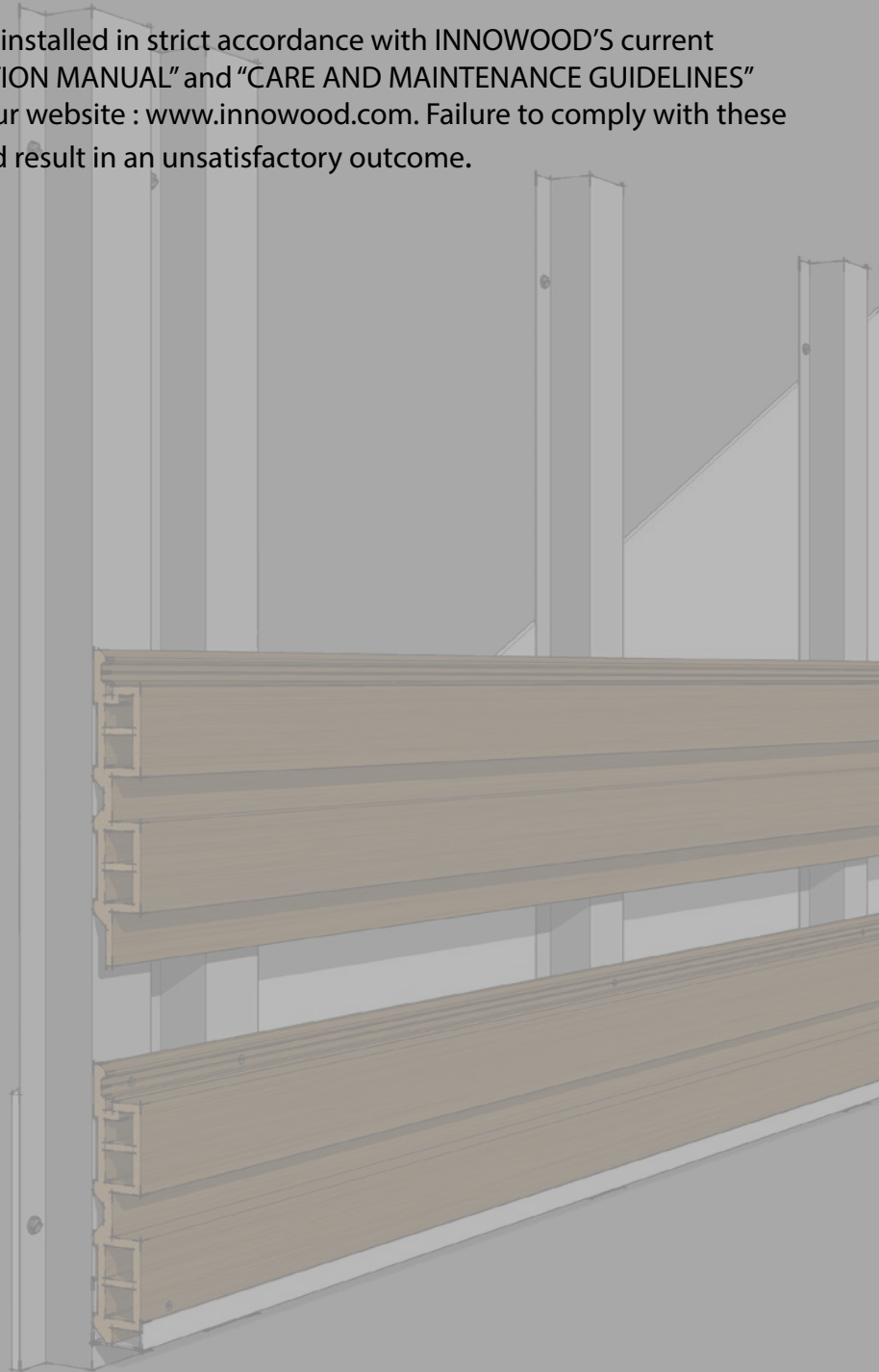


IMPORTANT : All INNOWOOD products must be installed in strict accordance with INNOWOOD'S current (at time of installation) "INSTALLATION MANUAL" and "CARE AND MAINTENANCE GUIDELINES" which can be downloaded from our website : www.innowood.com. Failure to comply with these documents may void warranty and result in an unsatisfactory outcome.



