Castellation Cladding Installation Guide

v20220125

NewTechWood

CONTENTS

Castellation Cladding - Horizontal Installation

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.

Pressure washing on a scrap piece of material before using a pressure washer on the wall cladding to ensure that your settings will not damage the Ultrashield coating.

Construction

NewTechWood UltraShield is NOT intended for use as columns, support posts, beams, joist stringers, support against a force, 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 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 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 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 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 will always work and give NewTechWood's products the best looking outcome, using other screws that are not recommended for composite could potentially damage/harm the cladding. If you are unsure which screw to use, contact your manufacturer for more information.
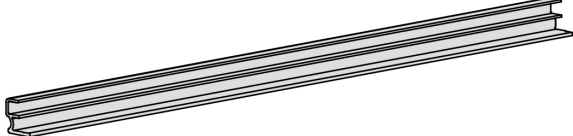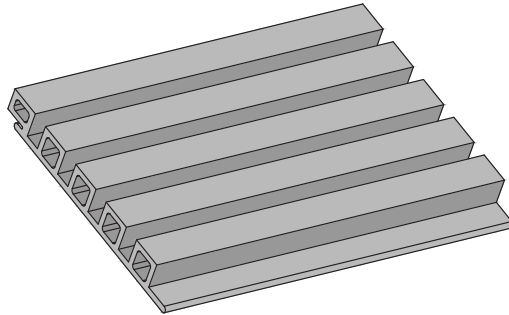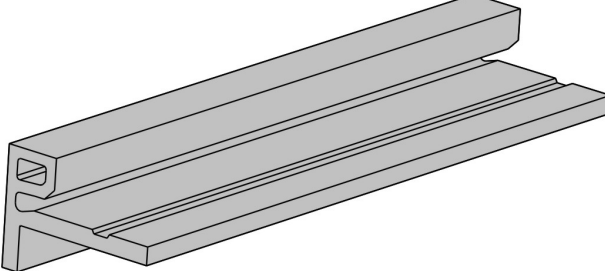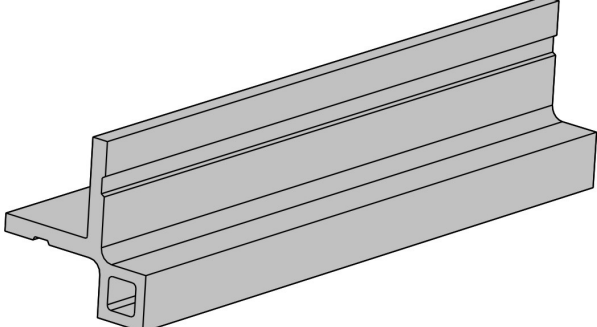
Predrill

When face fixing, it is recommended to predrill the holes slightly larger than the screw's shank size on the cladding profiles and the trims to allow for expansion and contraction response to themperature change, as shown in below diagram,

Screw's Head Size

Cladding Profiles
or
Trim

Screw's Shank Size

Predrilled Hole Size
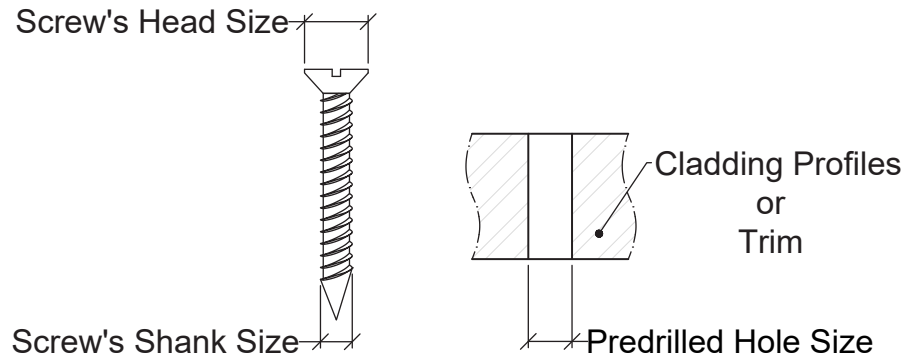
Moreover, the predrilled hole size should also be smaller than the screw head size.

Castellation Cladding Parts

Product	Purpose	Part
AW-02	Used for the installation of the first board	
AW-08	Used at every joist to fix each board to the batten	
T-7	Used on the supporting for the last board	
UH61	Castellation Cladding Board	
UH50	F-Trim, used as the first and last board	
UH51	Outside Corner Trim, used on the outside corners	

Castellation Cladding Screws
(For Wood Joists)

| Product	Purpose	Part
*M3 x 12 SS304 (Pan Head)	Used when locking the board into AW08	
*8G x 20 SS304 (Pan Head)	Used when installing AW08 into timber battens	
*8G x 20 SS304 (Flat Head)	Used when installing trims into timber battens	
*8G x 50 SS304 (Colour Head Composite Screw)	Used for face fixing the first and last boards next to trims	

Castellation Cladding Screws
(For Aluminum Joists)

Product	Purpose	Part
*M3 x 12 SS304 (Pan Head)	Used when locking the board into AW08	
*8G x 20 SS410 (Pan Head)	Used when installing AW08 into aluminum joist	
*8G x 20 SS410 (Flat Head)	Use when installing trims into aluminum joist	

*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 batten NO MORE than 500 mm on centers. 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.

Insulation

Brick

Batten

Vapour Permeable

NewTechWood UltraShield Cladding
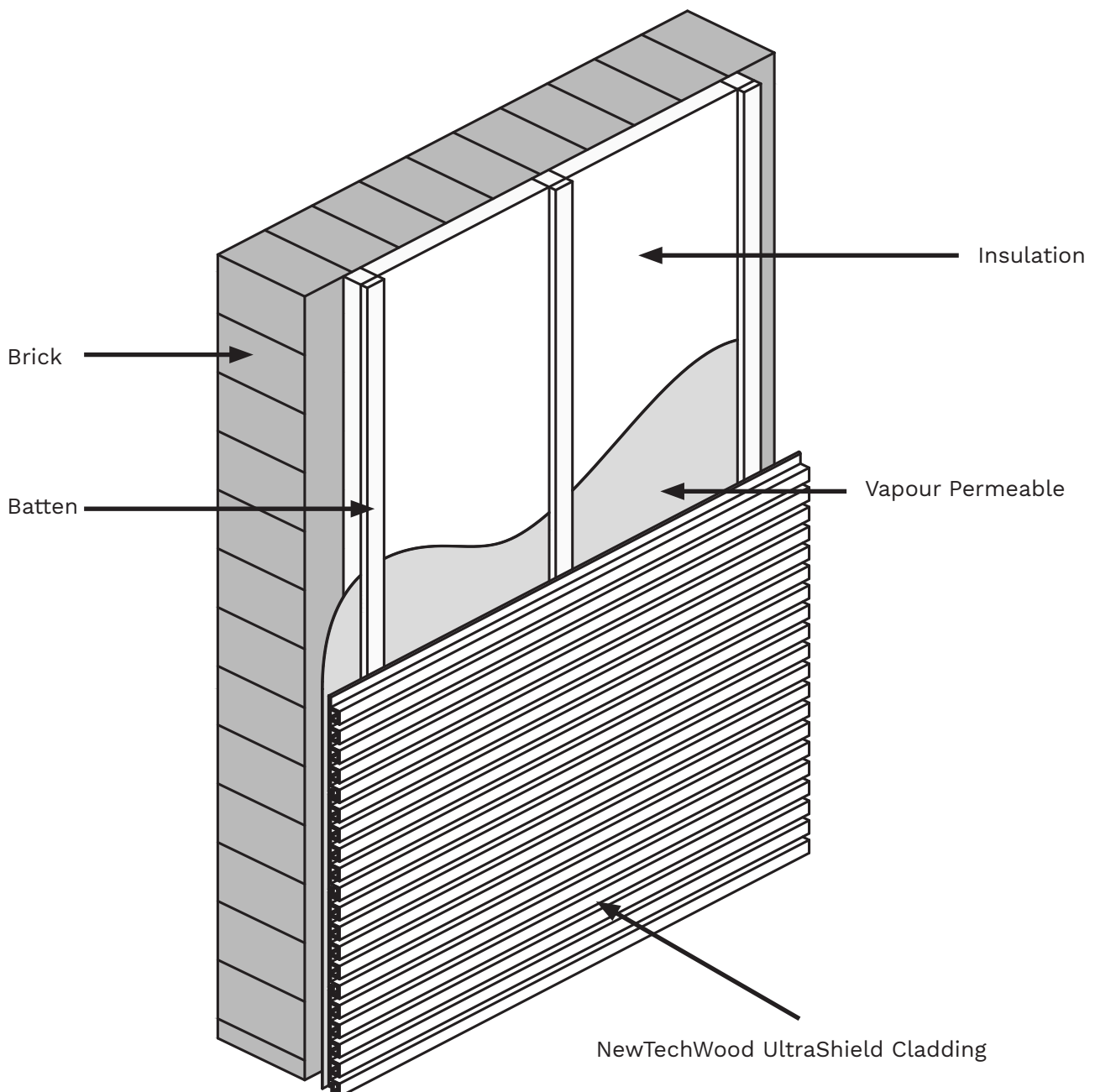
Joists Installation

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 battens. The batten needs to have a minimum thickness of 25 mm.

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

Joist

(500mm)

Horizontal Installation

(500mm)

Joist
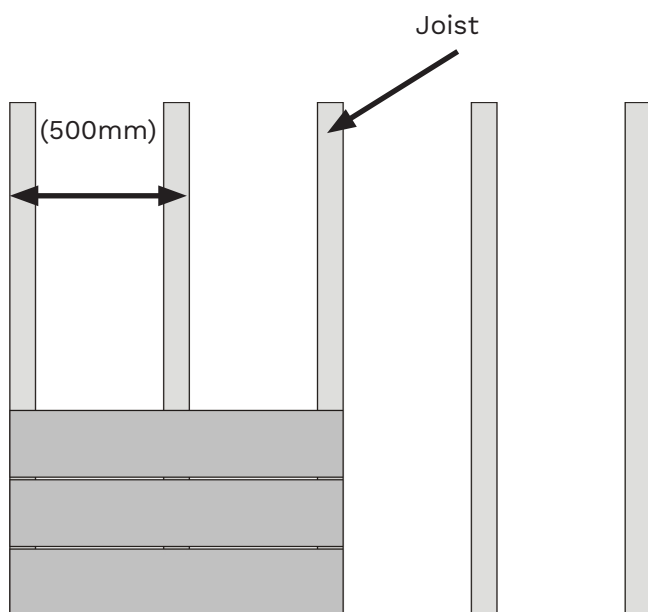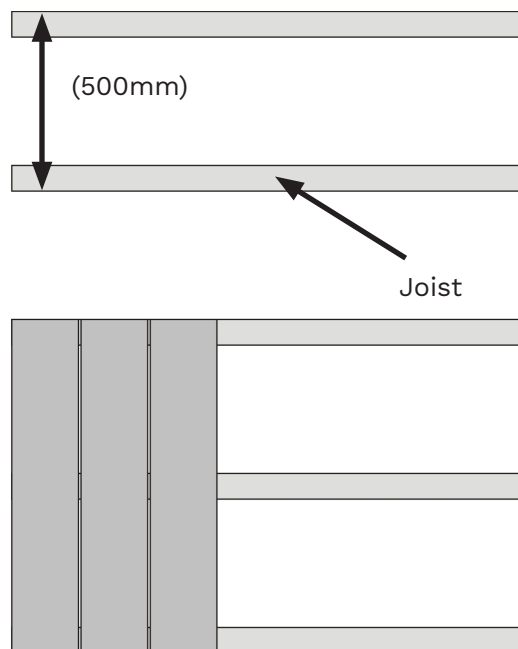
Vertical Installation

Expansion and Contraction Values

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

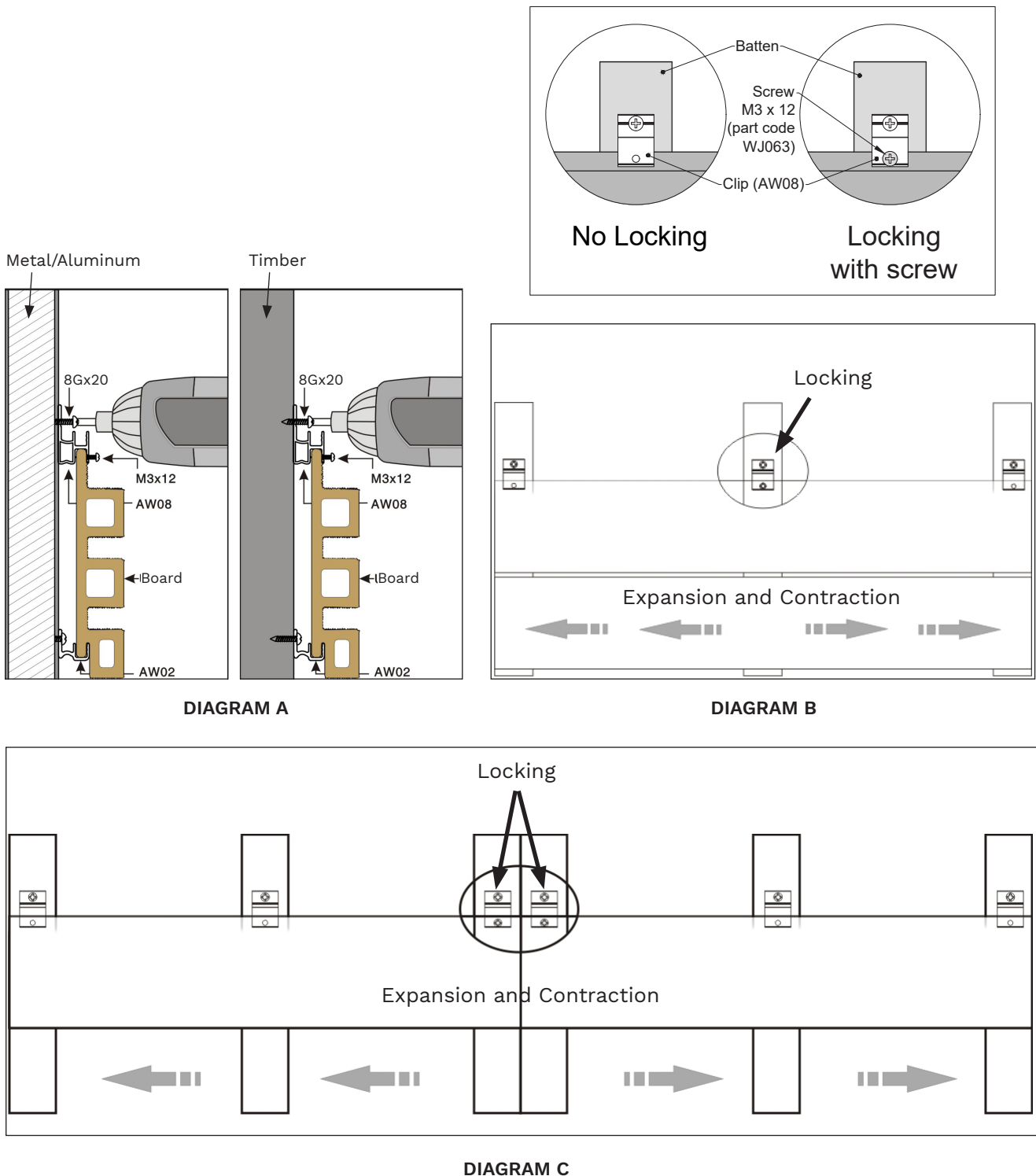| Installation Temperature (°C)	Length (Meters)								
	1	**2.44**	**2.8**	**3**	**3.66**	**4**	**4.88**	**5.4**	
0	1.4	3.4	3.9	4.2	5.1	5.6	6.8	7.6	
5	1.2	2.9	3.4	3.6	4.4	4.8	5.9	6.5	
10	1.0	2.4	2.8	3.0	3.7	4.0	4.9	5.4	
15	0.8	2.0	2.2	2.4	2.9	3.2	3.9	4.3	Gap (mm)
20	0.6	1.5	1.7	1.8	2.2	2.4	2.9	3.2	
25	0.4	1.0	1.1	1.2	1.5	1.6	2.0	2.2	
30	0.2	0.5	0.6	0.6	0.7	0.8	1.0	1.1	

Please Note:

1. The above table shows the overall gap required. If boards have a gap at each end, then halve the value shown.

2. 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.

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, **ONLY ONE LOCKING SCREW USED PER BOARD**, and then allow the board to expand and contract readily in the other direction.

You can see how we lock the board in *Diagram A*, *B*, and *C*.

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

Batten

Screw M3 x 12 (part code WJ063)

Clip (AW08)

No Locking

Locking with screw

Metal/Aluminum

Timber

8Gx20

8Gx20

M3x12

AW08

Board

AW02

M3x12

AW08

Board

AW02

DIAGRAM A

Locking

Expansion and Contraction

DIAGRAM B

Locking

Expansion and Contraction

DIAGRAM C

Castellation Cladding - Vertical Installation

Installation Procedure

Step 1: Framing
  - **Measure and Chalk the battens**
  - **Battens Installation**

Step 2: Trim Installation

Step 3: Cladding Board Installation
  - **Installing the First course**
  - **Installing the Second course**
  - **Continuing the remaining installation**
  - **Installing the Last board**

1 Framing

The frame needs to be level before installing the cladding boards. **_Diagram 1_** shows the wall replicating different scenarios potentially occuring when installing the cladding boards.

Wall Side A: Cladding between the F-Trim (UH50) and the Inside Corner
Wall Side B: Cladding between the Inside Corner and the Outside Corner Trim (UH51)
Wall Side C: Cladding between two Outside Corner Trims (UH51)
Wall Side D: Cladding between the Outside Corner Trim (UH51) and the F-Trim (UH50)
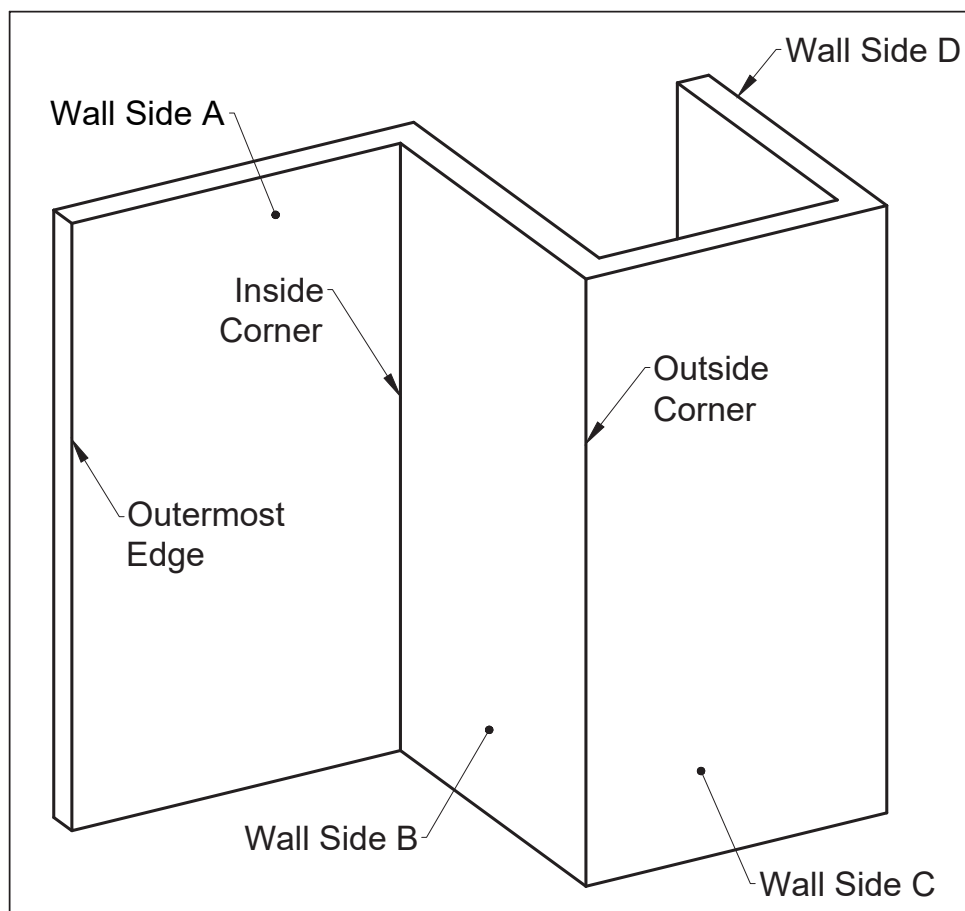
Diagram 1

2 Measure and chalk the joists according to the span data specified on ***page 11*** of this installation guide, as shown in ***Diagram 2***.
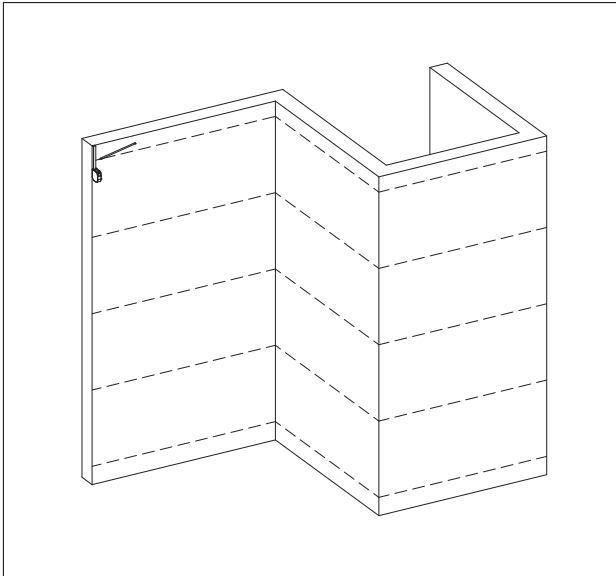
Diagram 2

Please Note:

1. We are using wood joists for this installation. If you are using aluminum joists, please refer to *page 9* of this installation guide for the correct recommended screws.

