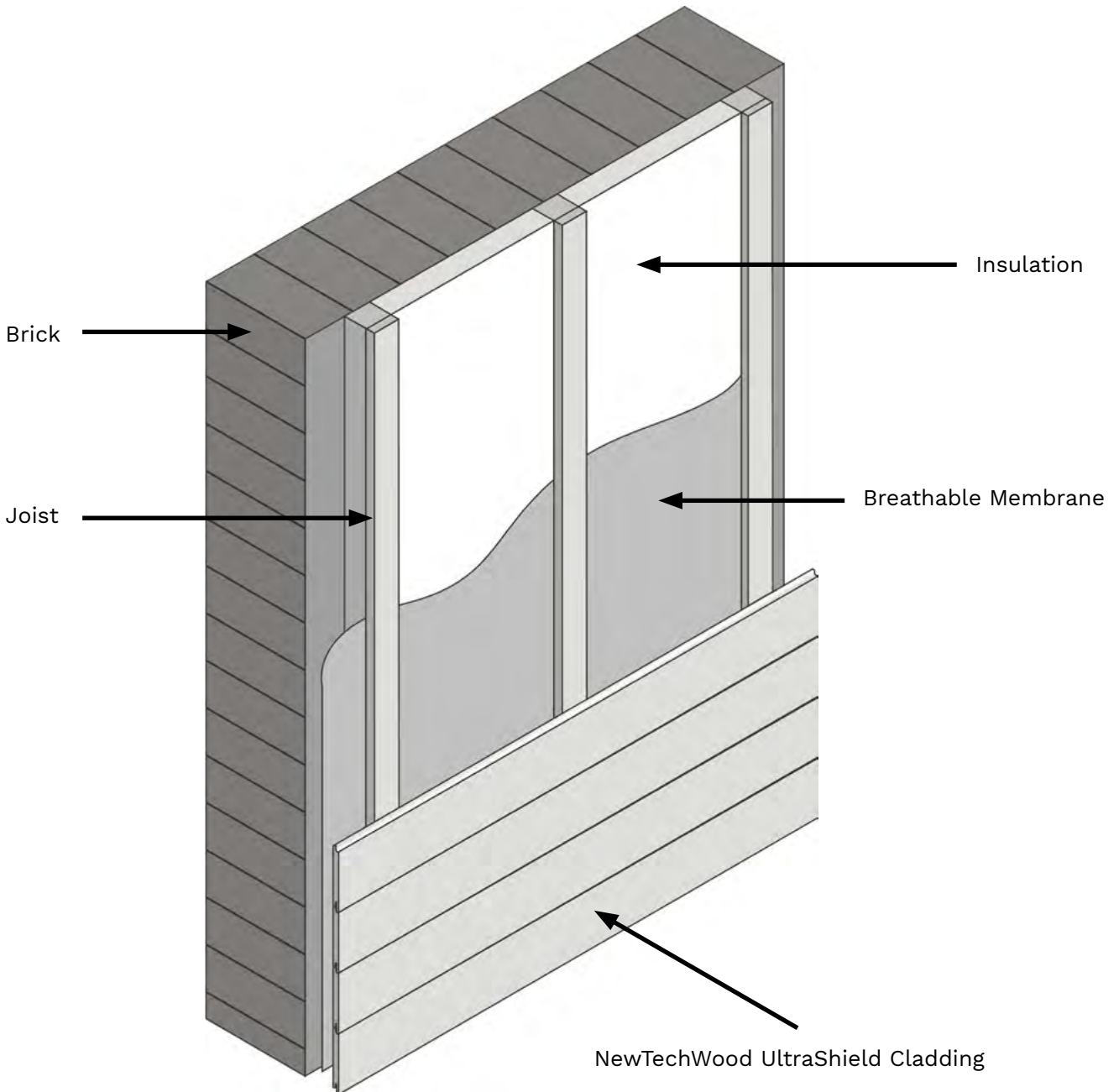
table 2

*Note: All screws are based on our recommendation and if the installation requires something different than what is shown, a professional should be consulted before installing.

The following installation guide will use the above screw sizes.

Under Construction

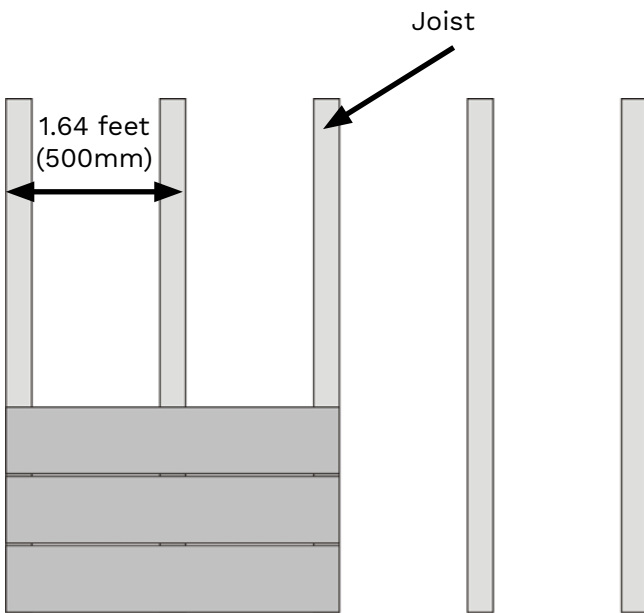
We recommend for the under construction aluminum or pressure treated wood joists. Each cladding board needs to be supported by a joist NO MORE than 1.64 feet (500 mm) from center to center. Extra care is required in order to provide sufficient joisting in and around obstacles such as windows, fascia's, soffits, guttering, ventilation points etc. Below is an example of the layers that would occur in a typical installation, but a licensed professional should always be consulted prior to any installation.



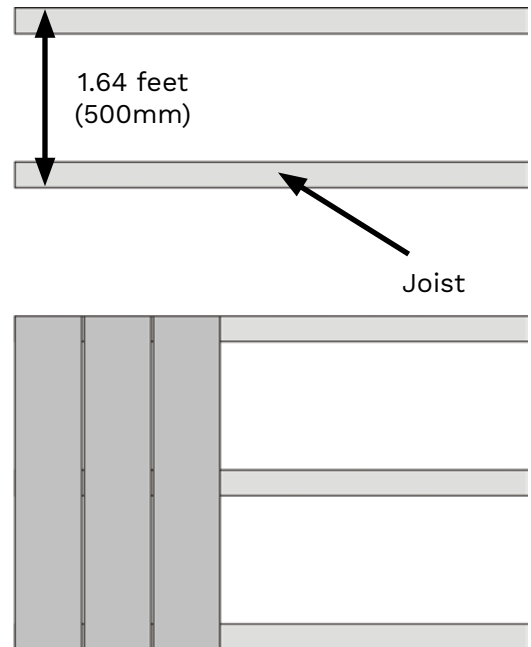
Joist Installation

A building professional should be consulted regarding vapor barriers and insulation for your project. Where a vapor barrier is to be used, it should be a breathable type and must be positioned behind the joists. The joist needs to have a minimum thickness of 1 inch (25 mm).