INNOCLAD

SECRET FIXED SHIPLAP CLADDING
INSTALLATION MANUAL



BEFORE YOU COMMENCE

Please note that:

The Product is subject to natural variation* in finish as part of the manufacturing process. The purchaser or their installer/ builder is responsible for inspecting, prior to installation, the colour, finish and size of the product, identifying whether the Product has any other defect or manufacturing fault, and for ensuring the Product meets surface appearance and product specification requirements. Subject to the terms of our warranty, INNOWOOD is not liable for claims made after the installation of the Product that relate to surface appearance and product specification.

*INNOWOOD product is made predominantly from timber waste, colour will vary up to +/-20% according to the timber used in its manufacture.

It is the responsibility of the specifier or other party to ensure that the information in this manual is appropriate for the intended application and further design detailing may have to be made for specific applications that fall outside the scope of the manual.

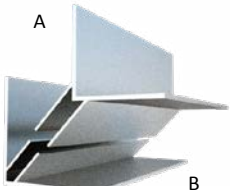
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SHIPLAP INNOCLAD PARTS

PROFILE OPTIONS

		
SECTION		
PRODUCT CODE	WC17533	WC20435
COVERAGE	150mm	180mm
SPAN CENTRES	External Use 450mm Internal Use 600mm	External Use 450mm Internal Use 600mm

ACCESSORY OPTIONS

			
Aluminium J-mould starter * Only for WC17533	Aluminium J-Trim starter	Aluminium Corner angles suitable for internal and external corners ALCCM-EL / ALCCM-IF	Aluminium T-Bar AL T-Bar
		Aluminium Corner angles suitable for internal and external corners	Aluminium T Bar for butt joints

Installation Tips and Requirements

INNOWOOD products can be worked with ordinary woodworking tools such as:

Circular Saw	Cordless Drill
Crosscut Mitre Saw	Level & Chalk Line
Carpenters Square	Tape Measure

NOTE:

To ensure long-term performance, we recommend that a professional trade person carry out the installation. The installation **MUST** be carried out in accordance with these instructions including the use of all trims and accessories.

Site storage & Product Handling

- INNOWOOD boards should not be stored in the open or covered or wrapped with plastic sheet. INNOWOOD boards are a finished product, do not dump or drop when loading or unloading. Always handle with care.
- INNOWOOD boards should be stored under cover and protected from the elements (including direct sunlight and rain) until ready to install. Remove any plastic wrap including shrink wrap and store on a dry and flat surface supported at max 450mm centres.
- When removing INNOWOOD boards from the pack, do not slide boards against each other, lift the boards and set them down carefully.
- INNOWOOD boards should be carried on their edge for better support.
- When handling INNOWOOD boards take care to avoid scratches, nicks and other damage to the boards.

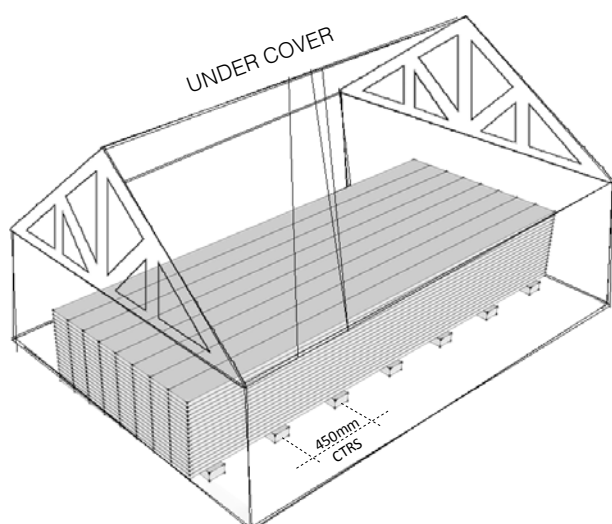
Thermal movement

Any wood based products will expand and contract with changes in temperature. The amount of expansion varies according to the amount of change in temperature. Although thermal movements are reversible, these movements due to temperature change may vary by up to 2mm per meter.