2. An adequate span between the joists is required to keep the boards from bending. Please review *page 11* of this installation guide to see what span is needed

3 Fix the joists onto the wall that you intend to install with screws. Please review ***page 11*** to see what span is needed, as shown in ***Diagram 3***.
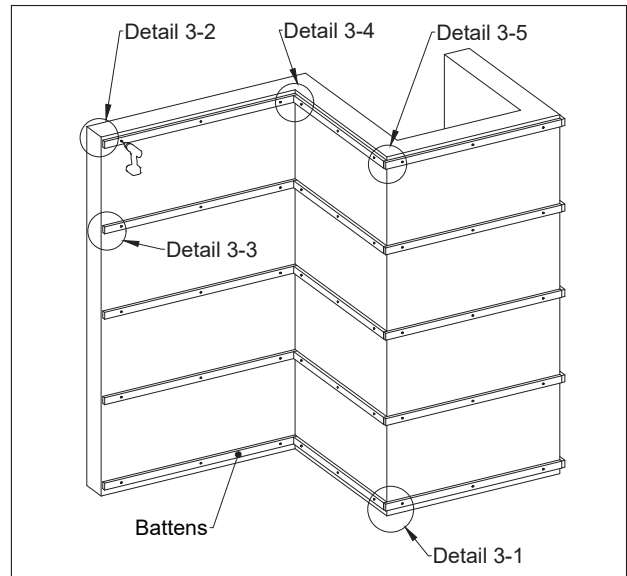
Diagram 3

Please Note:

1. A minimum clearance of 40mm needs to be left between the lowest joist and the floor, as shown in *Detail 3-1*.
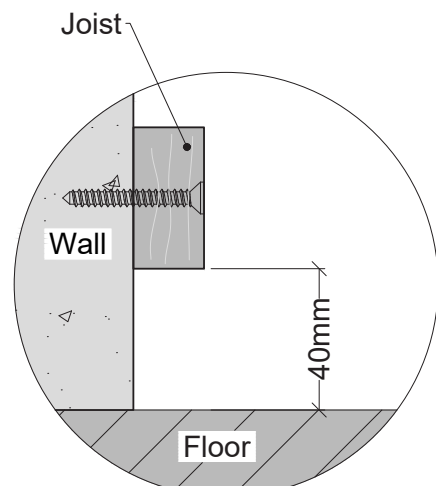
Detail 3-1

Please Note:

2. A minimum clearance of 10mm needs to be left between the ceiling and the top of the joists, as shown in *Detail 3-2*.
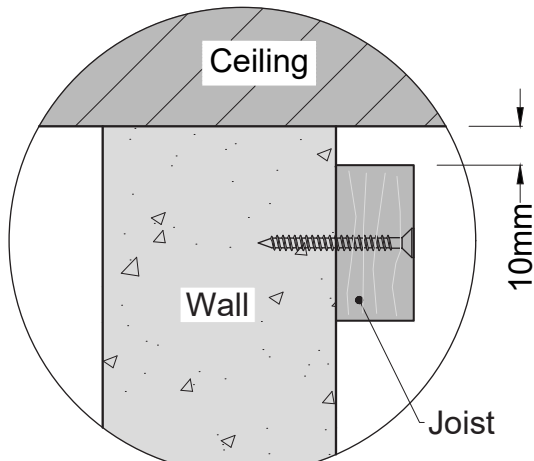
Detail 3-2

Please Note:

3. For the Outermost Edge (F-Trim UH50), please install according to *Detail 3-3*.

4. For the Inside Corner (No trim is needed), please install according to *Detail 3-4*.

5. For the Outside Corner (Outside Corner trim UH51), please install according to *Detail 3-5*.
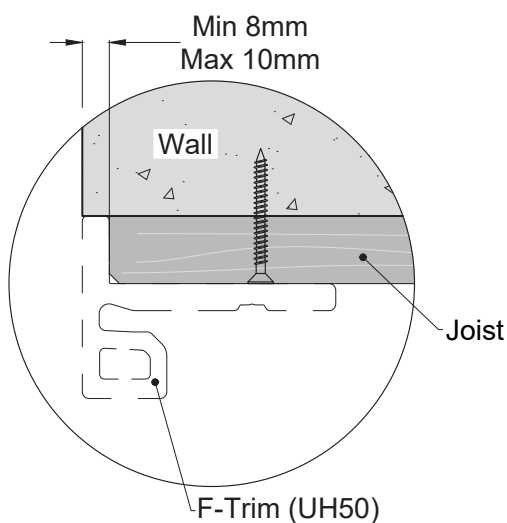
Detail 3-3
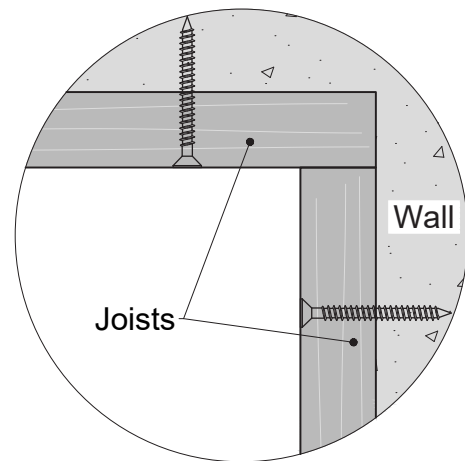
Detail 3-4
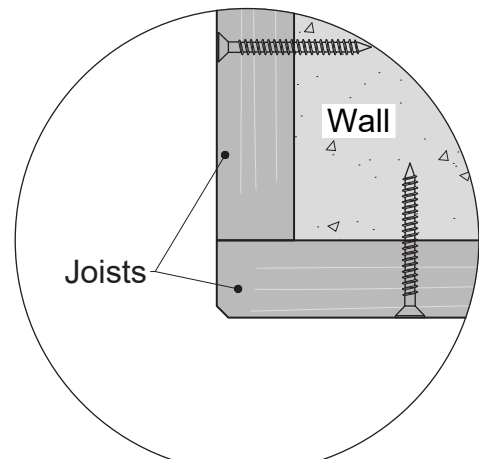
Detail 3-5

4 Trim Installation

Fasten the F-Trim (UH50) onto the outermost edges and the Outside Corner Trim (UH51) onto the outside corners with screws, as shown in **_Diagram 4_**.
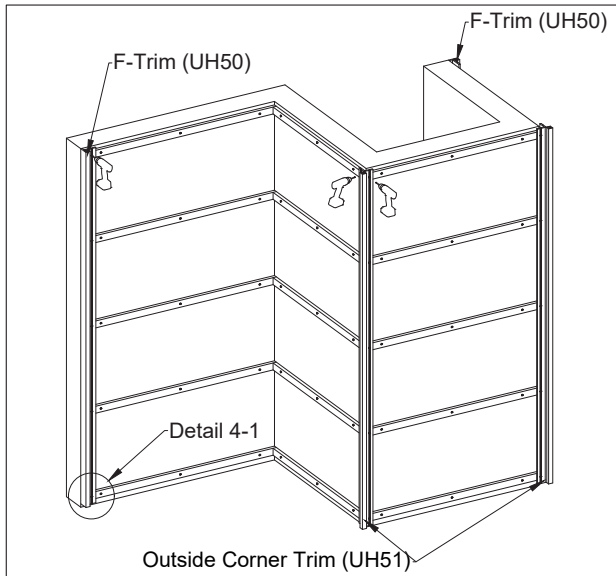
Diagram 4

Please Note:
1. A minimum clearance of 20mm needs to be left between the trims and the floor, as shown in _Detail 4-1_.
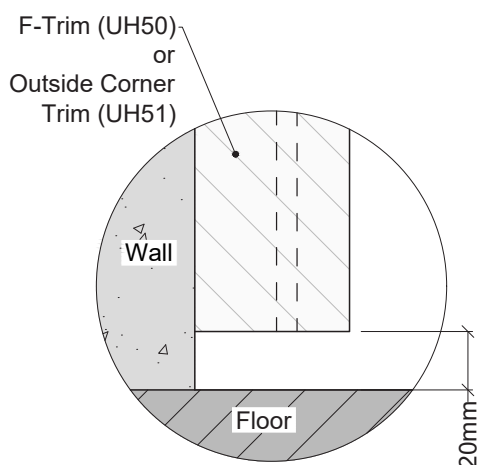
Detail 4-1

5 Cladding Board Installation

It is recommended to start the installation according to the **_Diagram 5_**.
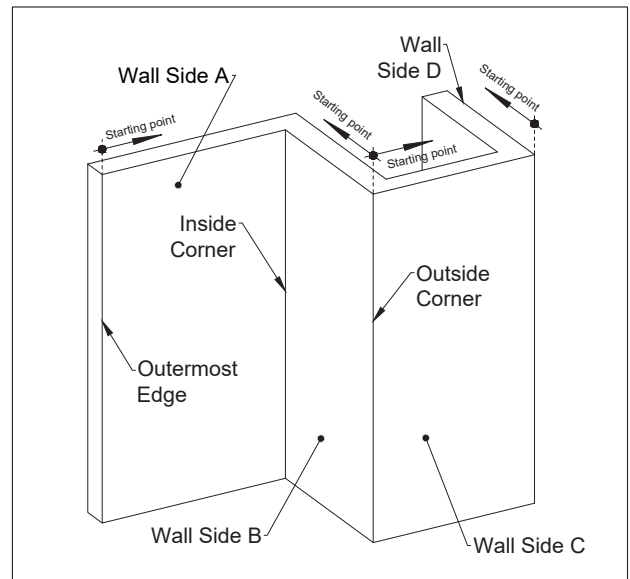
Diagram 5

Please Note:

1. Wall Side A: Cladding between the F-Trim (UH50 and the Inside Corner,
- Start from the Outermost Edge.

2. Wall Side B: Cladding between the Inside Corner and the Outside Corner Trim (UH51),
- Start from the Outside Corner.

3. Wall Side C: Cladding between two Outside Corner Trim (UH51),
- Start from ont of the Outside Corners.

4. Wall Side D: Cladding between the Outside Corner Trim (UH51 and the F-Trim (UH50),
- Start from the Outside Corner.

6 Installing the First course at the Inside Corner
- Wall Side A (Cladding between the F-Trim (UH50) and the Inside Corner
- Wall Side B (Cladding between the Inside Corner and the Outside Corner trim (UH51)

Put the first Castellation Cladding Board (UH61) in place, then face fix it the side next to the trim onto the joist with screws and fasten it's another side onto the joist with Clip (AW08), as shown in **Diagram 6**.
Outermost Edge (F-Trim UH50), as shown in **Detail 6-1**.
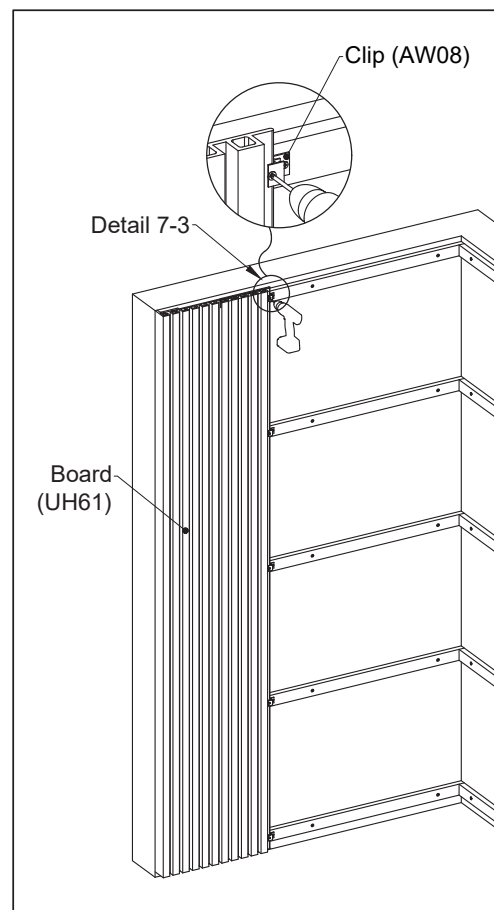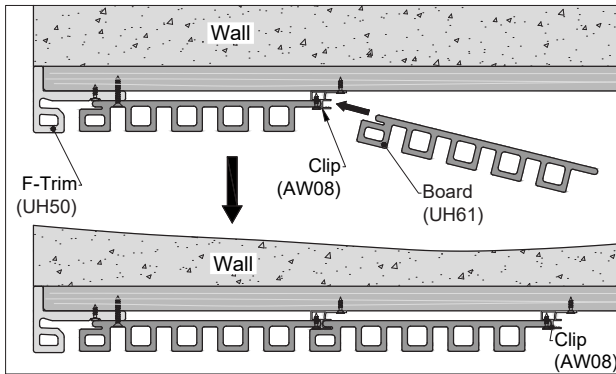Outside Corner (Outside Corner Trim UH51), as shown in **Detail 6-2**.
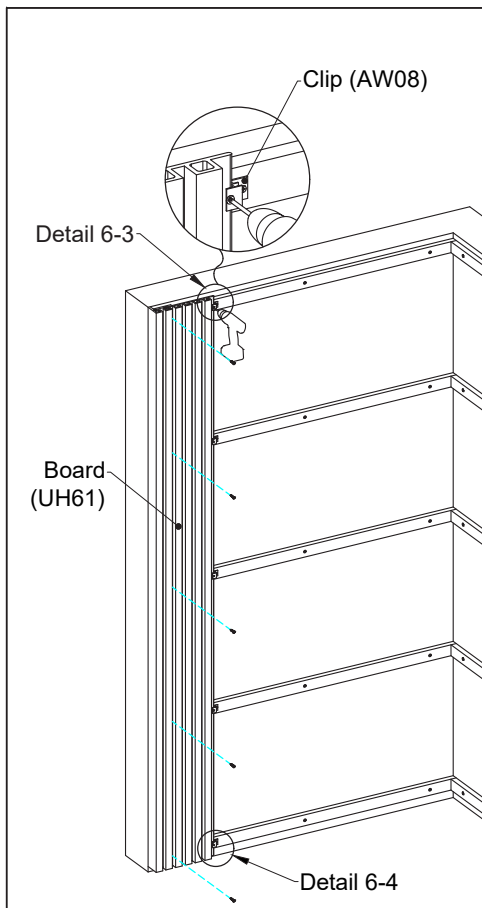
Detail 6-1

Diagram 6

Detail 6-2

Please Note:

Pre-drill the face fixing holes on the first board before installation to allow for expansion and contraction. Please review page 6**, "Predrill", of this installation guide for further information.**
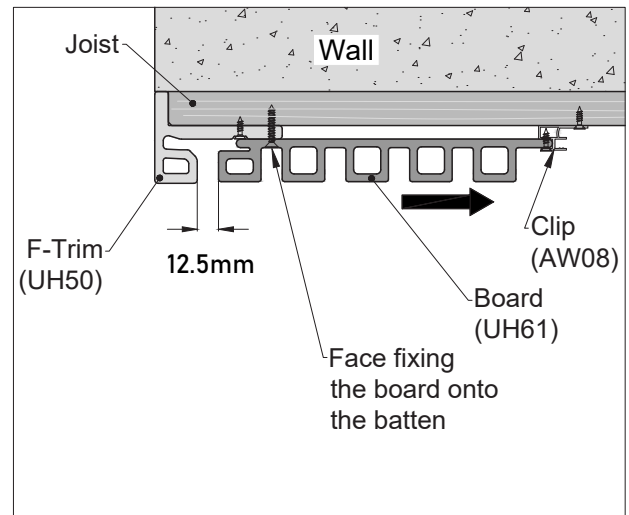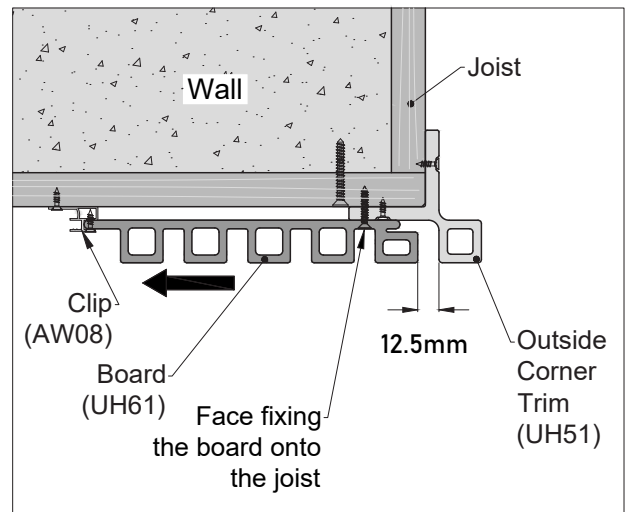
Please Note:
1. Since the composite wood must allow for expansion and contraction due to temperature change, the board must be locked at one fixed point but only one point to allow the remaining board to move freely. When installing vertically, it is required to lock the Clip (AW08) at the top of each board, as shown in *Detail 6-3*.