Wood joists should be fixed into position at a maximum of 1.64 feet (500 mm) centers using a suitable A4 Stainless Steel Countersunk Wood/Masonry screw. All joists needs to be flat and leveled against the wall surface use shims if necessary.



Horizontal Installation



Vertical Installation

Locking the Wall Cladding Board

Every AW-08 clip comes with a separate hole in the case there is a need to lock the board. The wall cladding boards will expand and contract and to take care of this movement, we must lock the board in one position and then allow the board to expand and contract readily in the other direction.

You can see how we lock the board in Diagram 1, 2, and 3.

Note: DO NOT LOCK EVERY BOARD. General rule of thumb is every board will only need one locking/fixation point.

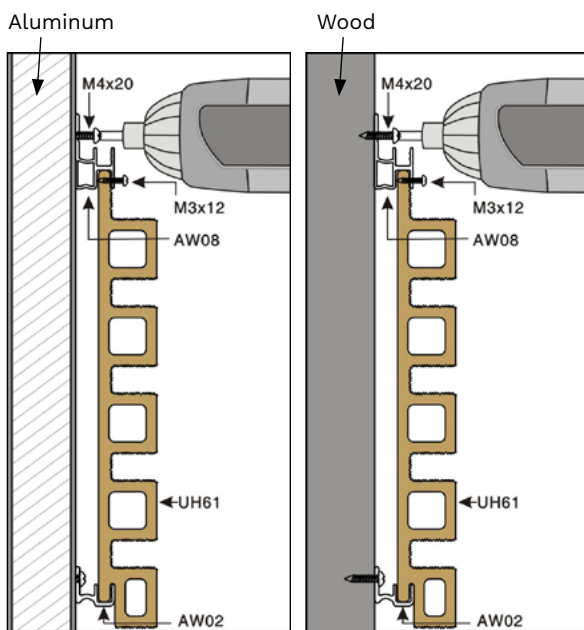


DIAGRAM 1

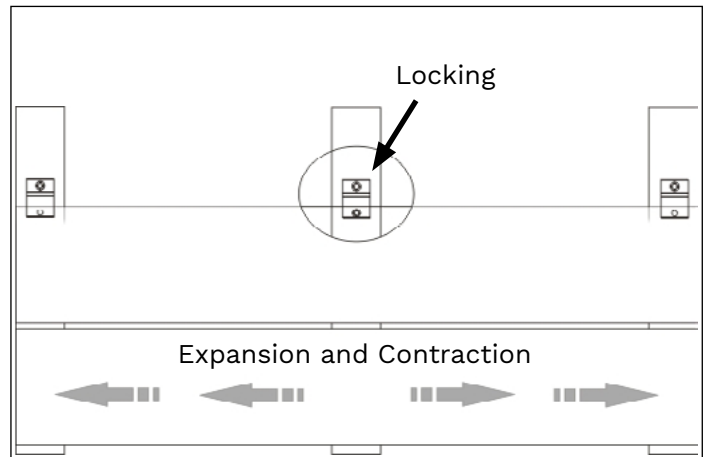


DIAGRAM 2

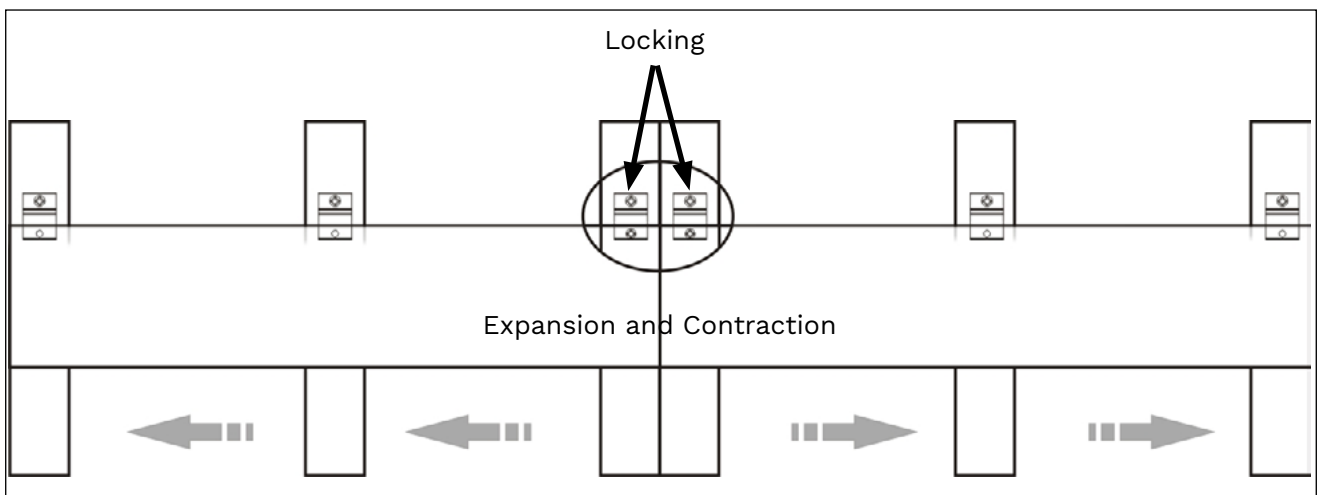


DIAGRAM 3

Expansion and Contraction Values

NewTechWood deck boards will experience expansion and contraction with changes in temperature. Expansion and contraction are most significant where extreme temperature changes occur. Fastening the deck planks according to the gapping requirements noted in the following table accommodates for this movement.

Expansion and Contraction table of values for Australia

		Length (Meters)									
		1	2.44	2.8	3	3.66	3.9	4	4.88	5.4	
Installation Temperature (°C)	10	1.2	3.9	4.5	4.8	5.9	6.2	6.4	7.8	8.6	Gap (mm)
	15	1.4	3.4	3.9	4.2	5.1	5.5	5.6	6.8	7.6	
	20	1.2	2.9	3.4	3.6	4.4	4.7	4.8	5.9	6.5	
	25	1.0	2.4	2.8	3.0	3.7	3.9	4.0	4.9	5.4	
	30	0.8	2.0	2.2	2.4	2.9	3.1	3.2	3.9	4.3	
	35	0.6	1.5	1.7	1.8	2.2	2.3	2.4	2.9	3.2	
	40	0.4	1.0	1.1	1.2	1.5	1.6	1.6	2.0	2.2	
	45	0.2	0.5	0.6	0.6	0.7	0.8	0.8	1.0	1.1	

Note: If you are still unsure of what gapping to use, contact the manufacturer and they will give you the correct gapping requirements based on your environment and area.

Framing

Below will show two options on how to install the castellation cladding boards.

The frame needs to be completely level before installing any wall cladding boards.

Note: Adequate spacing in the joists is required to keep the cladding boards from bending. Please review page 6 of this installation guide to see what spacing is required.

Option 1:
Installing the Trims and then Boards

- 1 The wall as shown in Diagram 4 will be installed to replicate different scenarios potentially occurring when installing the cladding.