INNOWOOD boards that have been exposed to direct sun for several hours, prior to installation will have expanded more than boards left in the shade. It is important to maintain an average consistent temperature for all boards as they are being installed.

Avoid installing in full sun if ambient temperature is above 30°C. Ensure the boards are kept out of the sun until installed to limit the boards expansion prior to installation. INNOWOOD products can tolerate a temperature range from -20°C to +65°C.

If the product is to be used in an environment outside of this temperature range, please consult INNOWOOD.



Please bear in mind that:

- Where INNOWOOD boards are to be screw fixed, clearance holes must be pre-drilled before fixing (both INNOWOOD boards and accessories).
- The clearance hole to be drilled must be slightly greater than the outside screw thread diameter.
- Screws must be minimum 15mm but maximum 25mm away from board edges (unless noted otherwise)
- INNOWOOD products must not be used for any structural purpose.
- The cut surface must be sealed with a layer of protective coating such as a water based deck sealer before installation.
- When exposed to direct sunlight, surface temperature may be significantly hotter than ambient temperature.

Framing Construction Requirements

INNOWOOD cladding may be fixed to either of the framing options as set out below:

Stud Structure Framing

- Timber framing must be designed and constructed in accordance with AS1720.1 Design of Timber Structures and AS1684.2 Residential Timber Framed Construction – Non-cyclonic Areas.

Use adequately seasoned timber to minimise shrinkage and associated building movement.

- Steel framing must be designed and constructed in accordance with NASH Standard Residential and Low Rise Steel Framing and AS/NZS 4600 Cold-formed Steel Structures.

Where steel framing members are specified, use only corrosion resistant steel framing.

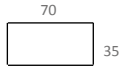
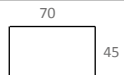
- Cladding must not be fixed directly to stud framing as adequate ventilaton is required behind cladding. Metal top hats or timber battens must always be used over the top of stud framing to create a minimum cavity of 35mm.
- Buildings must be designed and constructed within scope definitions and limitations of BCA 2019 Volume 2 for Framing, Part 3.4.3 Timber Framing and Part 3.4.2 Steel Framing.

Timber Battens (Vertical or Horizontal Boards)

INNOWOOD cladding can be screwed to timber battens provided the following requirements are satisfied:

- Timber must be minimum 35mm thick with a face width of no less than 70mm.
- Timber must be adequately seasoned & deemed for structural use.
- Timber battens must be set at max 450mm centres for external cladding or 600mm for internal cladding.
- Battens must be located expressly at the start and finish of each cladding run to enable the 1st and last screws in each board to be located 15-25mm in from end of cladding .
- Fixing spans and screw types are shown in the following tables.

MAXIMUM TIMBER BATTEN FIXING SPANS

TIMBER BATTEN	FIXING SPAN
 35 X 70mm structural timber	800mm
 45 X 70mm structural timber	1000mm

* Above fixing spans are to be used as a guide

RECOMMENDED SCREW TYPE FOR TIMBER BATTENS

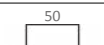
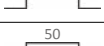
STRUCTURE	RECOMMENDED SCREW TYPE
Seasoned Timber	#14 bugle head batten screw with minimum 40mm embedment
Steel Framing	#14-10x50 self drilling hex head (35mm batten) or #14 -16 x 65mm self drilling hex head (45mm batten)
Concrete	Ø10 screw in self tapping masonry anchor with min 50mm engagement. Eg. Icons- thunderbolt pro hex head