DO NOT LOCK any other Clip (AW08) for the same board.
Please review *page 13*, **"***Locking the Wall Cladding Board***" of this installation guide for further information.**

Locking the Clip (AW08) at the top of each board

Clip (AW08)
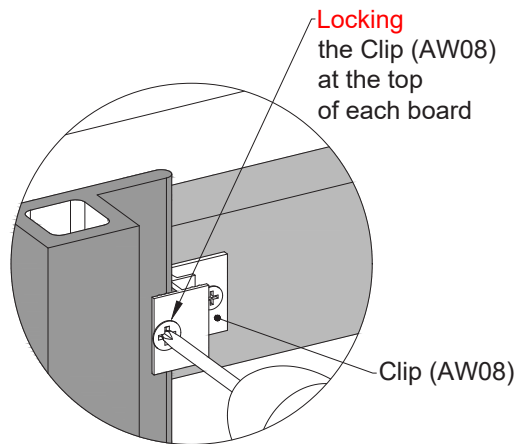
ONLY ONE LOCKING SCREW TO BE USED PER BOARD

Detail 6-3

Please Note:

Allow a gap of at least 20mm between the floor and the Cladding board, as shown in Detail 6-4

Clip (AW08)

Board

Wall

Floor

20mm
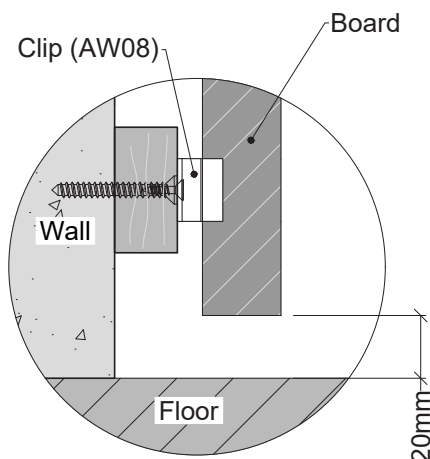
Detail 6-4

7 Installing the Second course at the Inside Corner
- Wall Side A (Cladding between the F-Trim (UH50) and the Inside Corner
- Wall Side B (Cladding between the Inside Corner and the Outside Corner trim (UH51)

Put the second Castellation Cladding Board (UH61) over the first board's Clip (AW08) and fasten it's another side onto the joist with the Clip (AW08), as shown in *Diagram 7*.
Outermost Edge (F-Trim UH50), as shown in *Detail 7-1*.
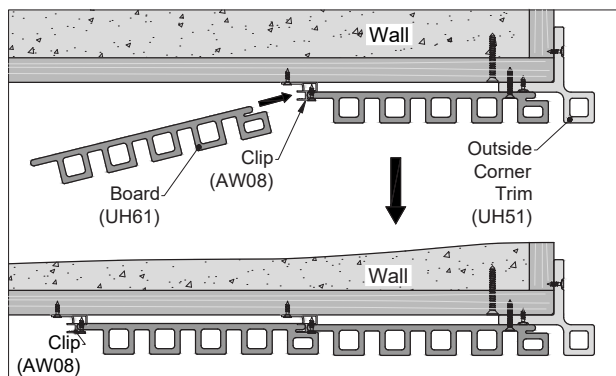**Outside Corner** (Outside Corner Trim UH51), as shown in *Detail 7-2*.

Clip (AW08)

Detail 7-3

Board (UH61)

Diagram 7

Outermost Edge (F-Trim UH50), as shown in *Detail 7-1*.

Detail 7-1

Outside Corner (Outside Corner Trim UH51), as shown in *Detail 7-2*.

Detail 7-2

Please Note:

1. Since the composite wood must allow for expansion and contraction due to temperature change, the board must be locked at one fixed point but only one point to allow the remaining board to move freely. When installing vertically, it is required to lock the Clip (AW08) at the top of each board, as shown in *Detail 7-3*.

DO NOT LOCK any other Clip (AW08) for the same board.
Please review *page 13*, **"***Locking the Wall Cladding Board***" of this installation guide for further information.**
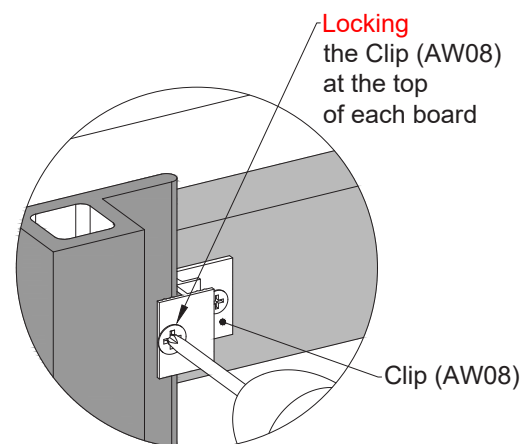
ONLY ONE LOCKING SCREW
TO BE USED PER BOARD

Detail 7-3

8 When you are at the last cladding board that the installation is toward the inside corner from the F-Trim (UH50), measure and record the distance between the adjacent joist and the Clip (AW08), as shown in *__Diagram 8__* and *__Detail 8-1__*.
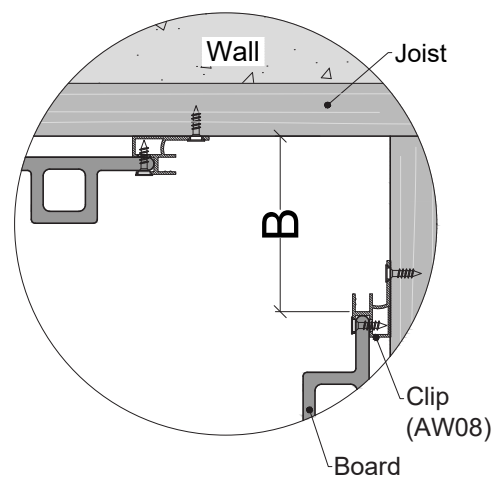
Detail 8-1

Diagram 8

Clip (AW08)   Joist

Board

Wall

A
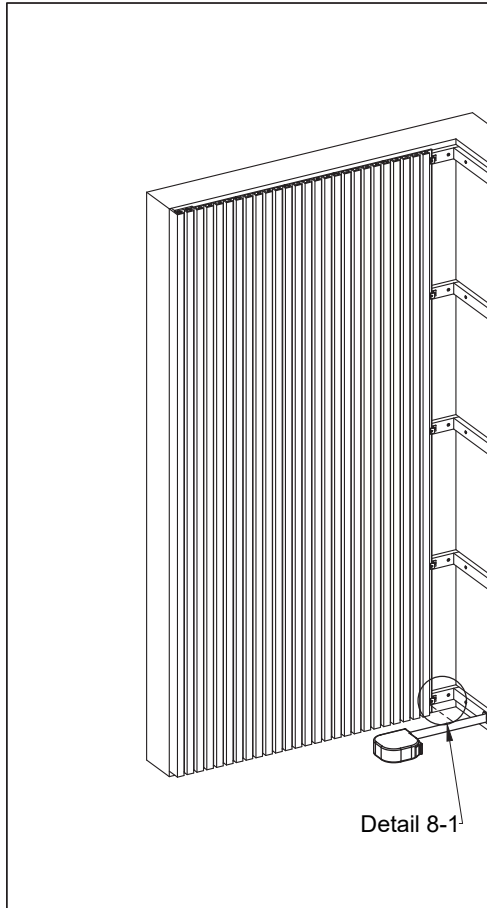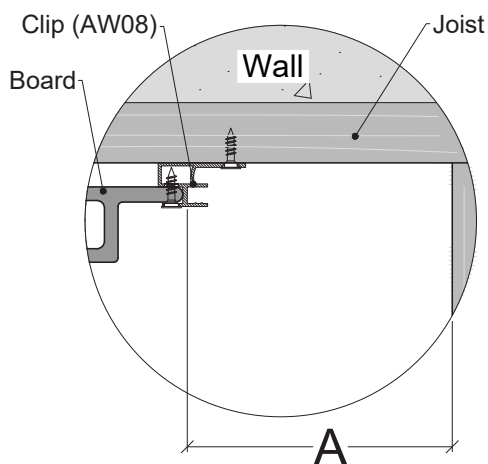
Detail 8-1

9 When you are at the last cladding board that the installation is toward the inside corner from the Ouside Corner Trim (UH51), measure and record the distance between the adjacent joist and the Clip (AW08), as shown in *__Diagram 9__* and *__Detail 9-1.__*

Detail 9-1

Diagram 9

Wall   Joist

B

Clip (AW08)

Board
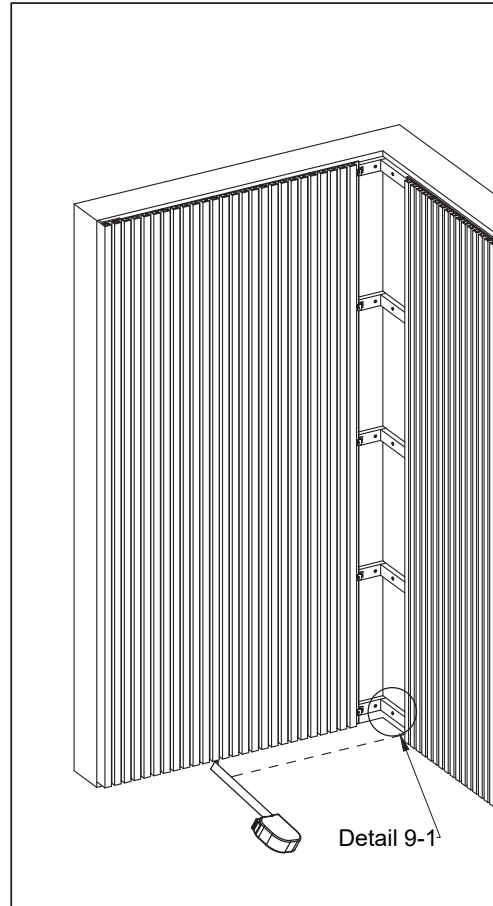
Detail 9-1

10 Put a 90 degree metal flashing (Black powder-coated) in the inside corner and secure it onto the joists with screws, as shown in ***Diagram 10***.

90° Flashing (Black powder coated)
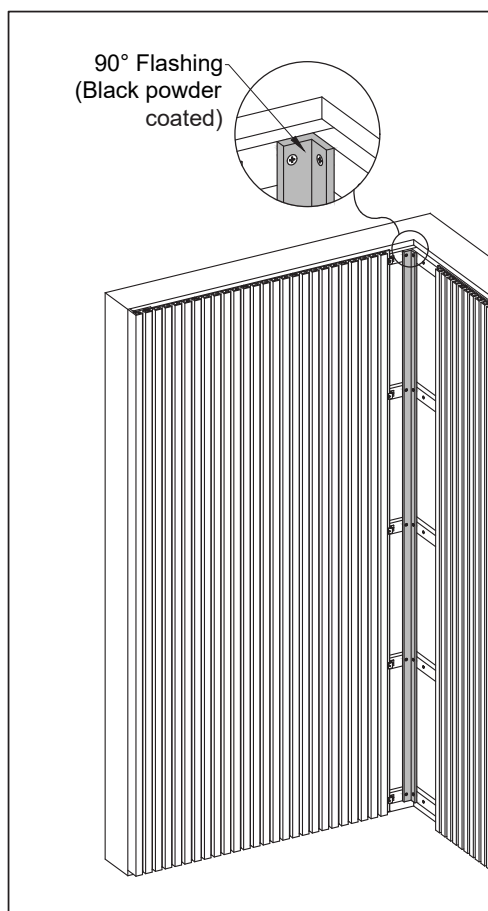
Diagram 10

11 Fasten the Stoppers (T-7) beside the both sides of the 90 degree metal flashing, as shown in ***Diagram 11-1*** and ***Diagram 11-2***.

90° Flashing (Black powder coating)
Rubber Stopper T-7
Joist

Diagram 11-1

90° Flashing (Black powder coating)
Joist
Rubber Stopper T-7

Diagram 11-2

NewTechWood®
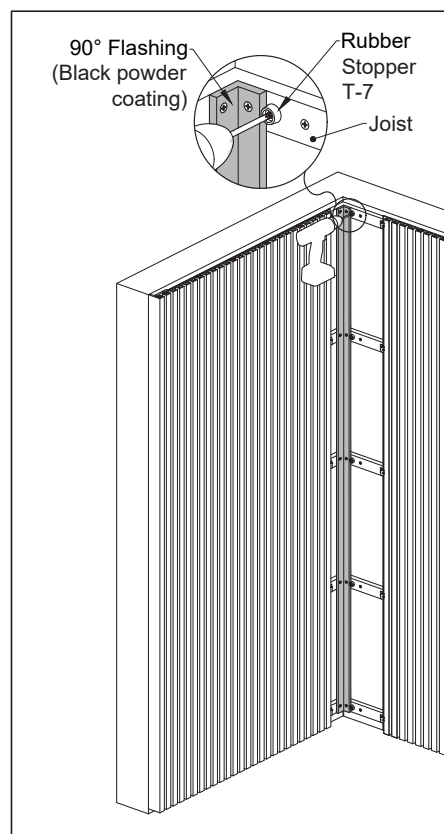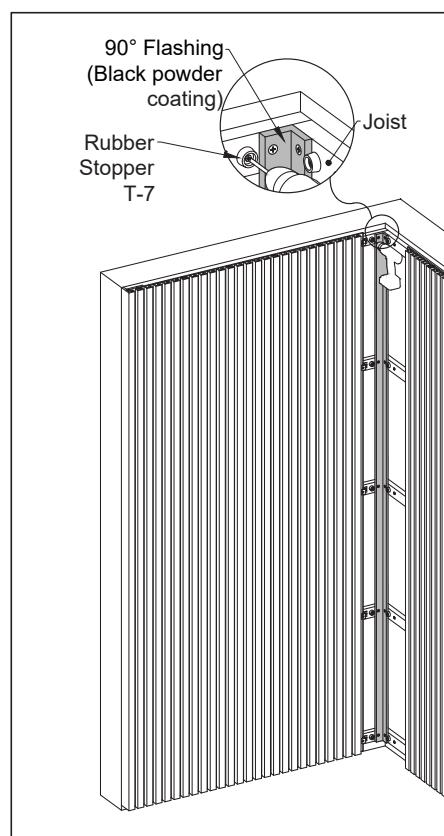
12 Cut the two last cladding boards according to the below calculation options,

Option 1: "A" minus 38mm, "B" minus 10mm

Option 2: "A" minus 10mm, "B" minus 38mm

Prior to cut the boards, cut the scrap piece of material to determine which options can obtain the better board adjoining apperance, as shown in ***Diagram 12*** and ***Detail 12-1***.
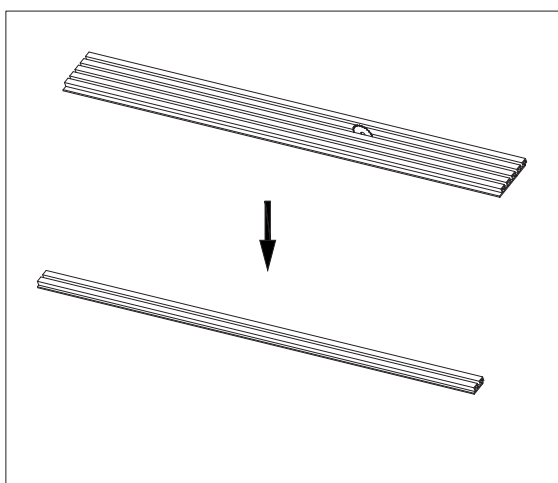
Diagram 12
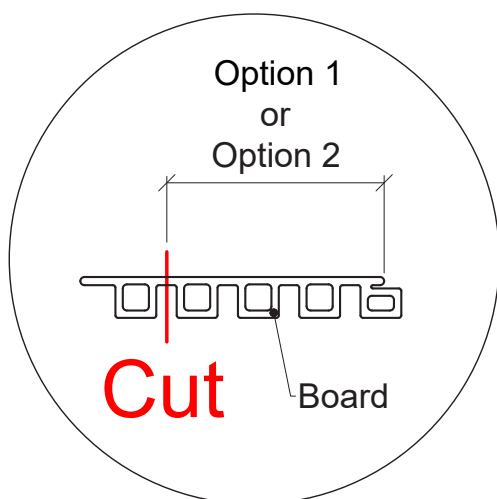
Detail 12-1

13 Face fix the two last cladding boards onto the battens against the Rubber Stopper (T-7) with screws, as shown in ***Diagram 13-1*** and ***Diagram 13-2***.
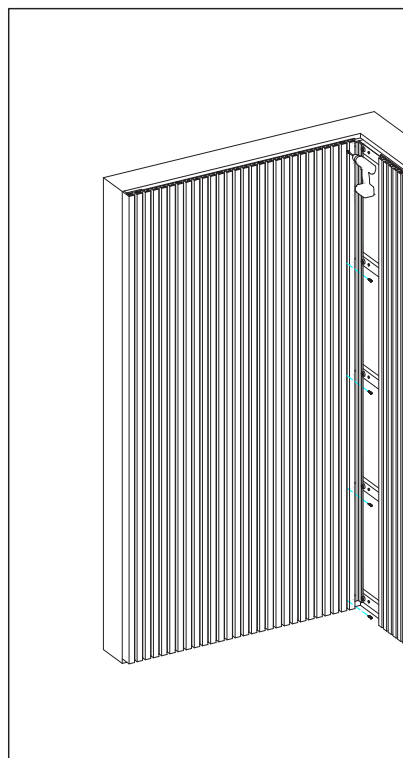
Diagram 13-1
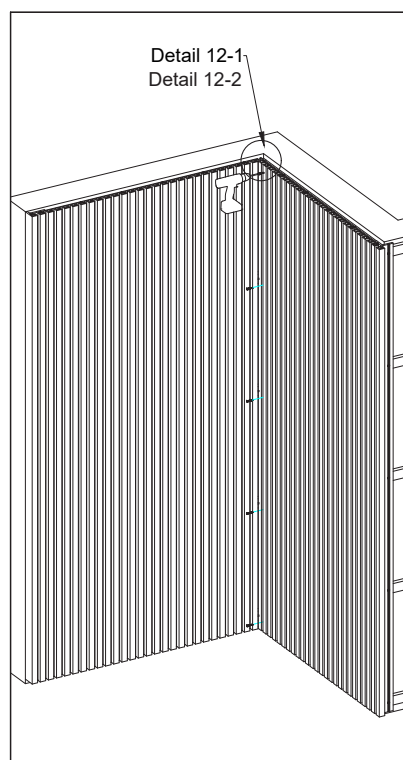
Diagram 13-2

Option 1 installation ("A" minus 38mm, and "B" minus 10mm), as shown in *Detail 13-1*

Face fixing the board onto the batten

Wall

Black Colour Flashing

T-7

Board

A min gap of 3 mm

Joists
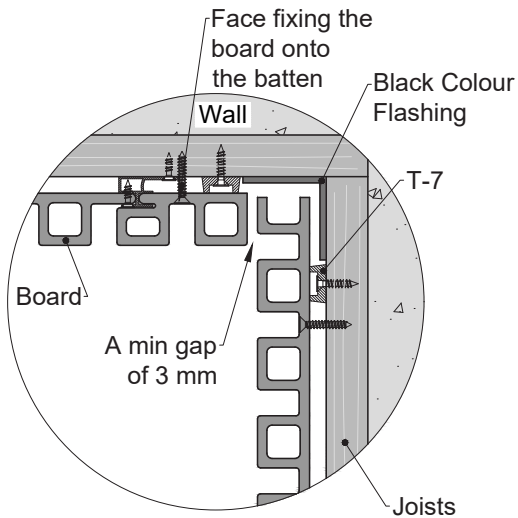
Detail 13-1

Option 2 installation ("A" minus 10mm, and "B" minus 38mm), as shown in *Detail 13-2*

Face fixing the board onto the batten

Wall

Black Colour Flashing

T-7

A min gap of 3 mm

Board

Joists
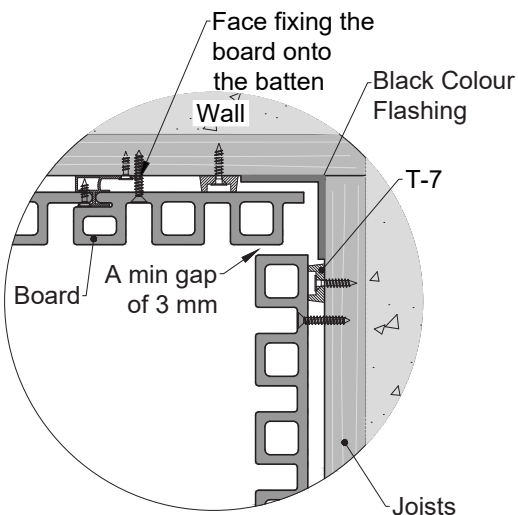
Detail 13-2

14 **Installing the First course at the Outside Corner**
- Wall Side C (Cladding between two Outside Corner trims (UH51)
- Wall Side D (Cladding between the Outside Corner trim (UH51) and the F-Trim (UH50)

Put the first cladding board in place and face fix it the side next to the trim onto the battens with screws, as shown in *Diagram 14*.