Noted: We are using wood joists to this installation. If you are using aluminum joists, please refer to table 2 on page 6 for the correct recommended screws.

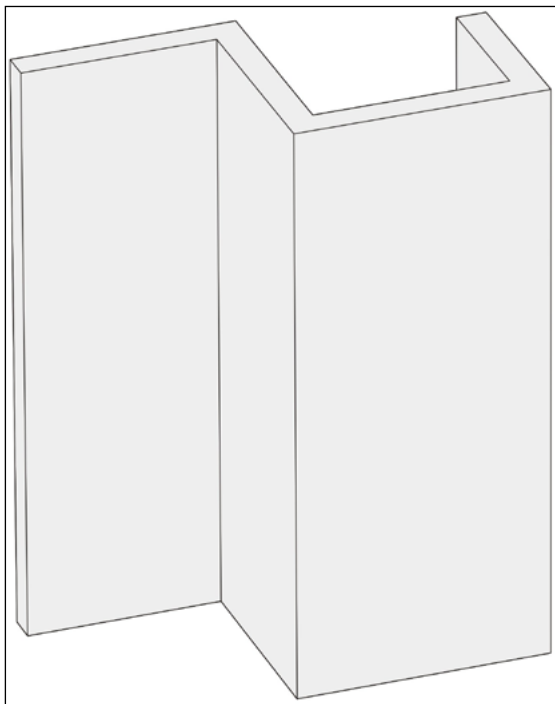


DIAGRAM 4

- 2 First start by fixing the joist onto the wall you play to install on.

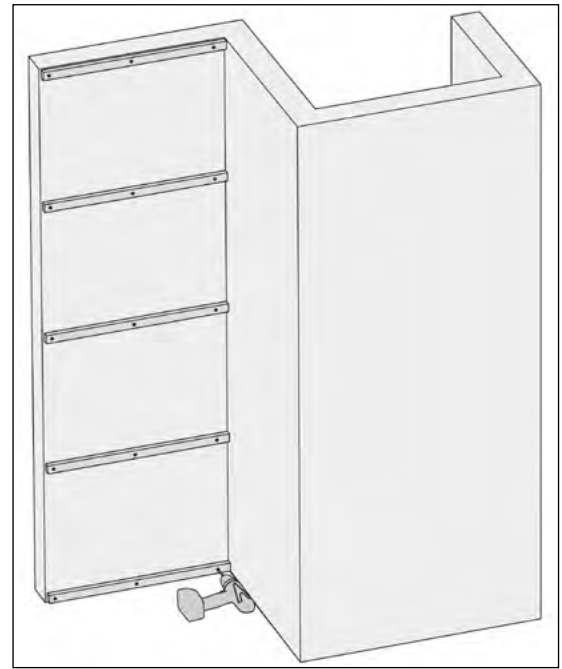


DIAGRAM 5

- 3 Next, the span needs to be measured for the next joist. Please review page 6 for the maximum span allowed from the center to center of each joist.

Diagram 6 shows the final installation.

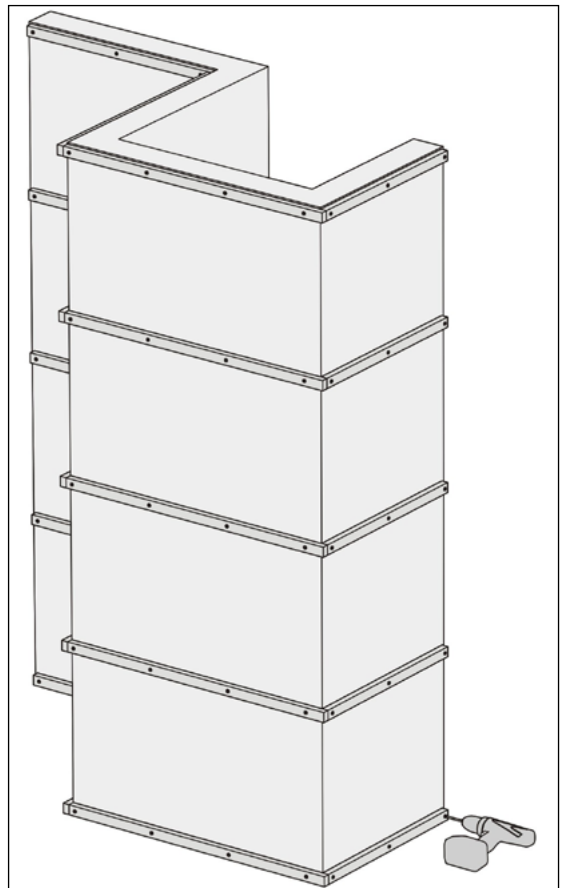


DIAGRAM 6

- 4 Install the F trim on the outer most edge as shown below in Diagram 7.

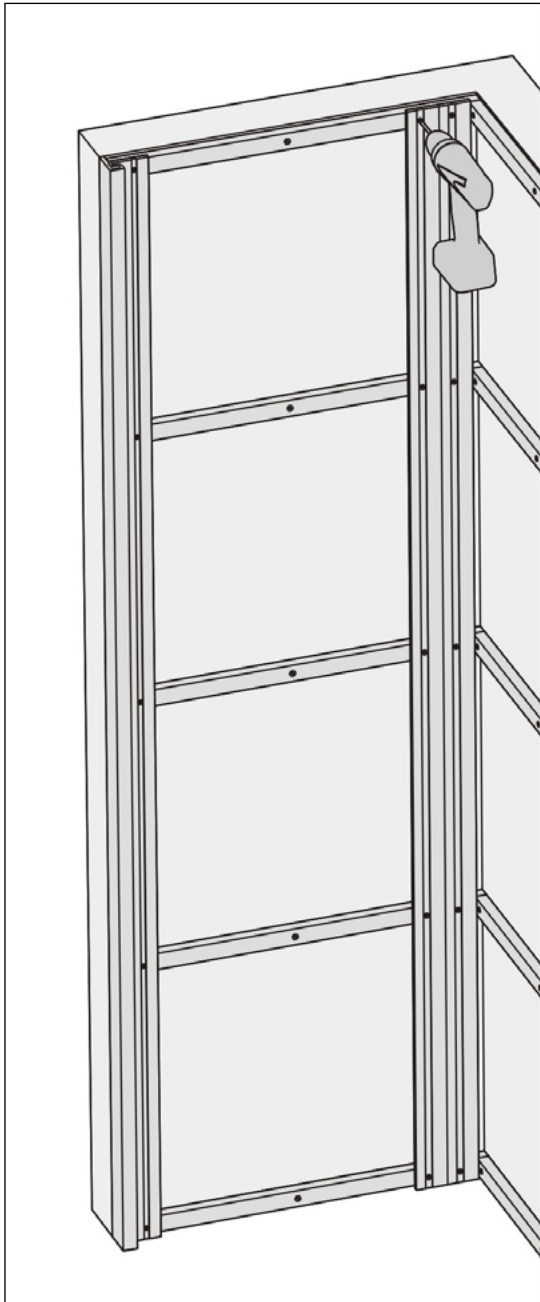


DIAGRAM 7

- 5 Now take two 23/64 x 5/16 inch (9 x 8 mm) wooden board and install it in the inside corner as shown in Diagram 8 and 9.