Detail 14-1

Detail 14-2
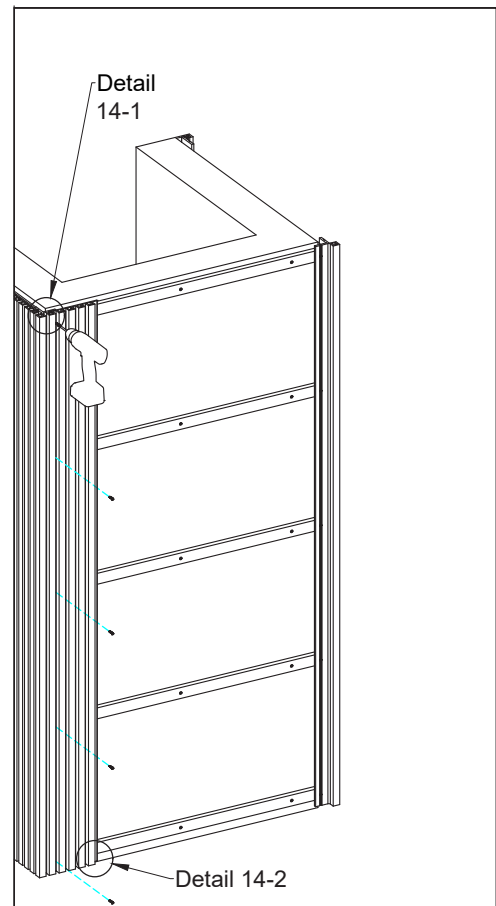
Diagram 14-1

Please Note:

1. Pre-drill the face fixing holes on the first board before installation to allow for expansion and contraction. Please review *page 6*, *"Predrill"*, **of this installation guide for further information.**

2. A minimum clearance of 20mm needs to be left between the cladding board and the floor, as shown in *Detail 14-2***.**

Outside Corner Trim (UH51)

E

Face fixing the board onto the batten

Board

Detail 14-1

Clip (AW08)

Board

Wall

Floor

20mm

Detail 14-2
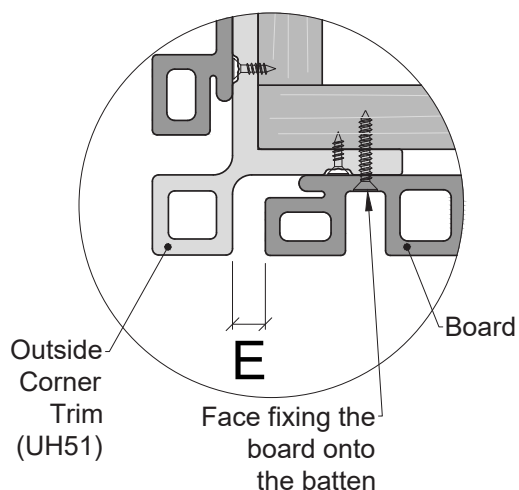
Detail 14-3
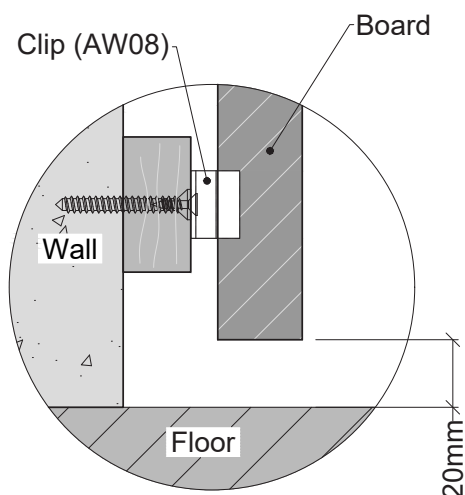
Clip (AW08)

Diagram 14-2

Secure the board onto the battens with the Clip (AW08), as shown in *Diagram 14-2*.

Please Note:
1. Since the composite wood must allow for expansion and contraction due to temperature change, the board must be locked at one fixed point but only one point to allow the remaining board to move freely. When installing vertically, it is required to lock the Clip (AW08) at the top of each board, as shown in *Detail 14-3***.**

DO NOT LOCK any other Clip (AW08) for the same board.
Please review *page 13***, "***Locking the Wall Cladding Board***" of this installation guide for further information.**

Locking the Clip (AW08) at the top of each board

Clip (AW08)
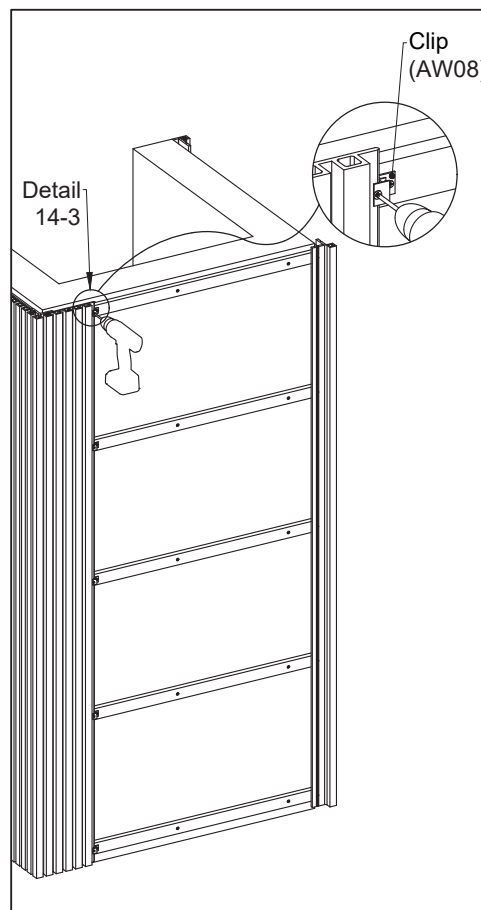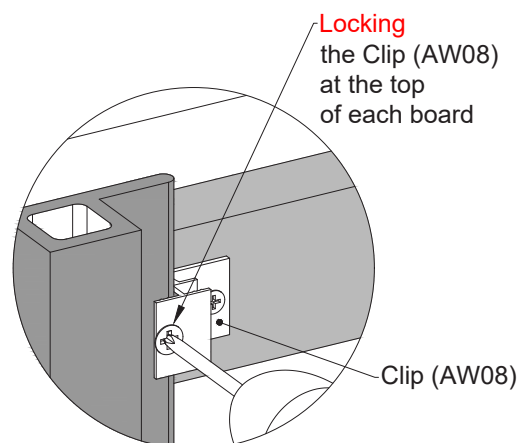
ONLY ONE LOCKING SCREW TO BE USED PER BOARD

Detail 14-3

15 **Installing the Second course at the Outside Corner**
- Wall Side C (Cladding between two Outside Corner trims (UH51)
- Wall Side D (Cladding between the Outside Corner trim (UH51) and the F-Trim (UH50)

Please process the installation procedure same as *Step 7* on *page 19 to 20* of this installation guide.

16 **Installation of the Last board at the Outside Corner**
- Wall Side C (Cladding between two Outside Corner trims (UH51)
- Wall Side D (Cladding between the Outside Corner trim (UH51) and the F-Trim (UH50)

When you are at the last board, measure the distance between the trim and the Clip (AW08) to obtain the appropriate board's cutting dimension, as shown in *Diagram 16-1*.

Detail 16-1
Detail 16-2
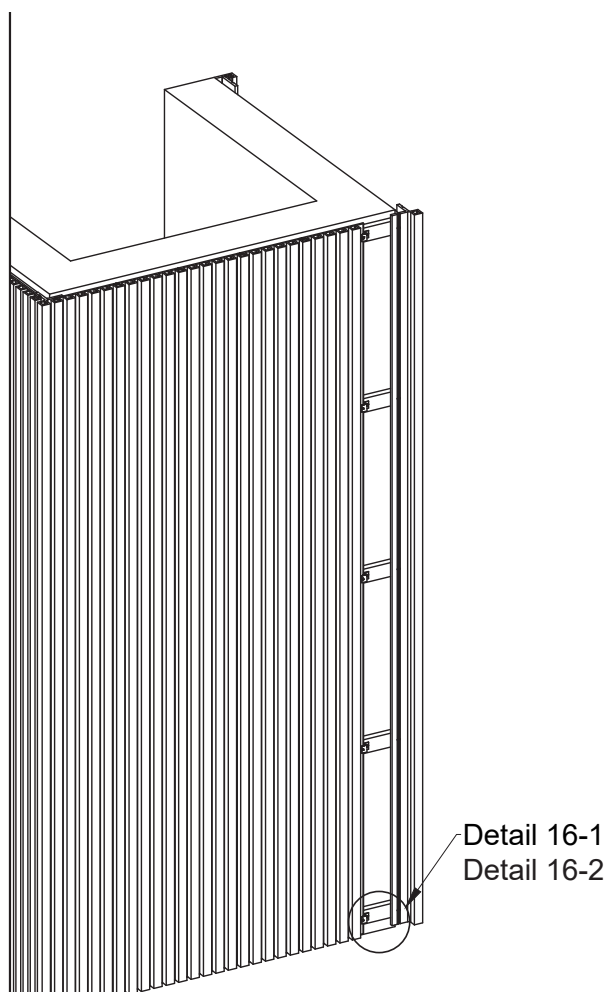
Diagram 16-1

Detail 16-1 shows how to measure the determination measurement from the Outside Corner Trim (UH51).
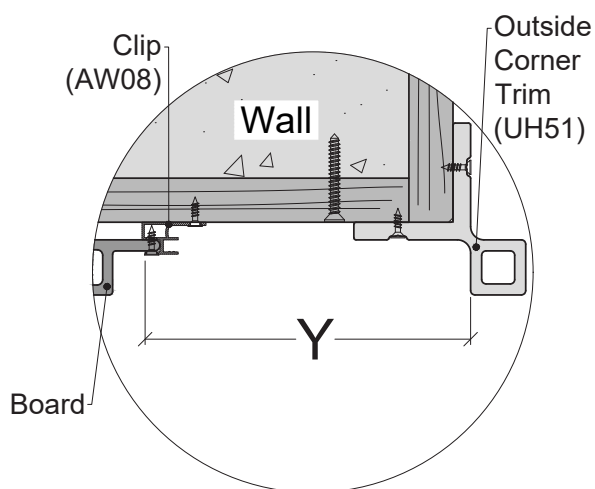
Detail 16-1

Detail 16-2 shows how to measure the determination measurement from the F-Trim (UH50).
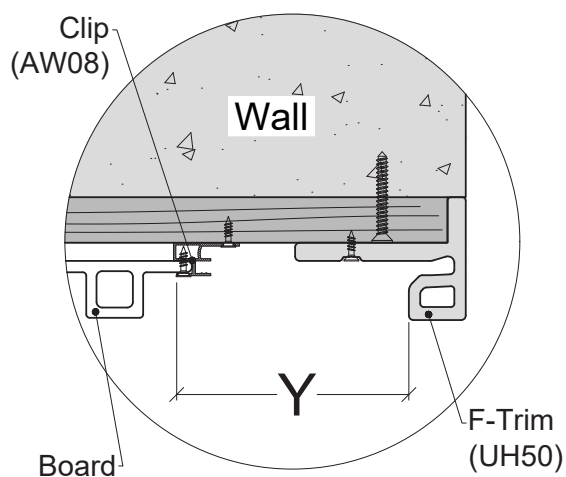
Detail 16-2

Rip the cladding board according to the value of final determination, as shown in **Diagram 16-2** and **Detail 16-3**.
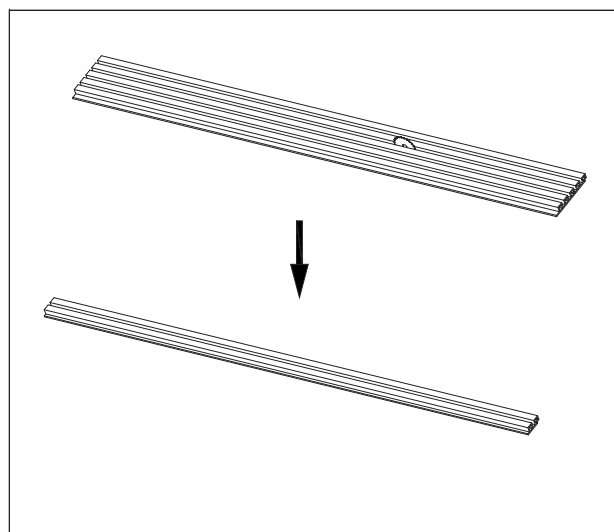
Diagram 16-2
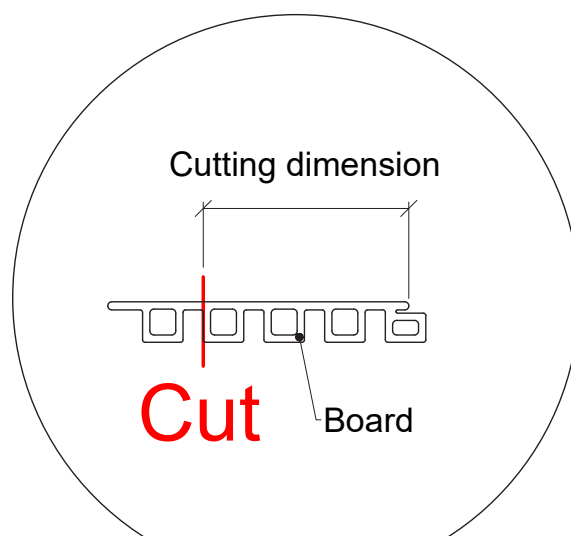
Detail 16-3

17 Face fixing the last ripped cladding board onto the joist with screws, as shown in *__Diagram 17-1__* and *__Detail 17-1__* at the outside corner (Outside Corner Trim UH51), *__Diagram 17-2__* and *__Detail 17-2__* at the outermost edge (F-Trim UH50).

Please Note:
1. Pre-drill the face fixing holes on the last board before installation to allow for expansion and contraction. Please review *page 6*, *"Predrill"*, **of this installation guide for further information.**

Detail 17-2

Digram 17-2

Detail 17-1

Diagram 17-1

Joist

Wall

Board

E

F-Trim (UH50)

Face fixing the last board onto the batten

Detail 17-2

Joist

Board

E

Outside Corner Trim (UH51)

Face fixing the last board onto the batten
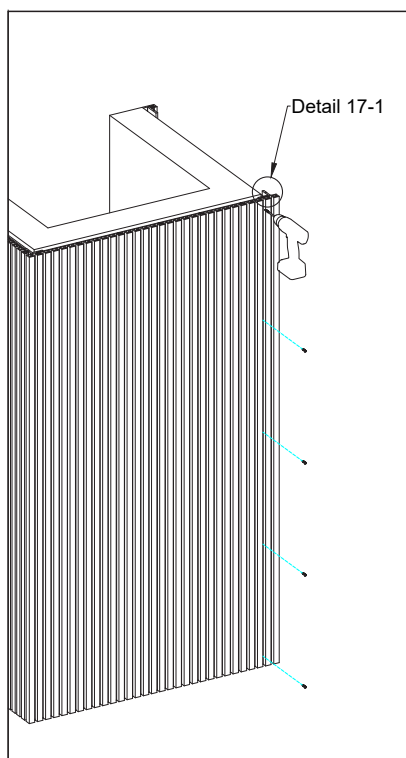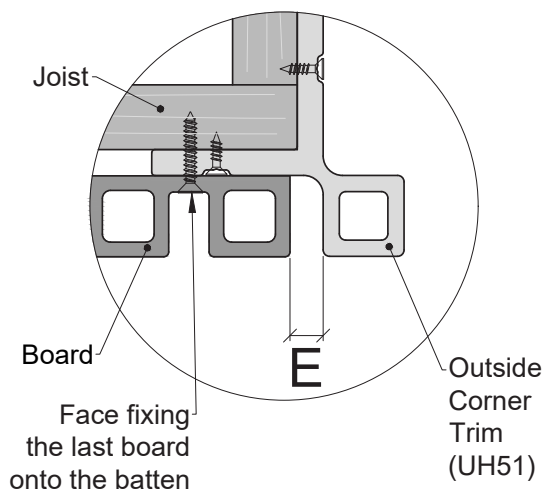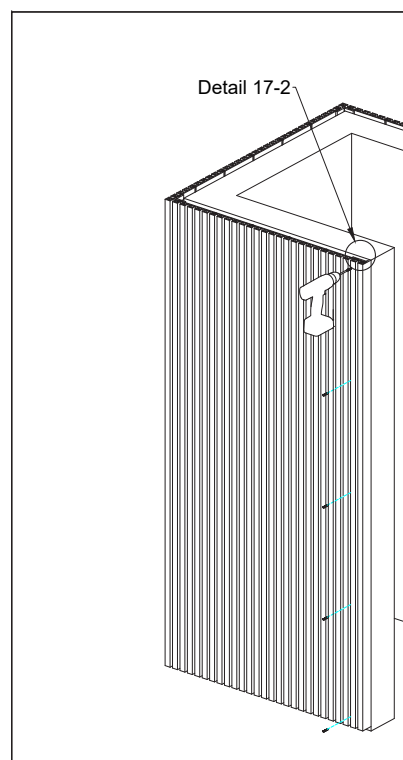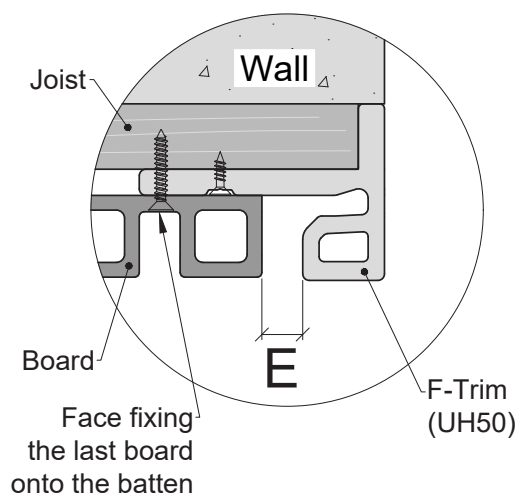
Detail 17-1

18 **_Diagram 18_** presents the final appearance after completing the installation.
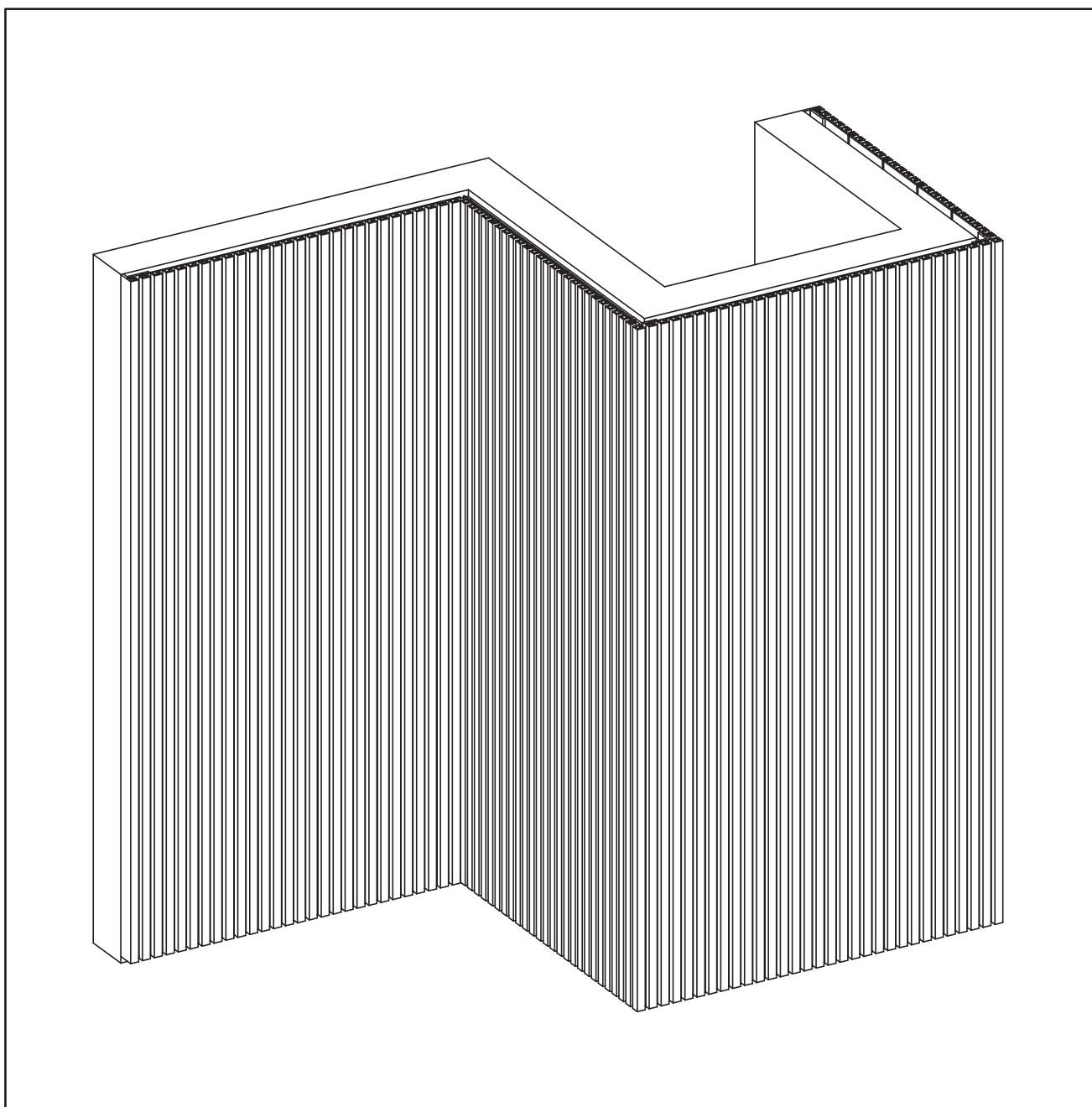
Diagram 18

Castellation Cladding - Horizontal Installation

Installation Procedure

Step 1: Framing
> **- Measure and Chalk the battens**
> **- Battens Installation**

Step 2: Installation the Trims on the starting point

Step 3: Starting Trim (AW02) installation

Step 4: Castellation Cladding Board Installation
> **- Installing the First course**
> **- Installing the Second course**
> **- Continuing the remaining installation**
> **- Installing the Last Castellation Cladding board**

19 Framing

The frame needs to be level before installing the cladding boards. ***Diagram 19*** shows the wall replicating different scenarios potentially occuring when installing the cladding boards.

Wall Side A: Cladding between the F-Trim (UH50) and the Inside Corner
Wall Side B: Cladding between the Inside Corner and the Outside Corner Trim (UH51)
Wall Side C: Cladding between two Outside Corner Trims (UH51)
Wall Side D: Cladding between the Outside Corner Trim (UH51) and the F-Trim (UH50)
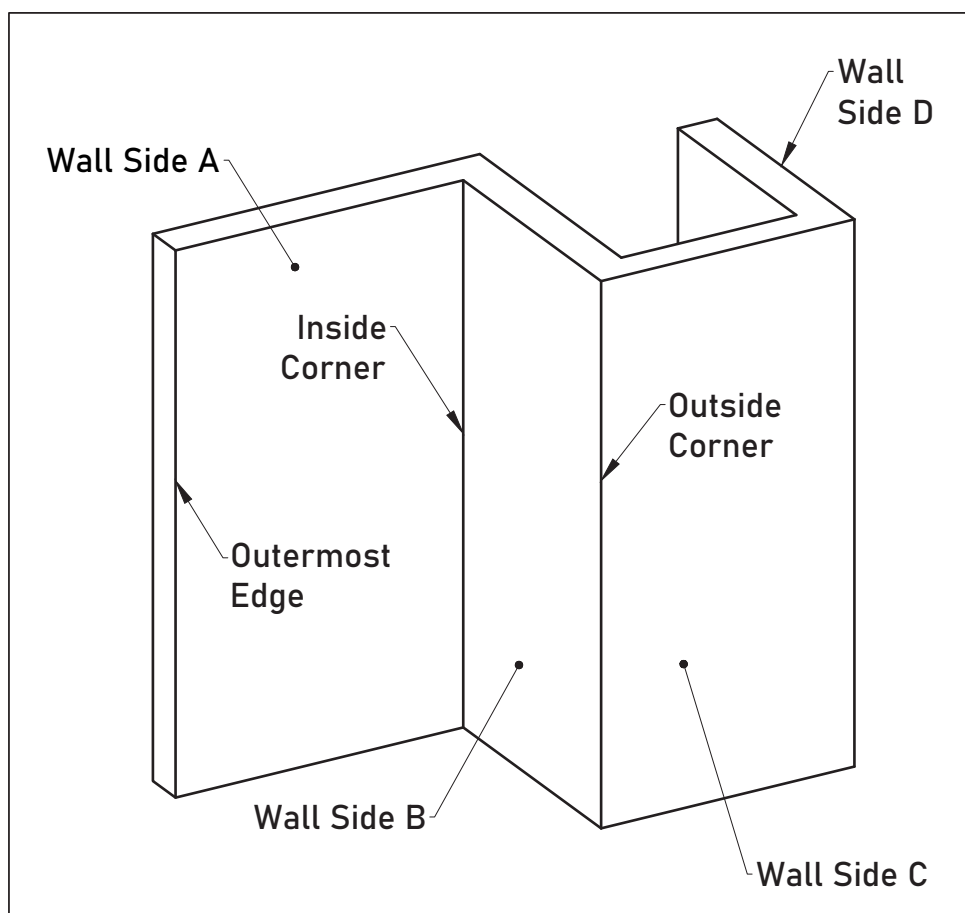
Diagram 19

20 Measure and chalk the battens according to the span data specified on **_page 11_** of this installation guide, as shown in **_Diagram 20_**.
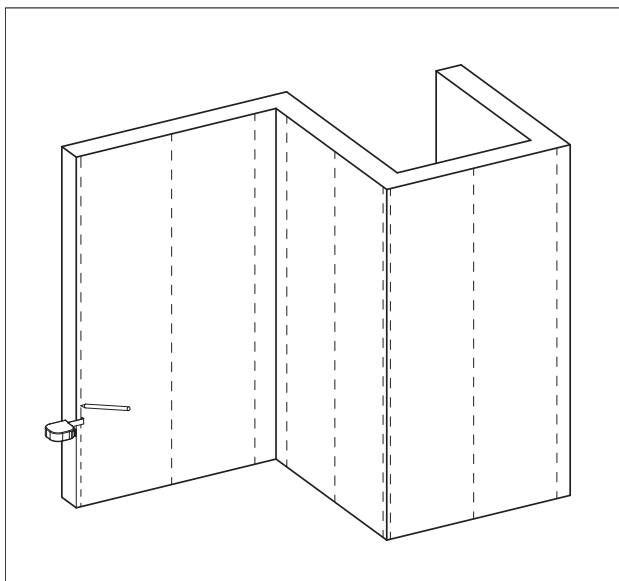
Diagram 20

Please Note:

1. We are using wood joists for this installation. If you are using aluminum joists, please refer to _page 9_ **of this installation guide for the correct recommended screws.**

2. An adequate span between the joists is required to keep the boards from bending. Please review _page 11_ **of this installation guide to see what span is needed**

21 Fix the joists onto the wall that you intend to install with screws in the distance at least 500mm and max 1000mm on center. Please review **_page 11_** to see what span is needed, as shown in **_Diagram 21_**.
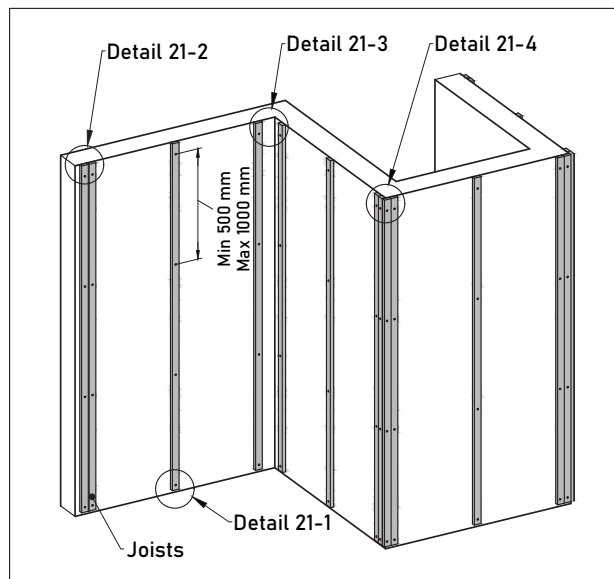
Diagram 21

Please Note:

1. A minimum clearance of 20mm needs to be left at the bottom of each joist against the floor, as shown in _Detail 21-1_**.**
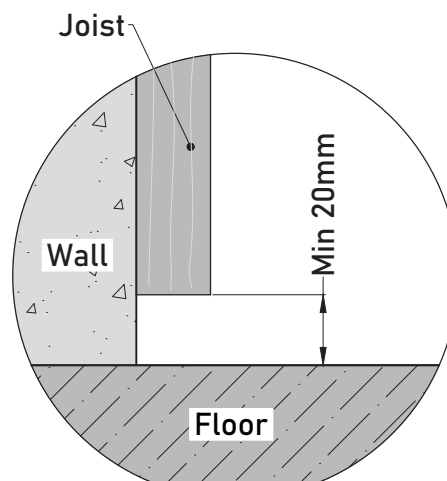
Detail 21-1

Please Note:

2. For the Outermost Edge (F-Trim UH50), please install according to *Detail 21-2*.

3. For the Inside Corner (No trim is needed), please install according to *Detail 21-3*.
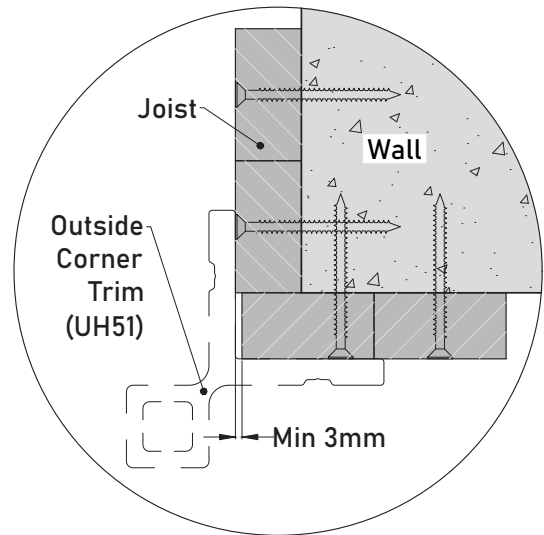
4. For the Outside Corner (Outside Corner Trim UH51), please install according to *Detail 21-4*.
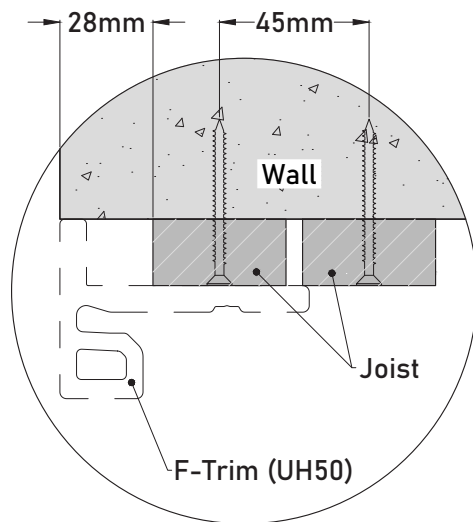
Detail 21-4

Detail 21-2
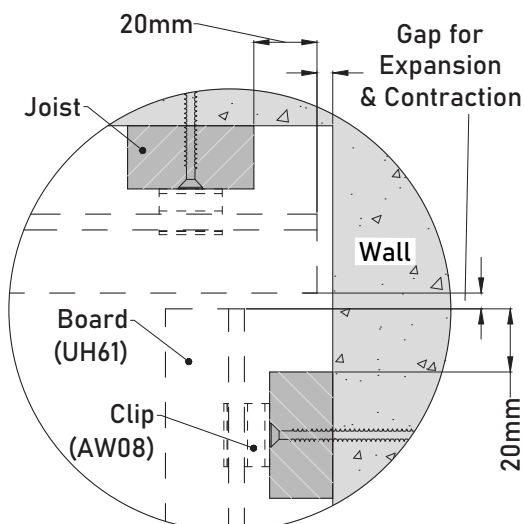
Detail 21-3

22 Installing the Trims on the starting point

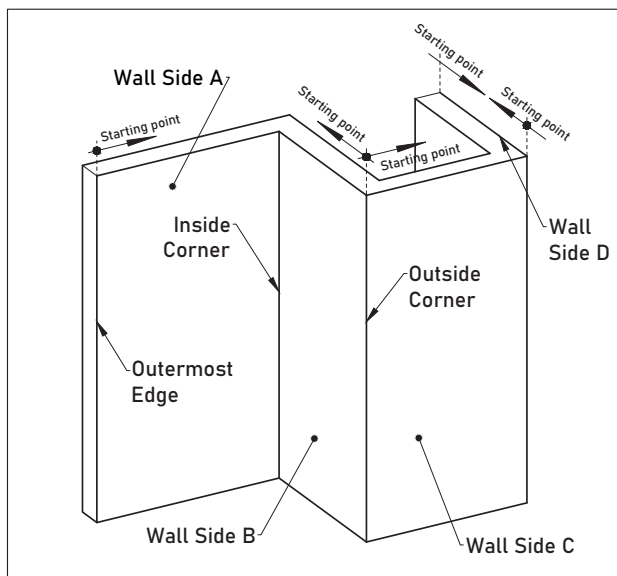It is recommended to fasten the trims on the starting point, as shown in *Diagram 22*.

Diagram 22

23 Secure the trims on the starting point before installation, as shown in *Diagram 23*.
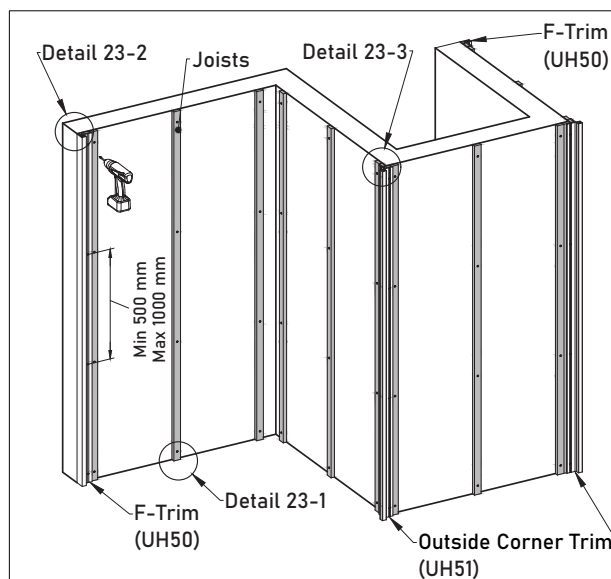
Diagram 23

Please Note:

1. A minimum clearance of 20mm needs to be left between the trims against the floor, as shown in *Detail 23-1*.
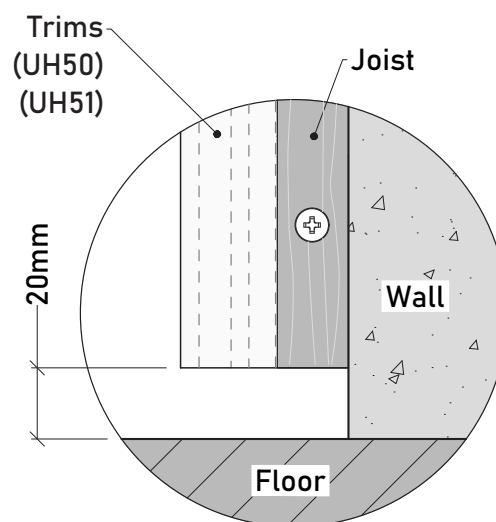
Detail 23-1

Please Note:

**2.** Wall Side A: Cladding between the F-Trim (UH50) and the Inside Corner.
Secure the F-Trim (UH50) onto the outermost edge's joists with screws in the distance at least 500mm and max 1000mm on center, as shown in _Detail 23-2_**.**

3. Wall Side B: Cladding between the Inside Corner and the Outside Corner Trim (UH51).
Secure the Outside Corner Trim (UH51) onto the outside corner's joists with screws in the distance at least 500mm and max 1000mm on center, as shown in _Detail 23-3_**.**

4. Wall Side C: Cladding between two Outside Corner Trims (UH51).
Secure the Outside Corner Trim (UH51) onto the outside corner's joists with screws in the distance at least 500mm and max 1000mm on center, as shown in _Detail 23-4_**.**

5. Wall Side D: Cladding between the Outside Corner Trim (UH51) and the F-Trim (UH50).
Secure the Outside Corner Trim (UH51) onto the outside corner's joists and the F-Trim (UH50) onto the outermost edge's battens with screws in the distance at least 500mm and max 1000mm on center, as shown in _Detail 23-2_ **and** _Detail 23-3_**.**
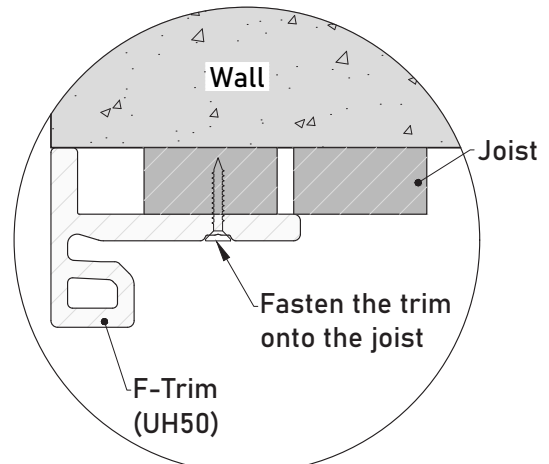
Detail 23-2
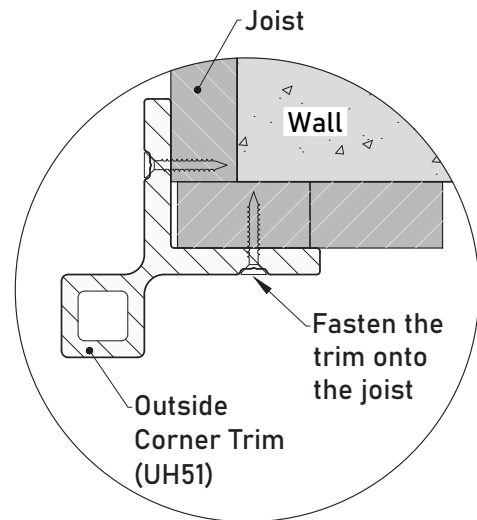
Detail 23-3

24 Starting Trim (AW02) Installation

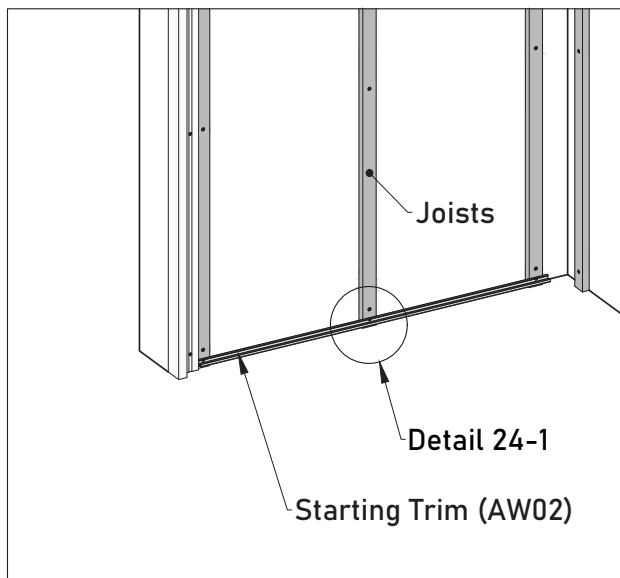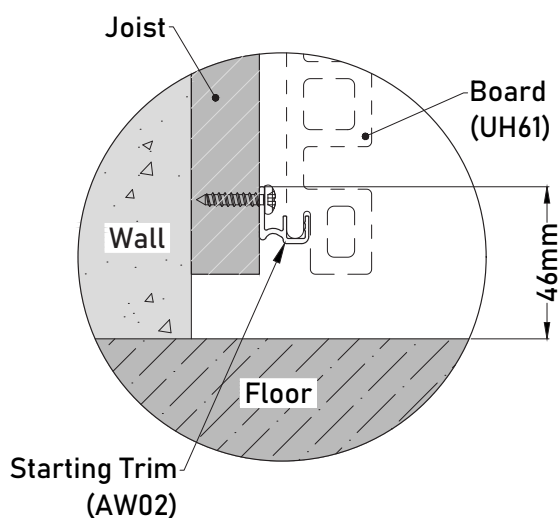Install the Starting Trim (AW02) at the end of the joists against the floor with screws, as shown in *Diagram 24*.