Note: These boards will ensure there is a backing for face fixing when finishing the cladding at the inside corner. Without these boards the screw will not be able to be face.

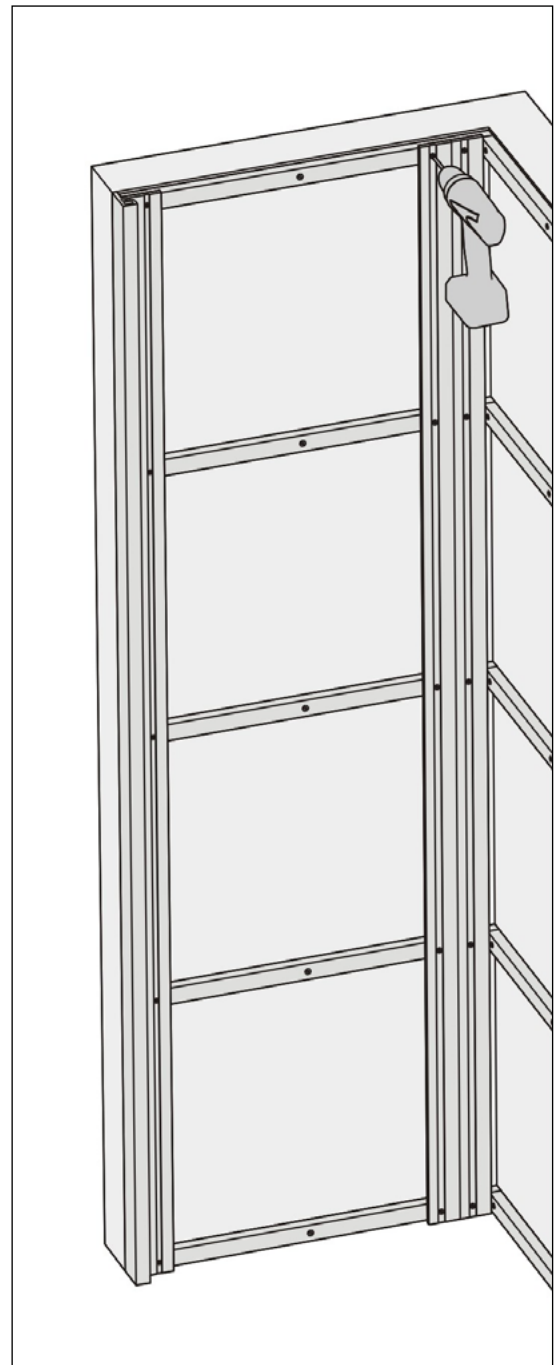


DIAGRAM 8

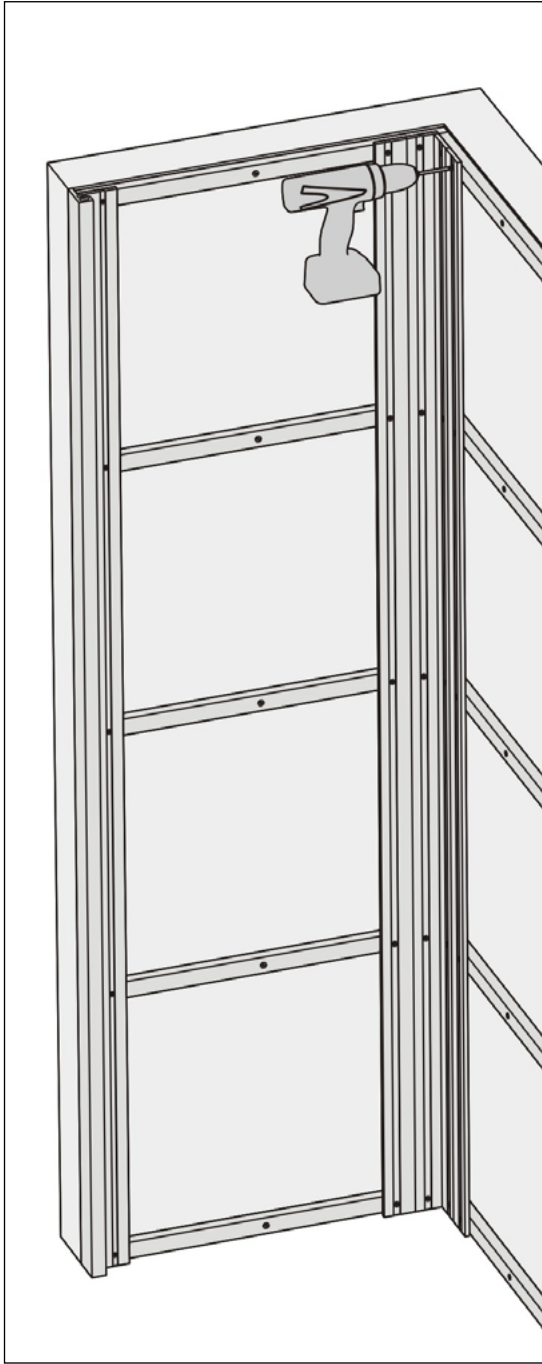


DIAGRAM 9

- 6 Take the outside corner trim and install it as shown in Diagram 10.

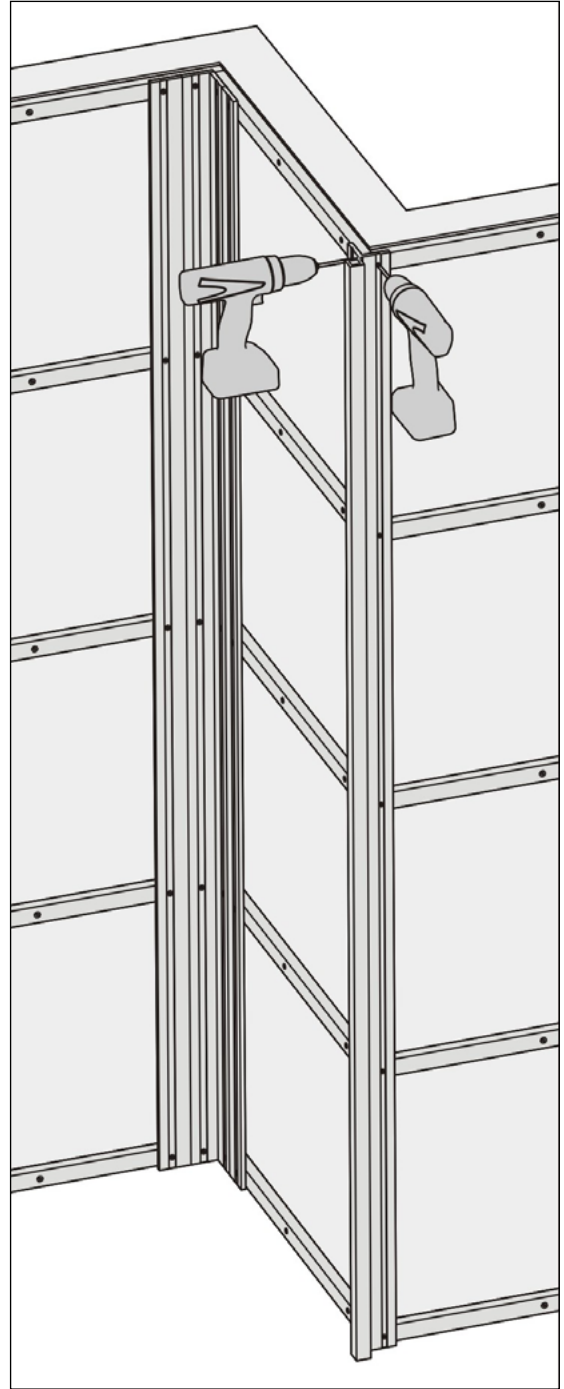


DIAGRAM 10

- 7 Take another outside corner trim and install as shown in Diagram 11.

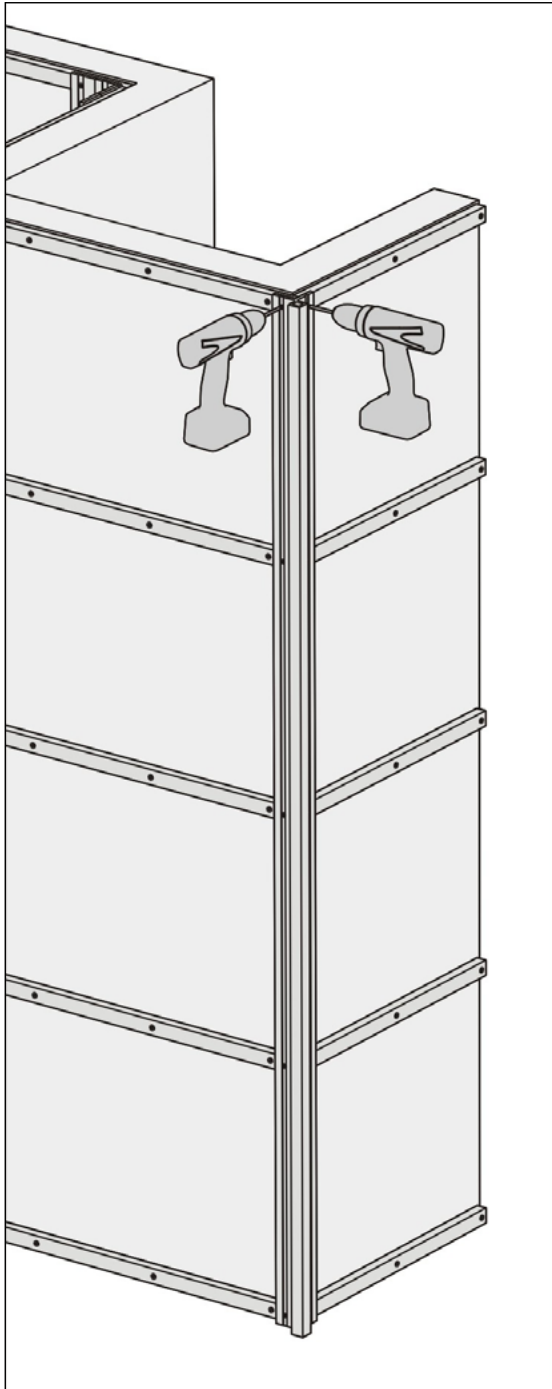


DIAGRAM 11

- 8 Lastly take another F trim and install the other outer most edge as shown in Diagram 12.

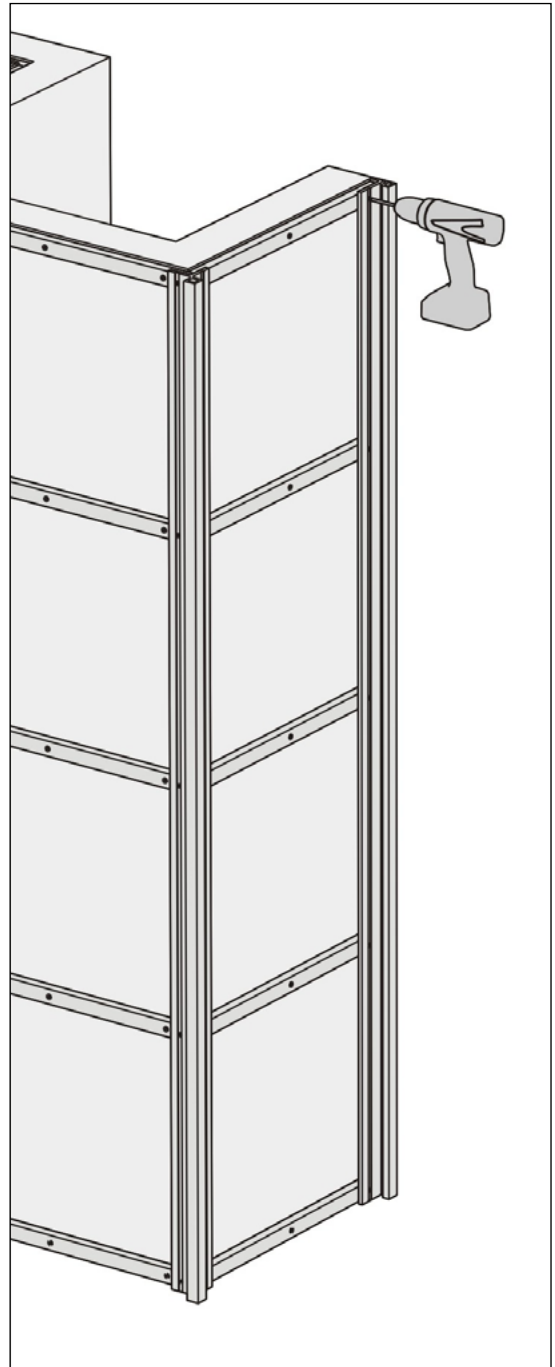


DIAGRAM 12

Installing the cladding boards

- 1 Take a cladding board and start on the wall with the outer corner trim and inside wall as shown in Diagram 13. Pre drill the cladding and face fix through the cladding and joists.