Diagram 24

Please Note:

1. Fasten the Starting Trim (AW02) 46mm height against the floor to get a minimum clearance of 20 mm between the cladding board and the floor, as shown in *Detail 24-1*.

Detail 24-1

Please Note:
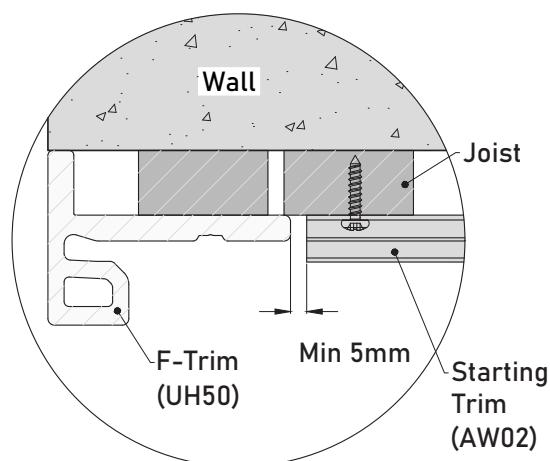
2. Outermost Edge (F-Trim UH50)
A minimum gap of 5mm needs to be left between the Starting Trim (AW02) and the F-Trim (UH50), as shown in *Detail 24-2*.

3. Inside Corner (no trim is needed to install)
A minimum clearance of 11mm needs to be left between the Starting Trim (AW02) against Wall Side B in the inside corner, as shown in *Detail 24-3*. **And a minimum distance of 63mm needs to be left between the Starting Trim (AW02) against Wall Side A in the inside corner, as shown in** *Detail 24-3*.
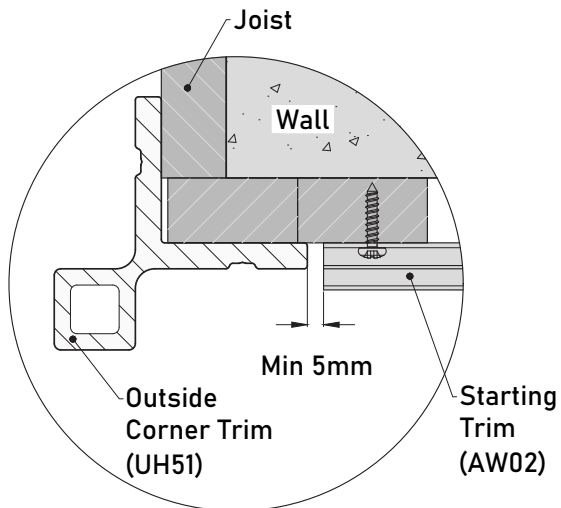
4. Outside Corner (Outside Corner Trim UH51)
A minimum gap of 5mm needs to be left between the Starting Trim (AW02) and the Outside Corner Trim (UH51), as shown in *Detail 24-4*.

Detail 24-2
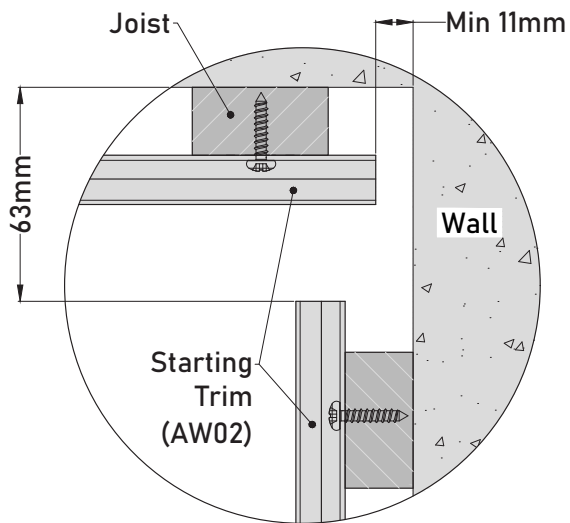
Joist

Min 11mm

63mm

Wall

Starting Trim (AW02)

Detail 24-3

Joist

Wall

Min 5mm

Outside Corner Trim (UH51)

Starting Trim (AW02)

Detail 24-4

Castellation Cladding Board Installation

Installing the First course

Put the first Castellation Cladding Board (UH61) over the Starting Trim (AW02) in place and fasten it onto the joist with the Clip (AW08), as shown in *__Diagram 25__* and *__Detail 25-1__*.
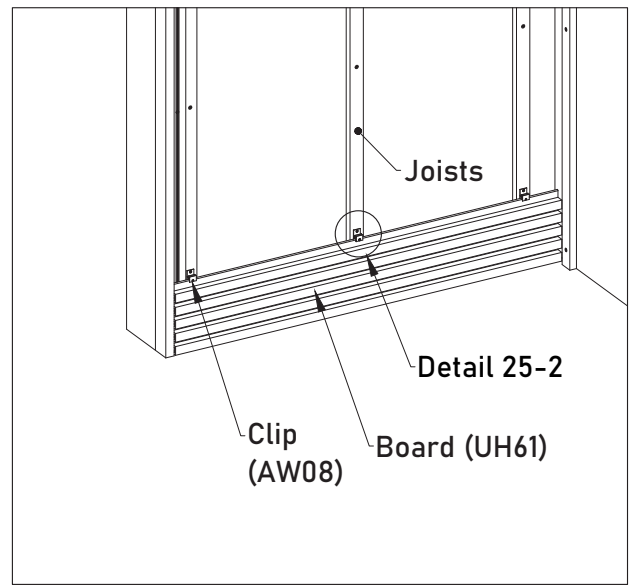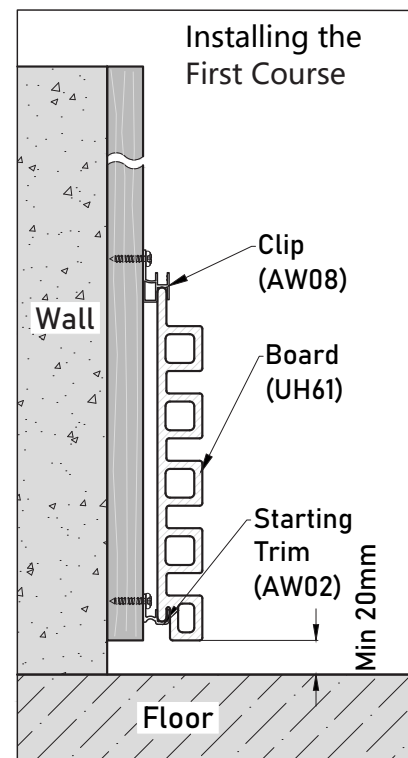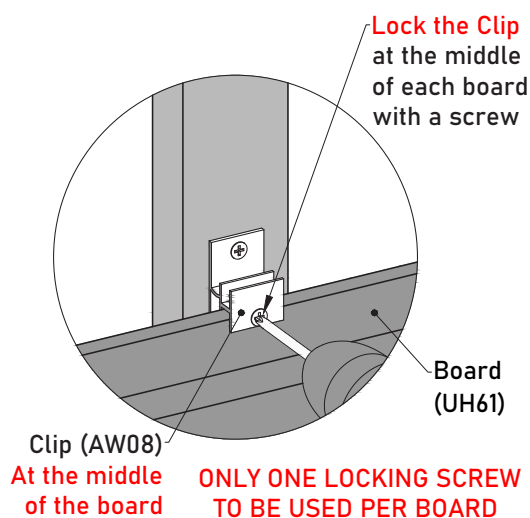
Joists

Detail 25-2

Clip (AW08)

Board (UH61)

Diagram 25

Installing the First Course

Clip (AW08)

Wall

Board (UH61)

Starting Trim (AW02)

Min 20mm

Floor

Detail 25-1

NewTechWood®

Please Note:

1. Since the composite wood must allow for expansion and contraction due to temperature change, the board must be locked at one fixed point but only one point to allow the remaining board to move freely. When installing horizontally, it is required to lock the Clip (AW08) at the middle of each board, as shown in _Detail 25-2_**.**

DO NOT LOCK any other Clip (AW08) for the same board.
Please review _page 13_**, "**_Locking the Wall Cladding Board_**" of this installation guide for further information.**

Lock the Clip at the middle of each board with a screw

Board (UH61)

Clip (AW08)
At the middle of the board

ONLY ONE LOCKING SCREW TO BE USED PER BOARD

Detail 25-2

Please Note:

2. The gap between the cladding board and the floor should be at leasrt 20mm, as shown in _Detail 25-1_**.**

3. The gap between the cladding board, F-Trim (UH50), Outside Corner Trim (UH51), adjacent wall in the insdie corner, and the adjoining cladding board in the inside corner is vital to avoid warping or buckling,

   3.1 Outermost Edge, F-Trim (UH50), as shown in _Detail 25-3_**.**
   3.2 Inside Corner (no trim is needed), as shown in _Detail 25-4_**.**
   3.3 Outside Corner, Outside Corner Trim (UH51), as shown in _Detail 25-5_**.**

Please select the appropriate gap value according to the _"Expansion and Contraction Values Table"_ **on** _page 12_ **of this installation guide.**

Wall

Gap for Expansion & Contraction

F-Trim (UH50)

Board (UH61)

Detail 25-3

Gap for Expansion & Contraction

Gap for Expansion & Contraction

Wall

Board (UH61)

Detail 25-4

Board (UH61)

Gap for Expansion & contraction

Wall

Outside Corner Trim (UH51)

Gap for Expansion & Contraction
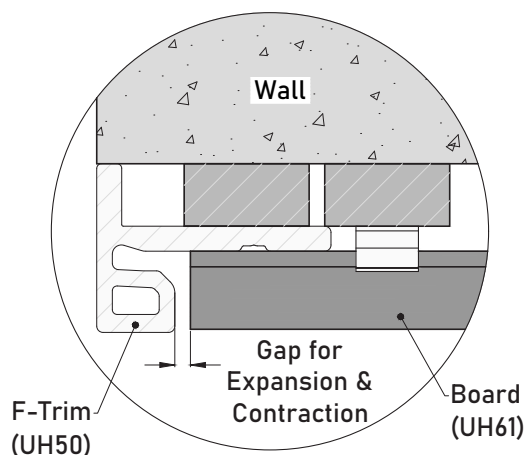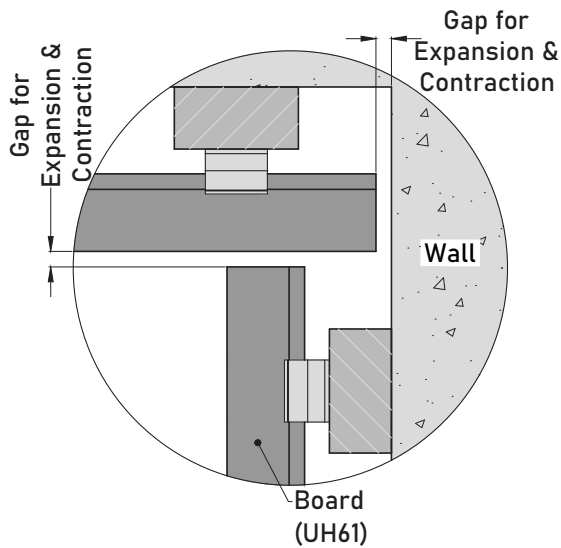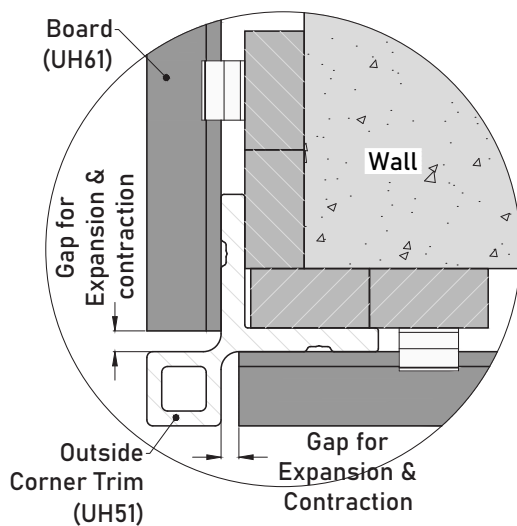
Detail 25-5

26 **Installing the Second course**

Put the second Castellation Cladding Board (UH61) over the first board's Clip (AW08) in place and fasten it onto the joist with another Clip (AW08), as shown in ***Diagram 26*** and ***Detail 26-1***.
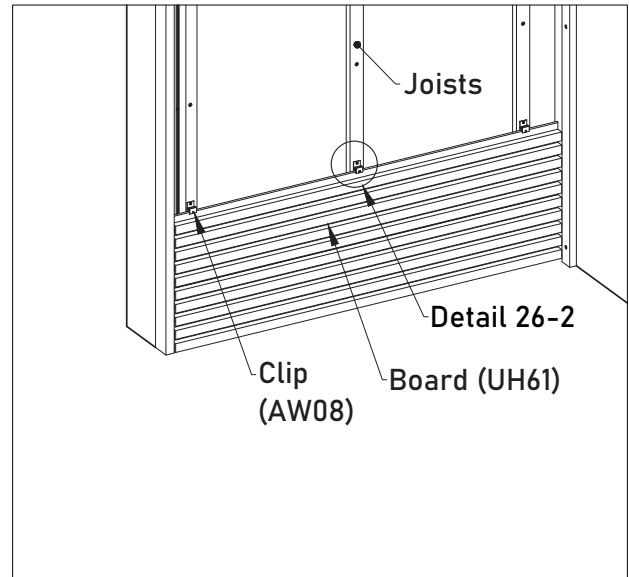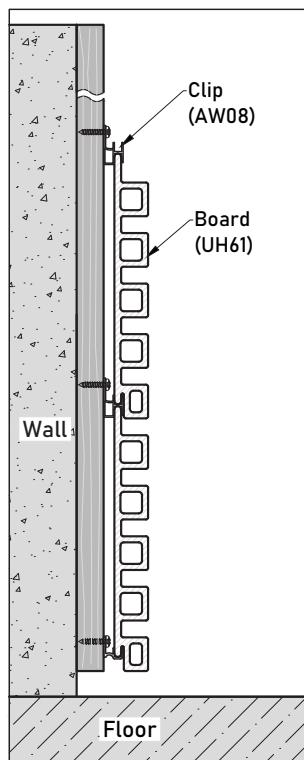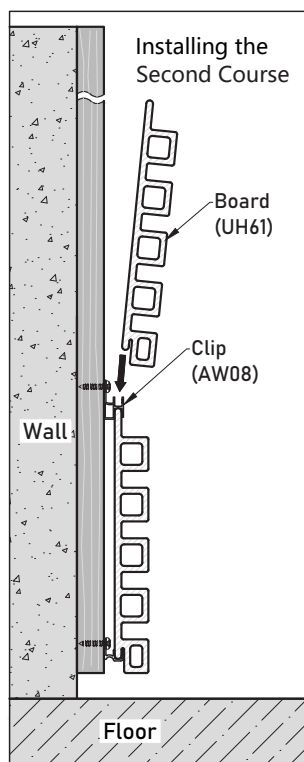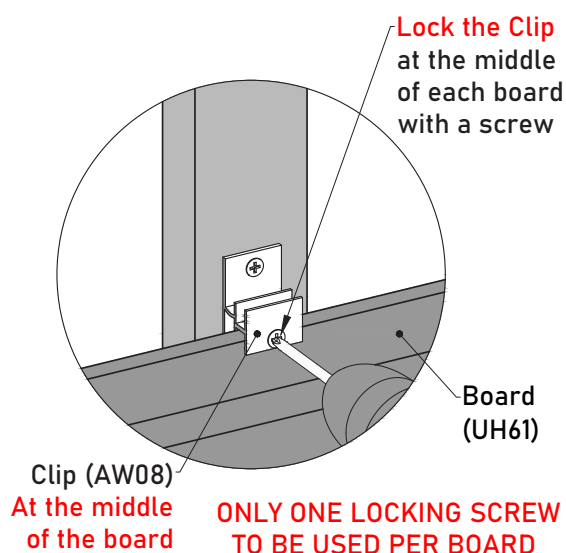

Joists

Detail 26-2

Clip (AW08)

Board (UH61)

Diagram 26

Installing the
Second Course

Board
(UH61)

Clip
(AW08)

Wall

Floor

Detail 26-1

Please Note:

1. Since the composite wood must allow for expansion and contraction due to temperature change, the board must be locked at one fixed point but only one point to allow the remaining board to move freely. When installing horizontally, it is required to lock the Clip (AW08) at the middle of each board, as shown in *Detail 26-2*.

DO NOT LOCK any other Clip (AW08) for the same board.
Please review *page 13*, "*Locking the Wall Cladding Board*" of this installation guide for further information.

Lock the Clip
at the middle
of each board
with a screw

Board
(UH61)

Clip (AW08)
At the middle
of the board

ONLY ONE LOCKING SCREW
TO BE USED PER BOARD

Detail 26-2

27 **Installing the Last Castellation Cladding Board**

When you are at the last cladding board, measure the distance between the top end of the joist and the Clip (AW08), as shown in **_Diagram 27_** and **_Detail 27-1_**.
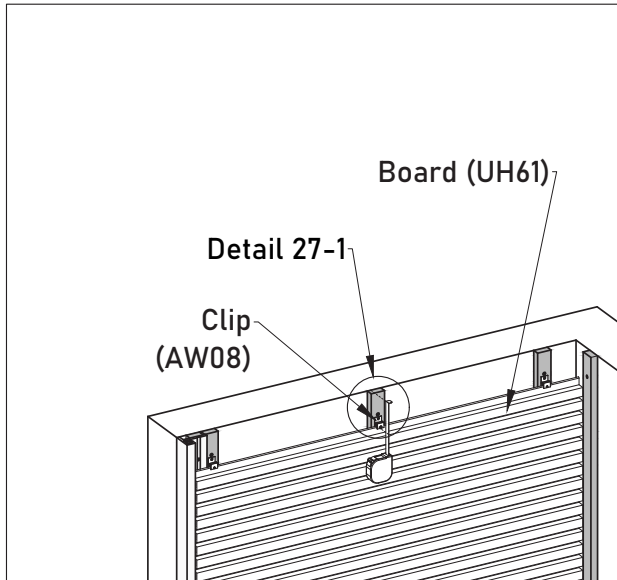
Diagram 27
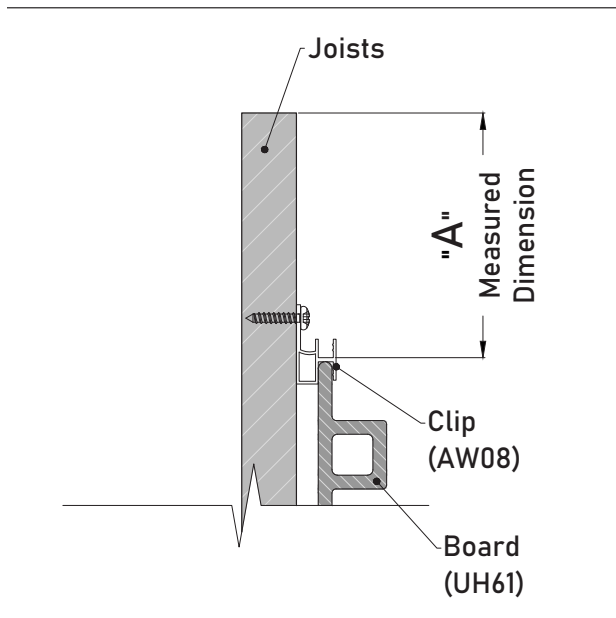
Detail 27-1