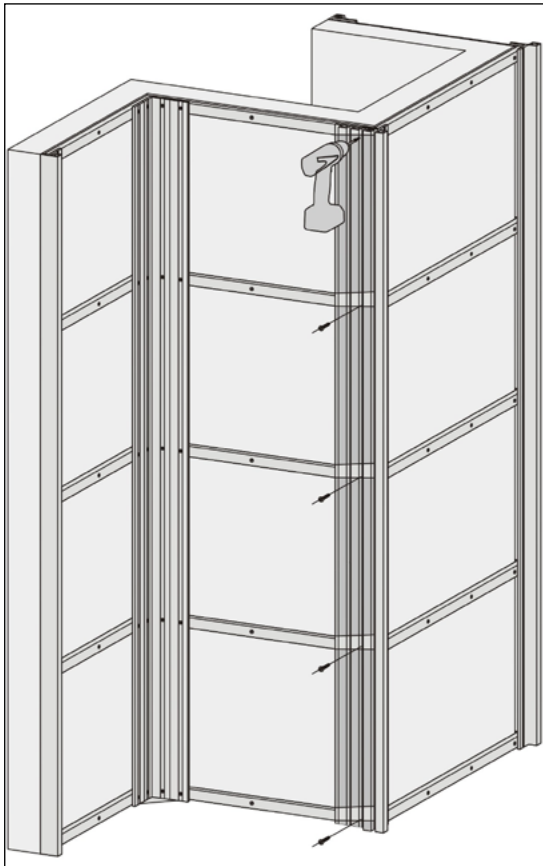


DIAGRAM 13

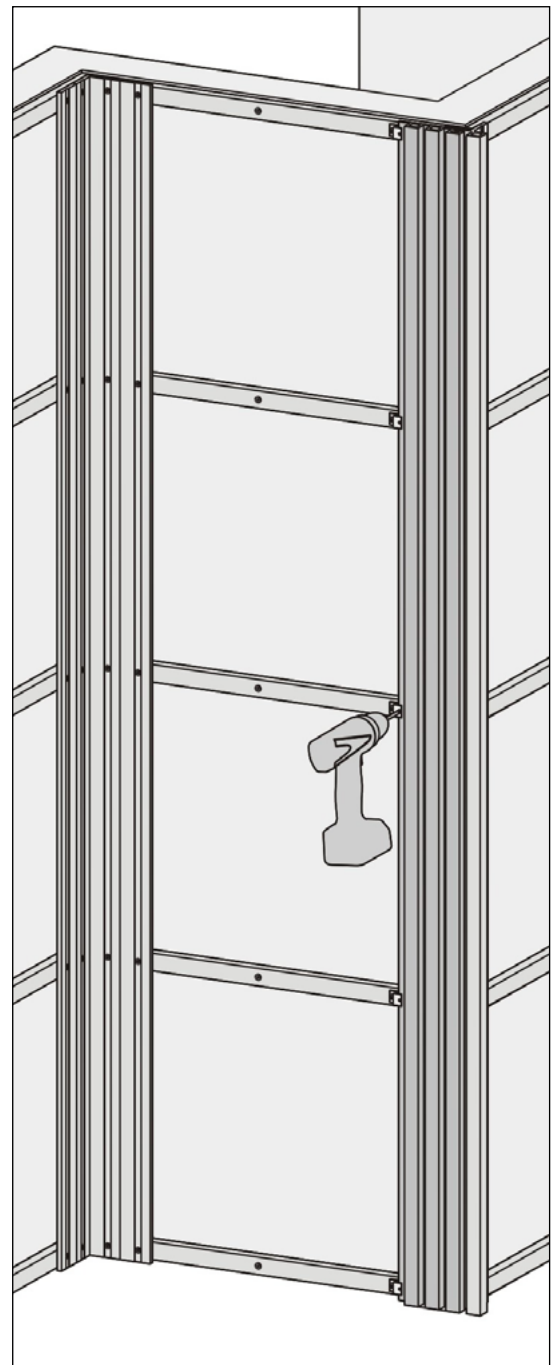


DIAGRAM 14

- 2 Next take the AW08 clips and place them on each joist and screw down to the joist.

Note: Remember for the middle AW08 clip that you must in addition screw down in the second hole provide in the clip through the board as well. This will allow it to expand and contract readily.

- 3 Continuing installing the cladding in the same fashion as step 2 until you reach the end of the wall. Once you reach the end pre drill and face fix the cladding as shown in Diagram 15.

Note: The face fix should be going through the cladding board, the wooden board, and the joist.

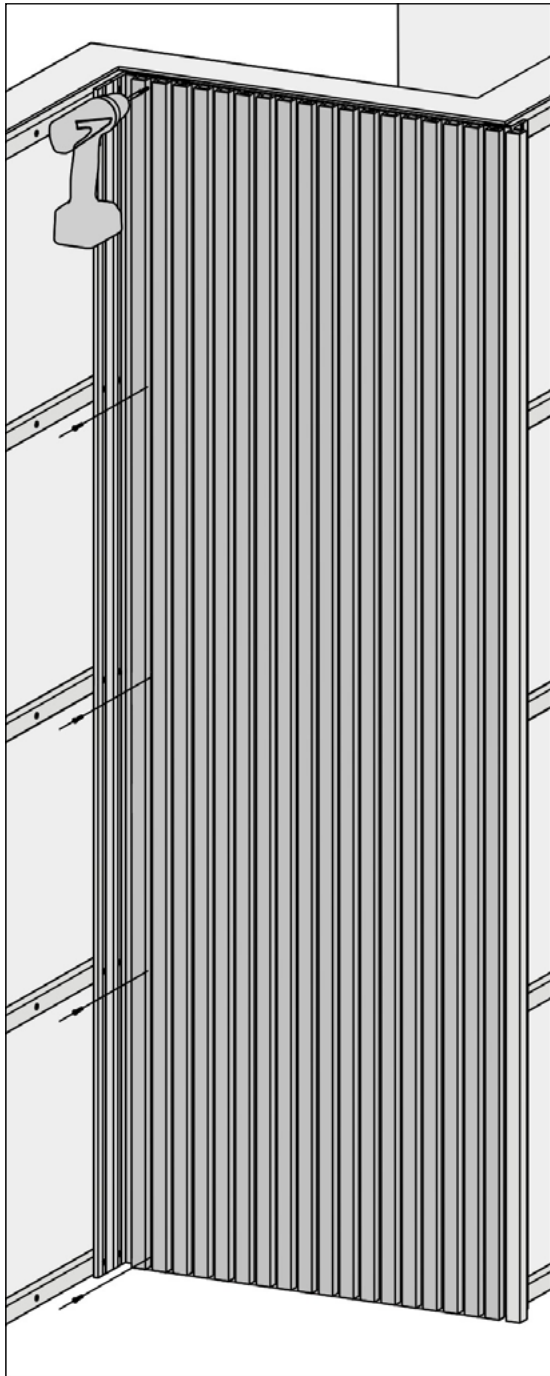


DIAGRAM 15

- 4 Repeat steps 1, 2, and 3 for the adjacent wall from outside to the inside corner as shown below in Diagram 16.

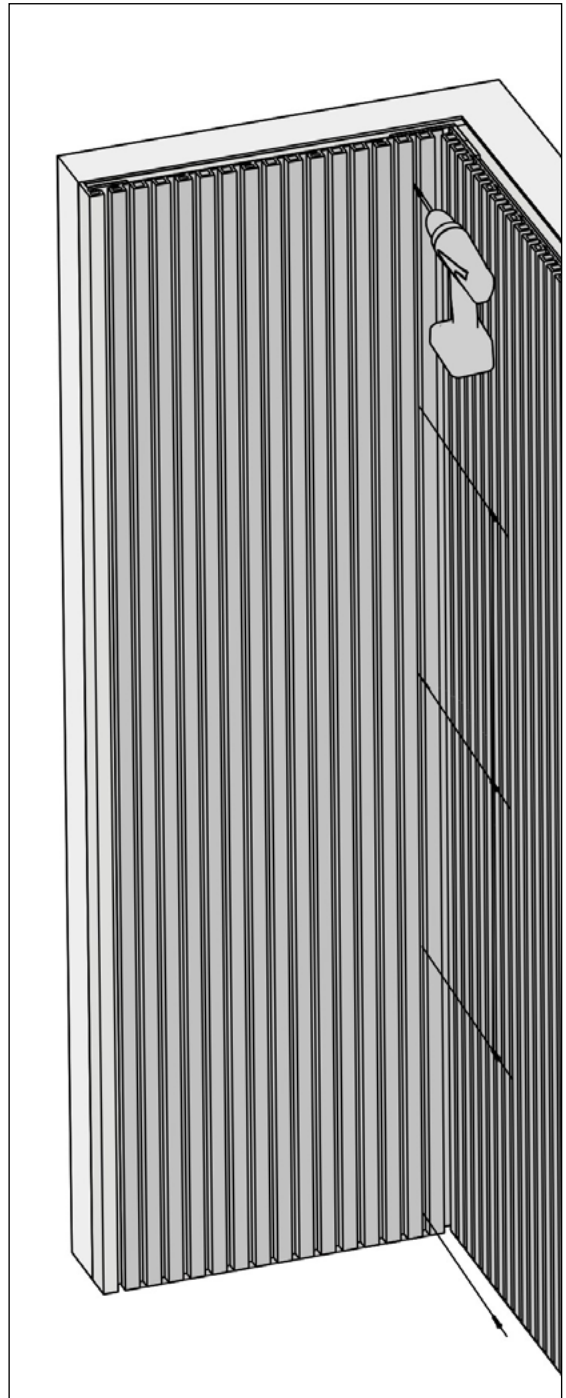


DIAGRAM 16

- 5 Repeat again step 1, 2, and 3 for the other side of the outside corner as shown below in Diagram 7.

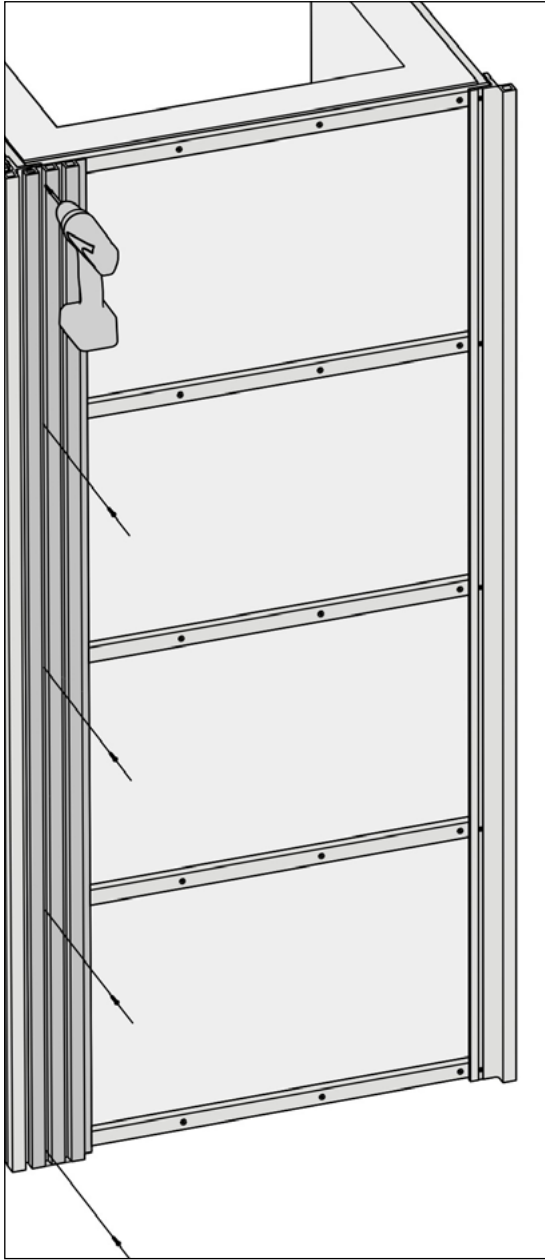


DIAGRAM 17

- 6 The finished wall should look like Diagram 18 shown below.

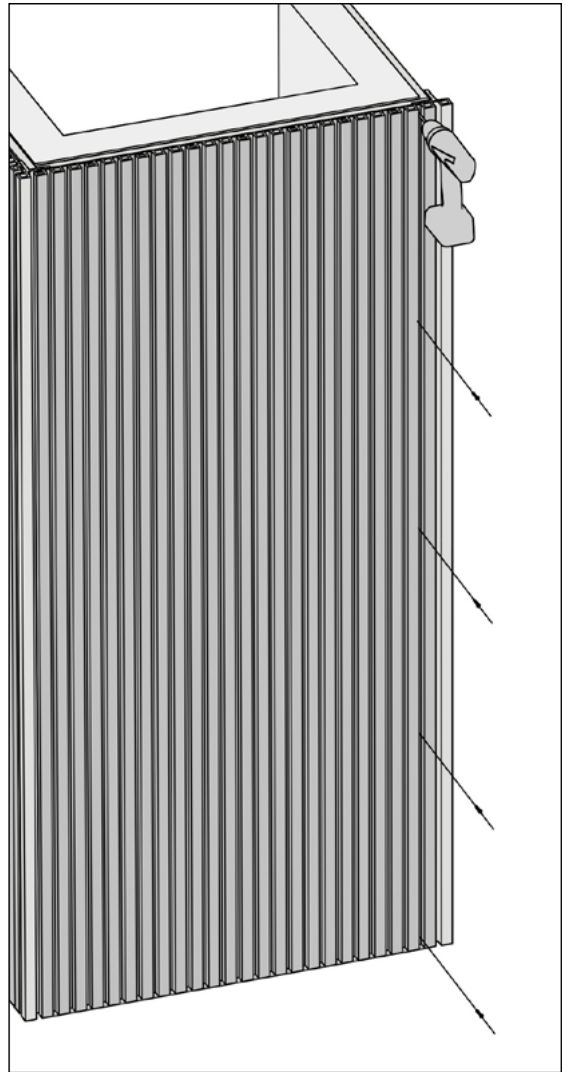


DIAGRAM 18

- 7 The finished wall should like Diagram 19 shown below.