28 Rip the cladding board according to the measured dimension, as shown in **_Diagram 28_** and **_Detail 28-1_**.
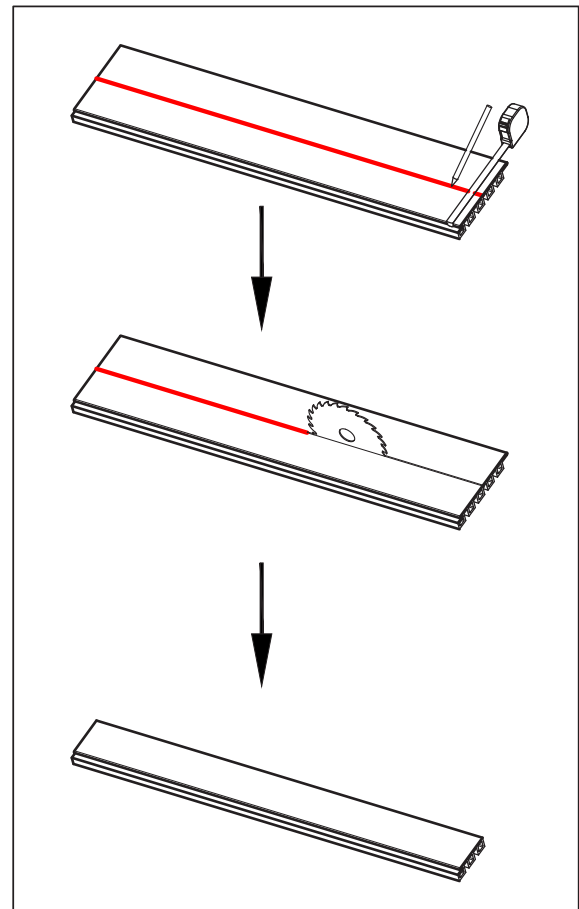
Diagram 28
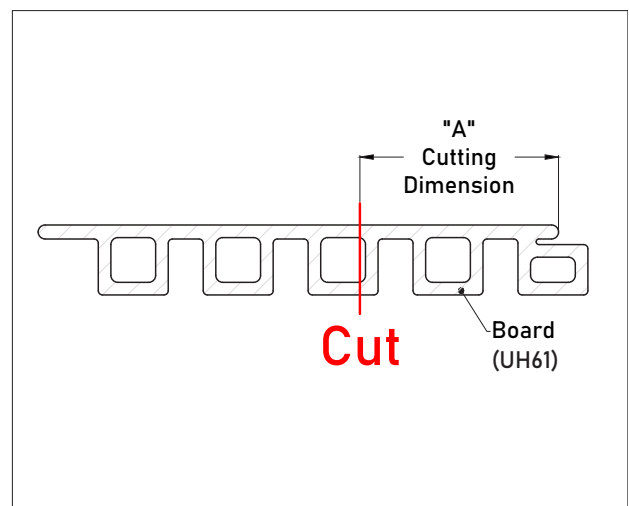
Detail 28-1

29 Install the Rubber Stoppers (T-7) onto each joist with screws, as shown in **_Diagram 29_** and **_Detail 29-1_**.
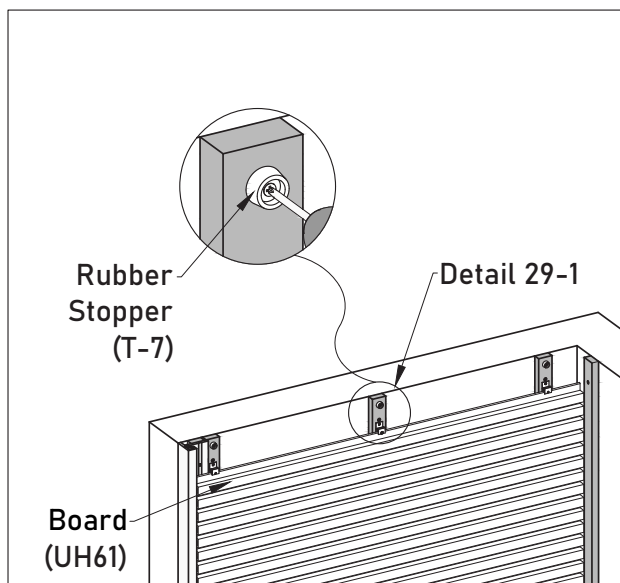
Diagram 29
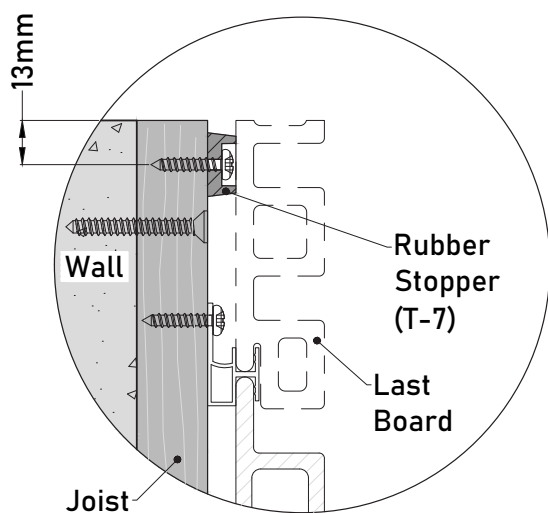
Detail 29-1

30 Put the ripped cladding board over the Clip (AW08) in place and then face fix it onto each joist along the length of the boards against the Rubber Stopper (T-7), as shown in **_Diagram 30_** and **_Detail 30-1_**.
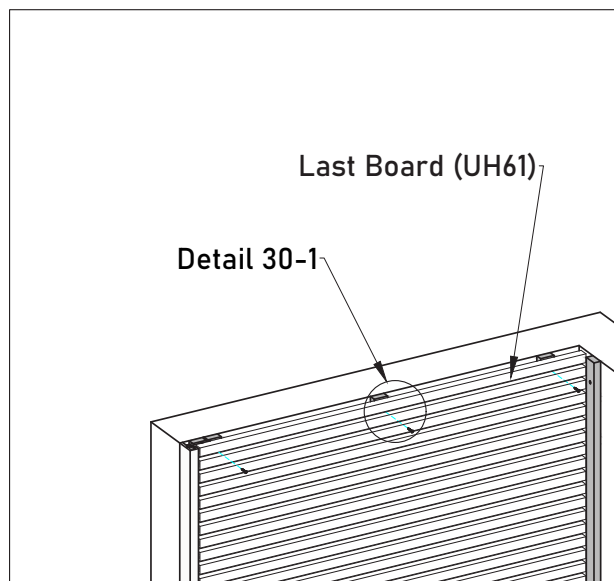
Diagram 30
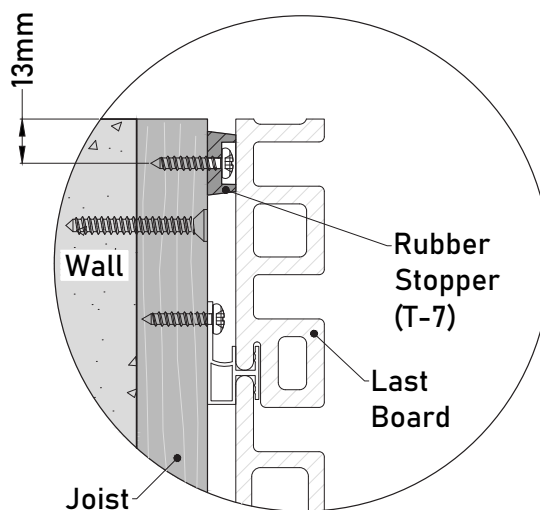
Detail 30-1

Please Note:

Predrill the ripped cladding board before installation to allow for expansion and contraction. Please review the section, _"Predrill"_, on _page 5_ of this installation guide for details.

31 *Diagram 31* presents the final appearanceafter completing the installation.
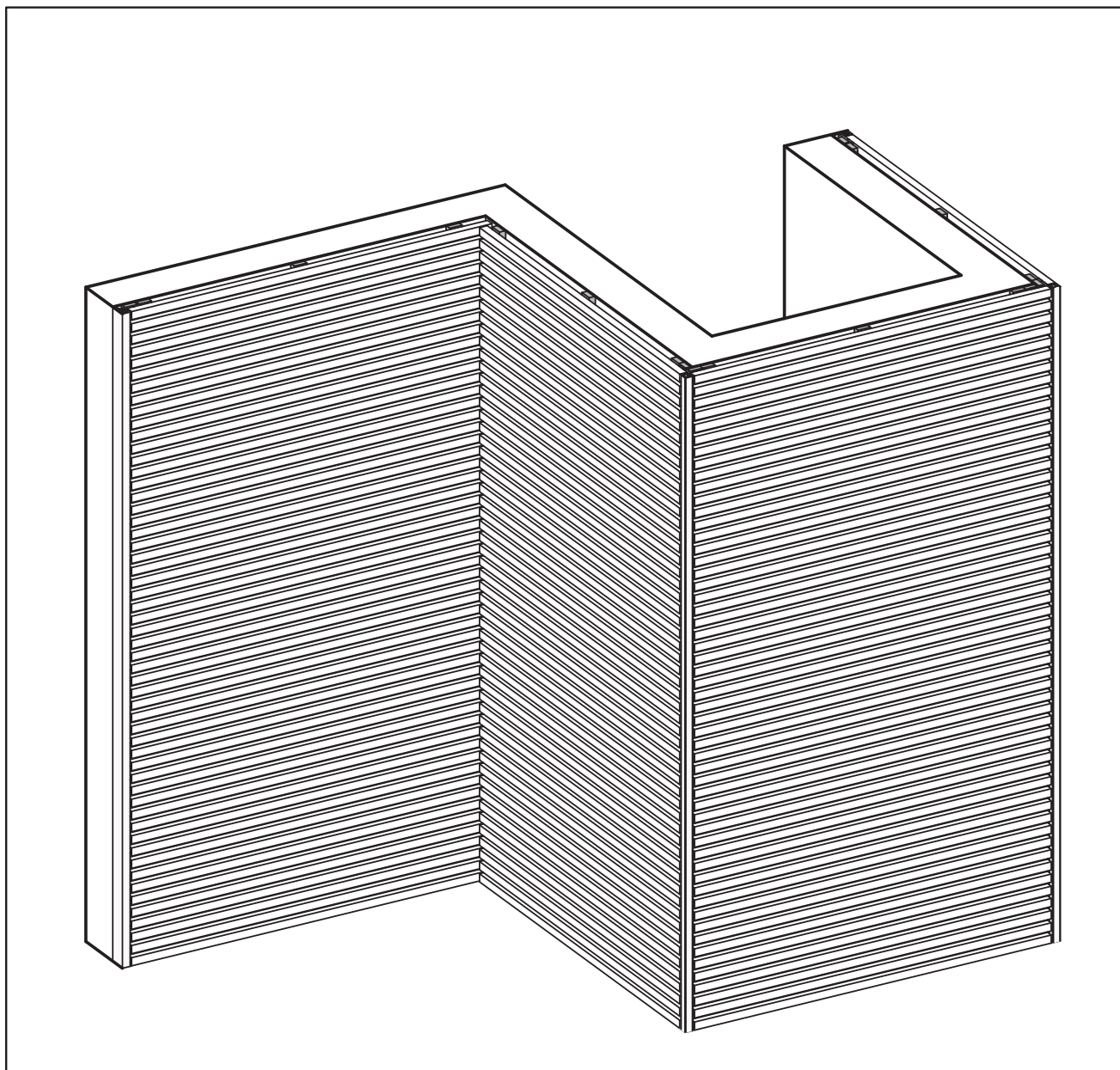
Diagram 31

Ceiling Installation

32 Framing

Fix the joists onto the ceiling where you intend to install the board. It is recommended to apply the joist span of not more than 300mm, as shown in *Diagram 32*.
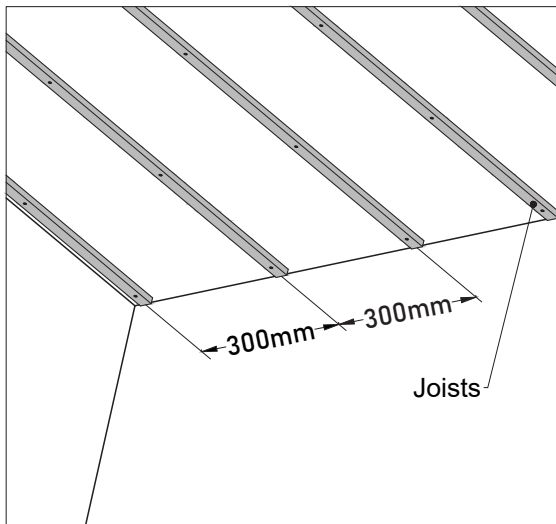
Diagram 32

33

Fasten the Starting Trim (AW02) onto the end of the joists with screws, as shown in *Diagram 33*.
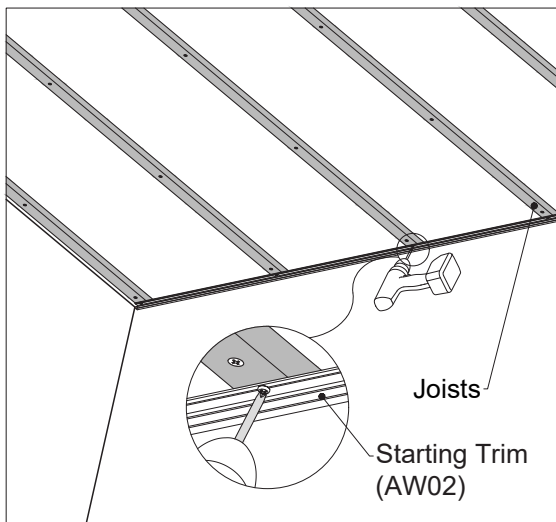
Diagram 33

34 Ceiling board installation

Put the Cladding Board (UH61) over the Starting Trim (AW02) and fasten it to the joists with Clip (AW08), as shown in *Diagram 34* and *Diagram 35*.

Note:
1. Since the composite wood must allow for expansion and contraction due to temperature change, the board must be locked at one fixed point but only one point to allow the remaining board to move freely. When installing horizontally, it is required to lock the Clip (AW08) at the middle of each board, as shown in *Detail 35-1*.
DO NOT LOCK any other Clip (AW08) for the same board.
Please review *page 13*, "*Locking the Wall Cladding Board*" of this installation guide for further information.

2. The gap between the Cladding Board (US31) and the adjacent walls is vital to avoid warping or buckling, as shown in *Detail 35-2*. Please select the appropriate gap value according to the *Expansion and Contraction Values Table* on *page 12* of this installation guide.
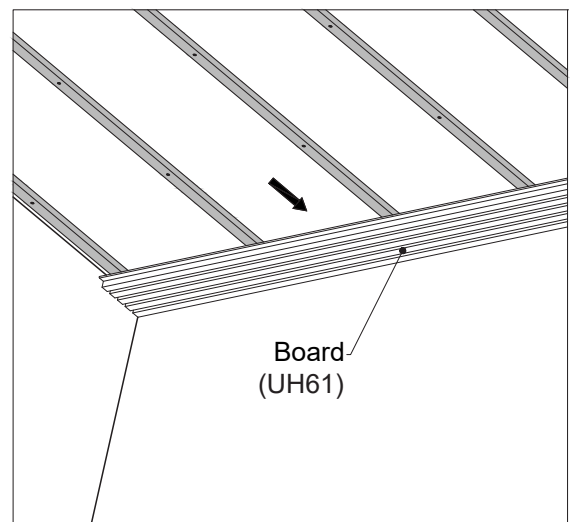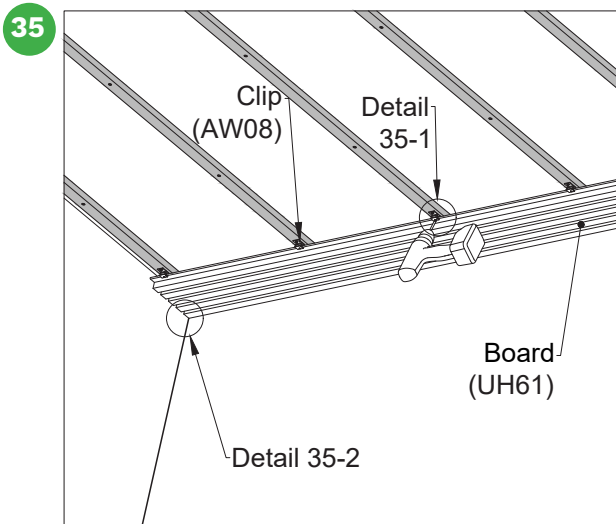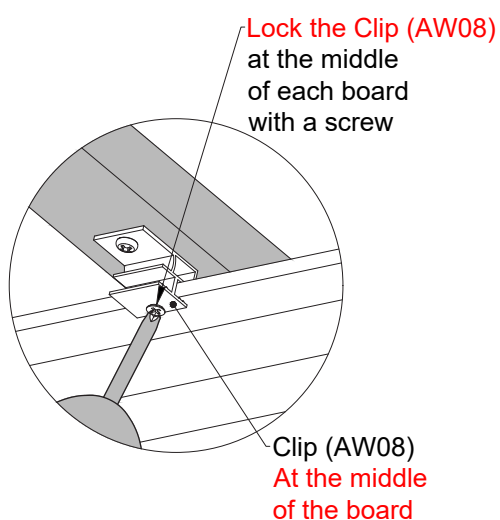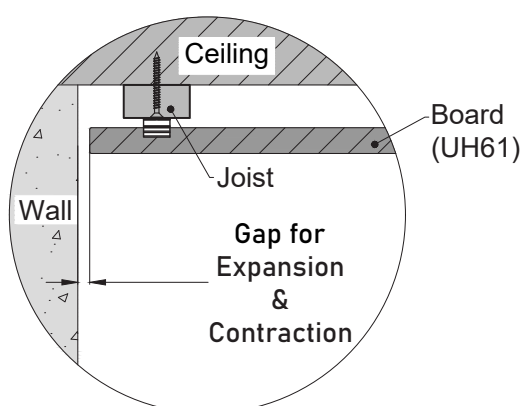

Diagram 34

35

Clip (AW08)

Detail 35-1

Board (UH61)

Detail 35-2

Diagram 35

Lock the Clip (AW08) at the middle of each board with a screw

Clip (AW08)
At the middle of the board

Detail 35-1

Ceiling

Board (UH61)

Joist

Wall

Gap for Expansion & Contraction

Detail 35-2

36 Put the next Cladding Board (UH61) in place and slide it inside the Clip (AW08), as shown in ***Diagram 36***. Then fasten it to the joists with Clip (AW08), repeat the same procedure as installation ***Step 34***.
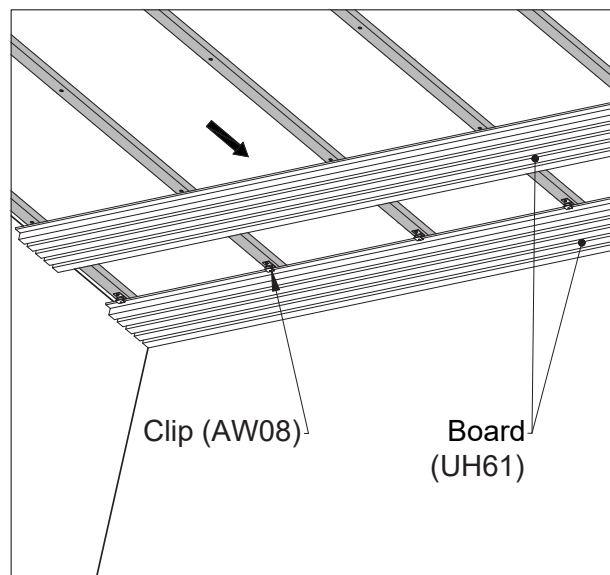

Clip (AW08)

Board (UH61)

Diagram 36

37 When you are at the Cladding's last board, measure the distance between the end of the joists and the Clip (AW08), as shown in *__Diagram 37__* and *__Detail 37-1__*.
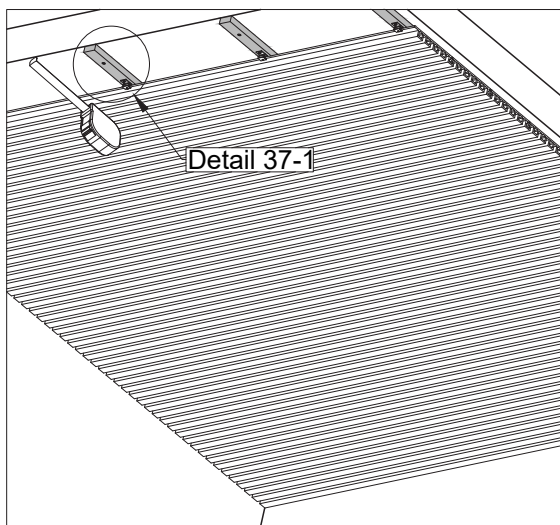
Diagram 37
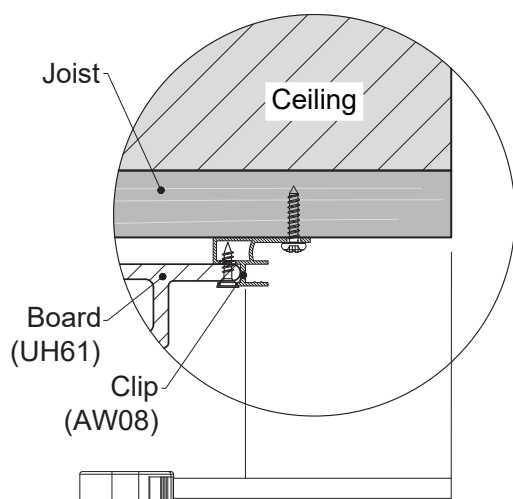
Detail 37-1

38 Rip the Cladding Board (UH61) according to the measured length, as shown in *__Diagram 38__* and *__Detail 38-1.__*
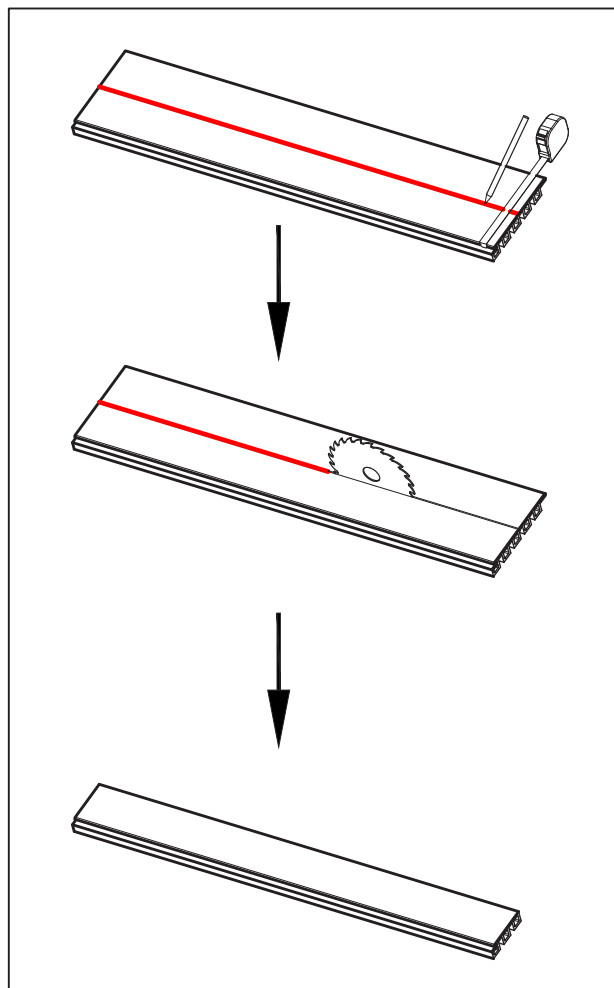
Diagram 38
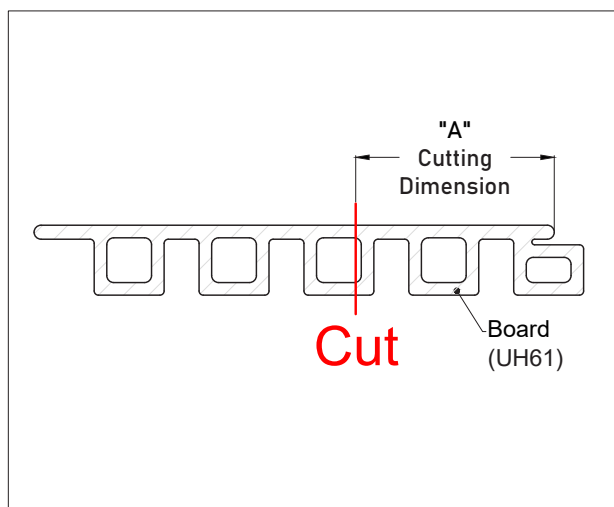
Detail 38-1

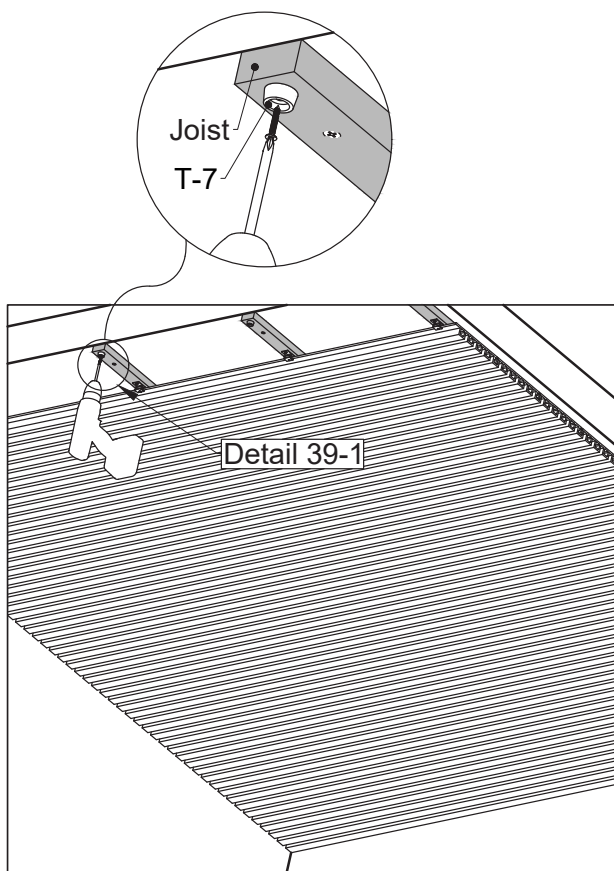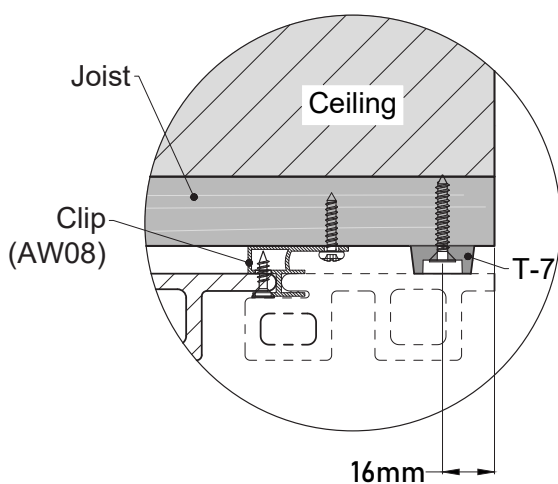**39** Then install the Rubber Stopper (T-7) onto the joists with screws, as shown in *__Diagram 39__* and *__Detail 39-1__*.

Joist

T-7

Detail 39-1

Diagram 39

Joist

Ceiling

Clip
(AW08)

T-7

16mm

Detail 39-1

40 Put the ripped Cladding Board (UH61) over the Clip (AW08) in position and pre-drill the screw holes before installation, as shown in *__Diagram 40__* and *__Detail 40-1__*.
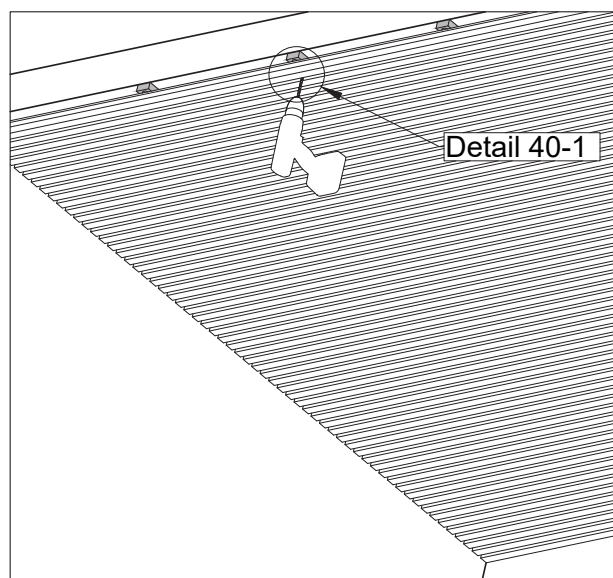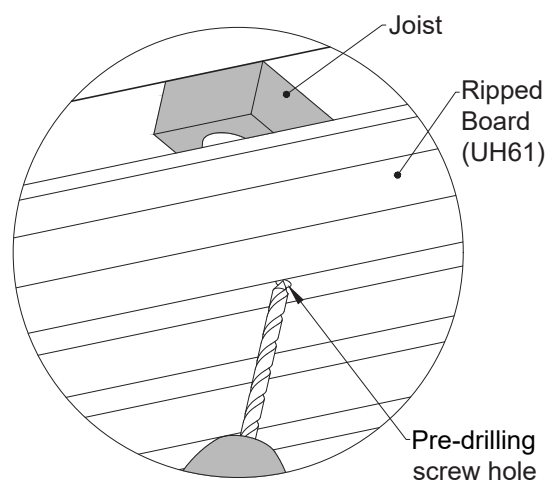
Detail 40-1

Diagram 40

Joist

Ripped Board (UH61)

Pre-drilling screw hole

Detail 40-1

41 Face fix the ripped Cladding Board (UH61) onto each joist along the length of the board over the Rubber Stopper (T-7), as shown in **_Diagram 41_** and **_Detail 41-1_**.
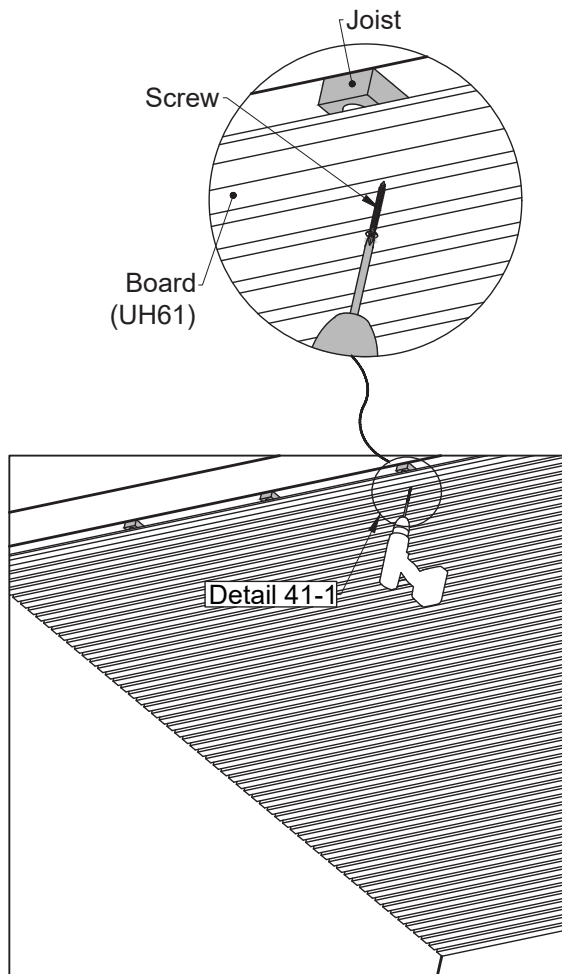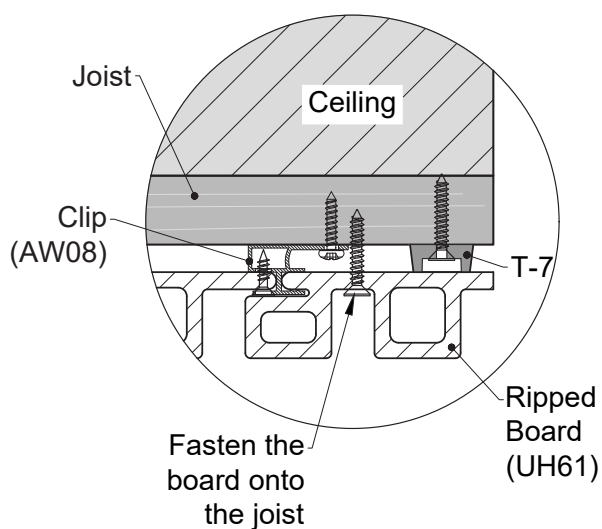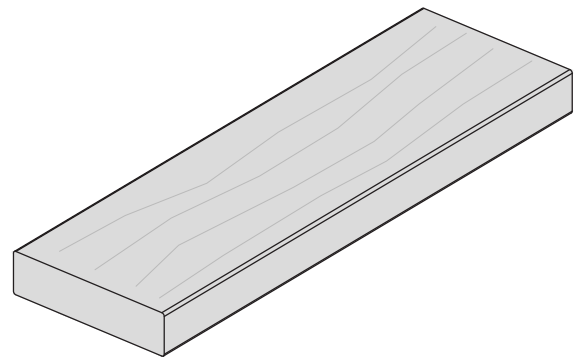
Joist

Screw

Board
(UH61)

Detail 41-1

Diagram 41

Joist

Ceiling

Clip
(AW08)

T-7

Fasten the board onto the joist

Ripped Board (UH61)

Detail 41-1

42 **Trimming**
Rip the Fascia Board (US03) into halves, as shown in **_Diagram 42_** and **_Detail 42-1_**.
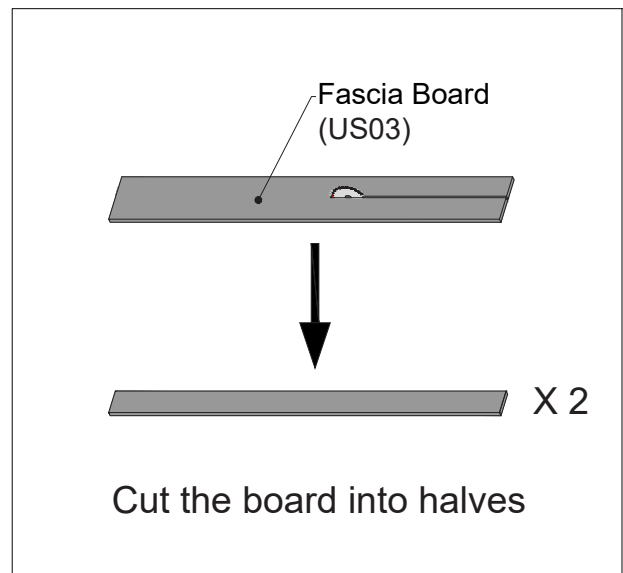
Fascia (US03)

Fascia Board
(US03)

X 2

Cut the board into halves

Diagram 42

"A"   "A"

Cut   Fascia
           Board
           (US03)

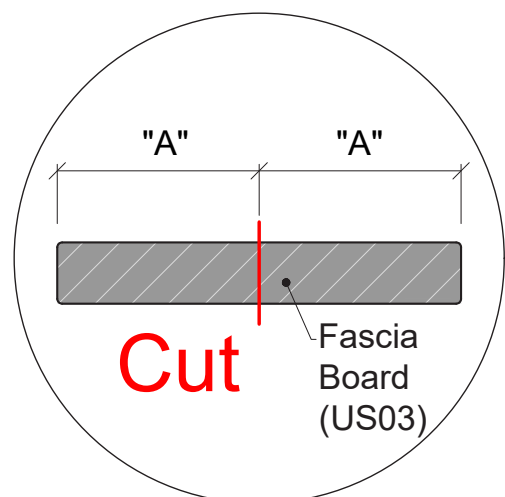**Detail 42-1**

43 Put the board's cut edge toward the ceiling board (UH61) underside, then face fix it onto the wall with screws in the distance at least 500mm on center, as shown in *Diagram 43* and *Detail 43-1*.
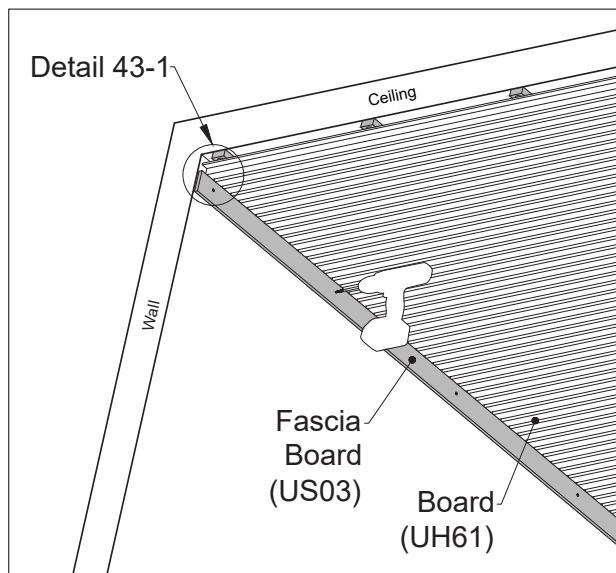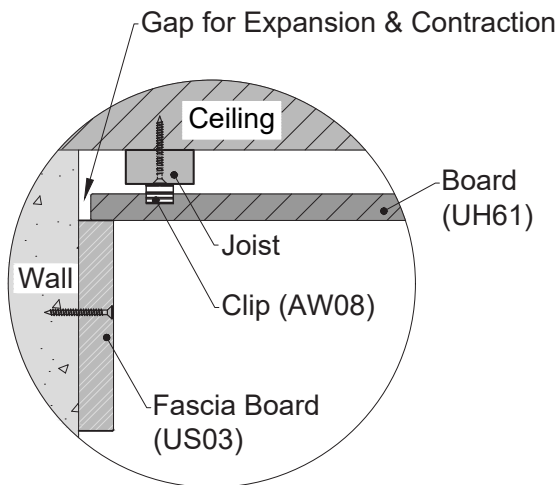

Diagram 43

Detail 43-1

44 Miter cut the trims according to the wall corner's angle for adjoining the trims in the wall corner, as shown in *Diagram 44* and *Detail 44-1*
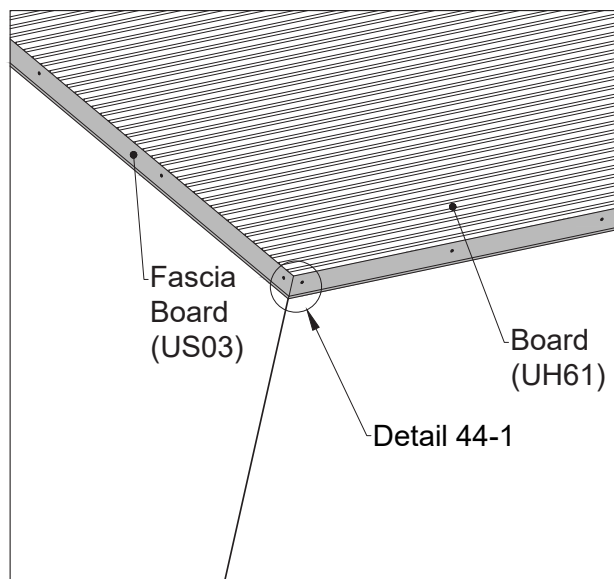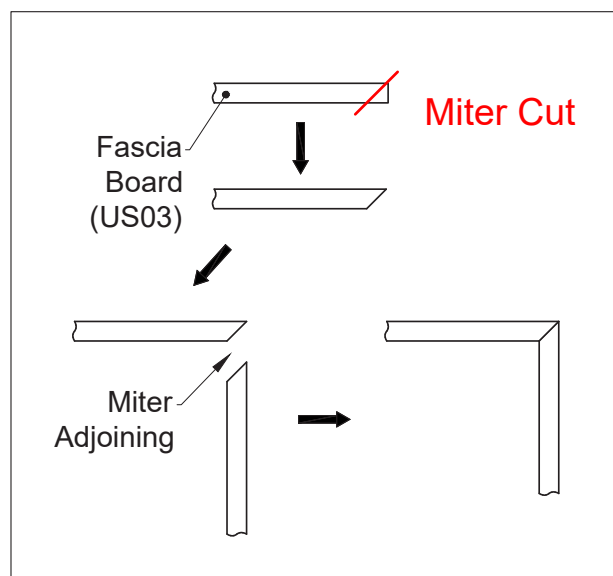

Diagram 44

Detail 44-1

Castellation Cladding Installation Guide

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