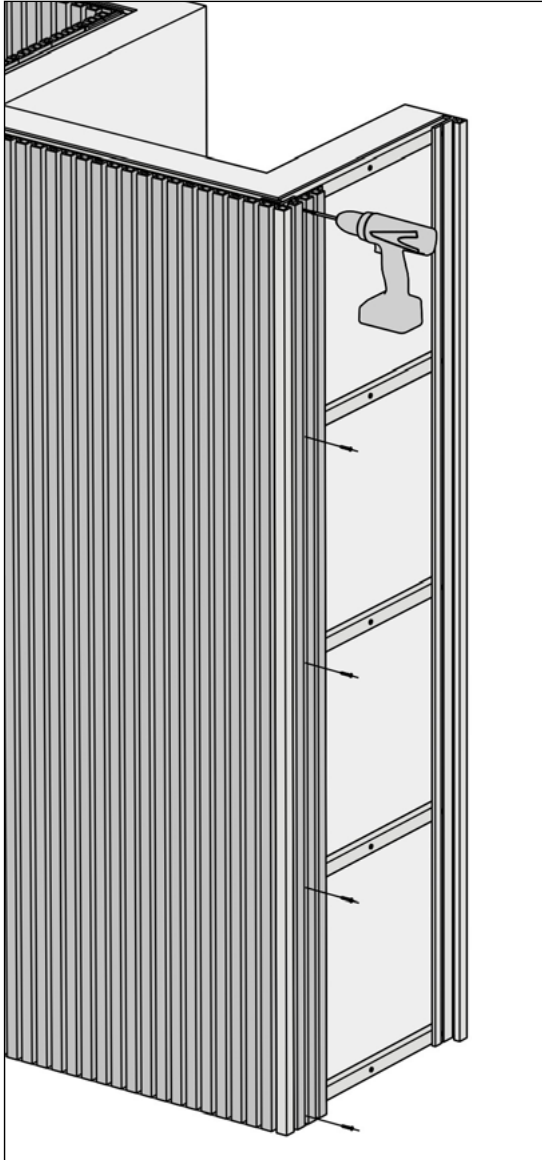


DIAGRAM 19

- 8 The finished wall should look like the following as shown in Diagram 20.

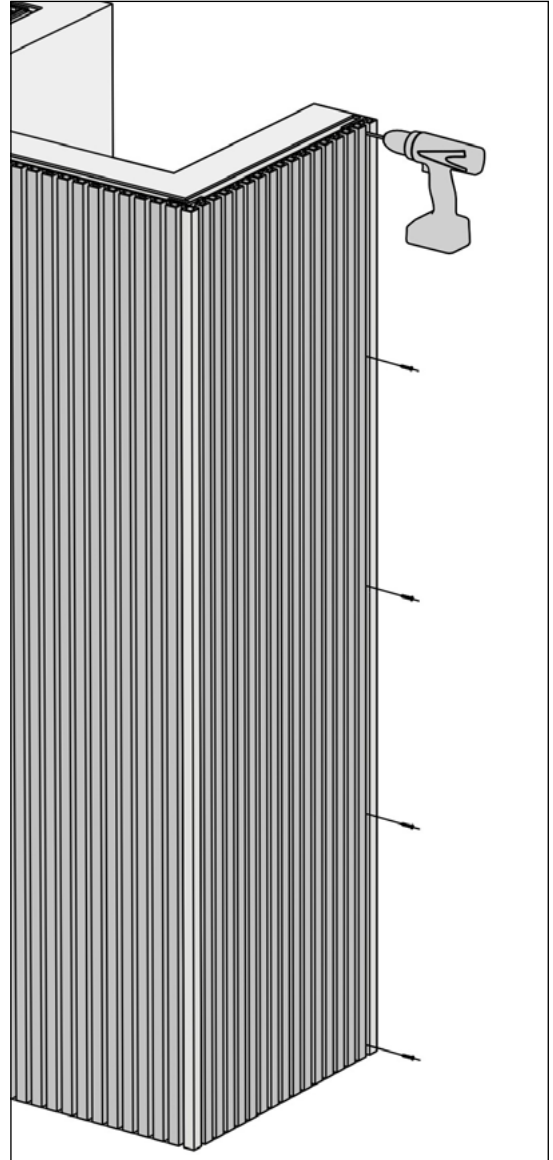


DIAGRAM 20

- 9 After completing all walls the final installation should like Diagram 21 below.

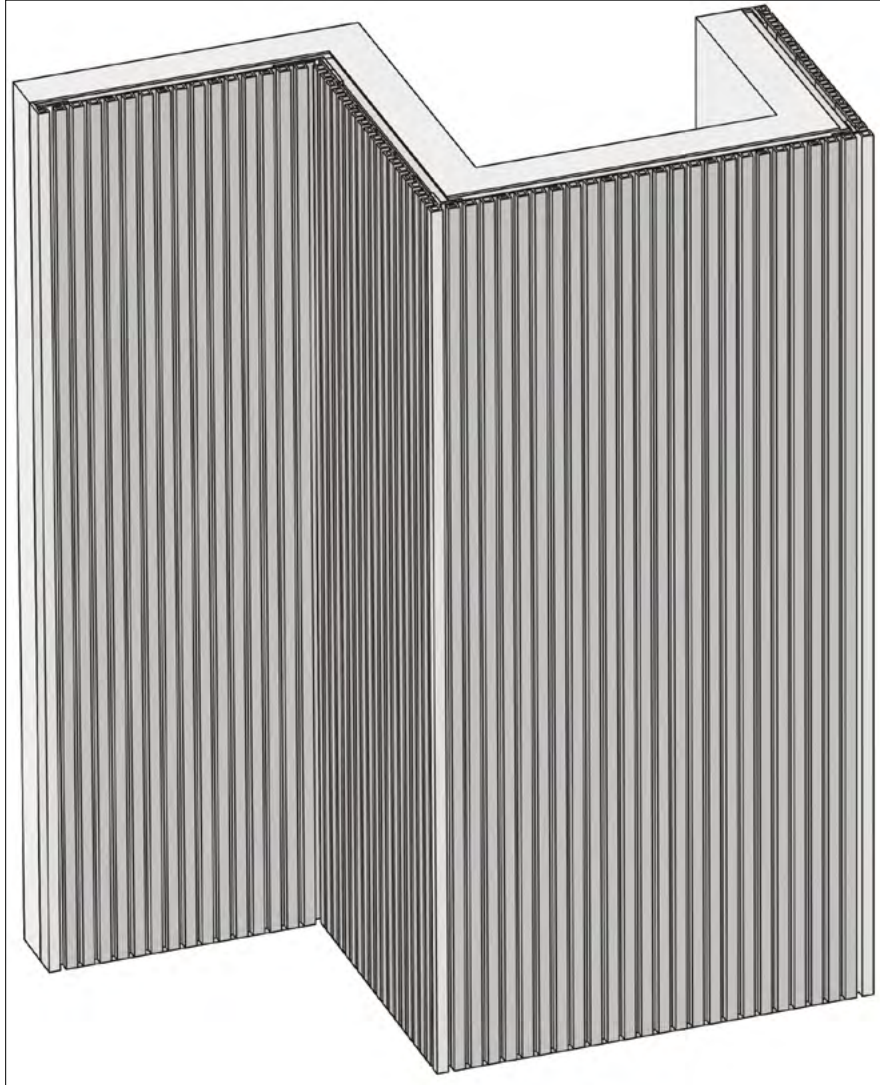


DIAGRAM 21



Castellation Cladding System Installation

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