Steel Top Hat Battens

INNOWOOD cladding can be screwed to steel top hat battens provided the following requirements are satisfied:

- Top hats must have a face width of no less than 50mm and a wall thickness of no less than 1.15mm.
- Total depth of top hat plus packing and any non compressible thermal break tape (if using) must be minimum 35mm for walls and 15mm for soffits.
Note: Thermal break must be non compressible.
- Top hats must be set at max 450mm centres for external cladding or 600mm for internal cladding .
- Top hats must be fixed to structure at the required centres as per the table below and must always be fixed through both legs at all fixing points.
- Top hats must be located expressly at the start and finish of each board run to enable the 1st and last screws in each board to be located 15-25mm in from end of cladding .

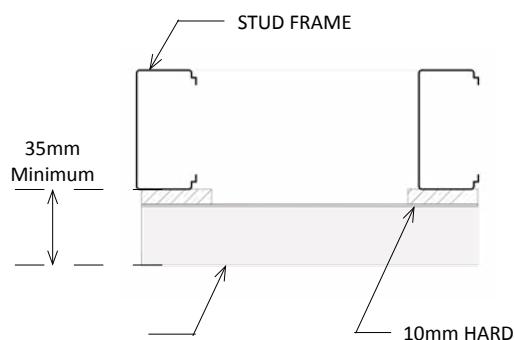
MAXIMUM STEEL TOP HAT FIXING SPAN

STEEL TOP HAT	MAXIMUM FIXING SPAN
 15 X 50mm	500mm
 24 X 50mm	700mm
 35 X 50mm	800mm
 50 X 50mm	950mm

* Above fixing spans are to be used as a guide

Thermal Break

When fixing metal top hat to metal stud framing, hard plastic packers to a minimum thickness of 10mm must be used between stud frame and top hat to provide a thermal break for heat transfer. Do not use any form of compressible material in place of hard plastic packers.



RECOMMEND SCREW TYPE FOR STEEL TOP HAT

STRUCTURE	RECOMMEND SCREW TYPE
Seasoned Timber	#12 Type 17 Hex Head Tek screw with minimum 40mm embedment
Steel Framing	#12-14 X 30mm Self drilling Hex head Tek Screw
Concrete	ø6.5 screw in self tapping masonry screw with minimum embedment of 50mm. Eg. Icons - Grabcon

General Framing Notes

- Battens/Top hats must be true plumb and level to ensure a professional outcome. Packing cannot be used between Battens/Top hats and cladding boards .
- Framing that does not meet all of the criteria in this section will be inadequate and may result in the finished cladding showing any of the following characteristics:

Expansion Joints

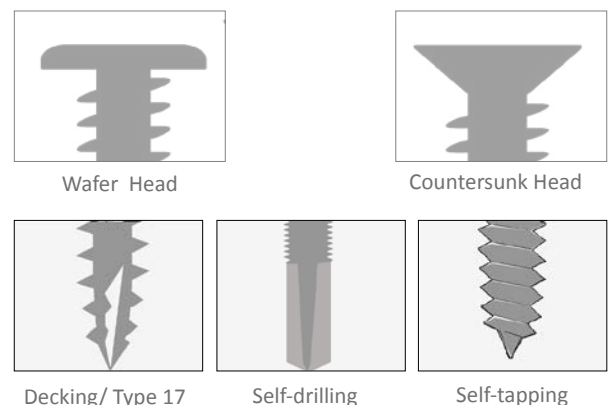
Never span cladding across expansion joints in structure. If necessary terminate the cladding on either side of any expansion joint to prevent damage to the cladding and/

Screws

Screws must comply with AS 3566 Self Drilling Screws for the Building and Construction Industries.

Screws must have a minimum Class 3 corrosion resistance, suitable for external applications in mild, moderate industrial and marine environments and Class 4 or stainless steel for severe environments.

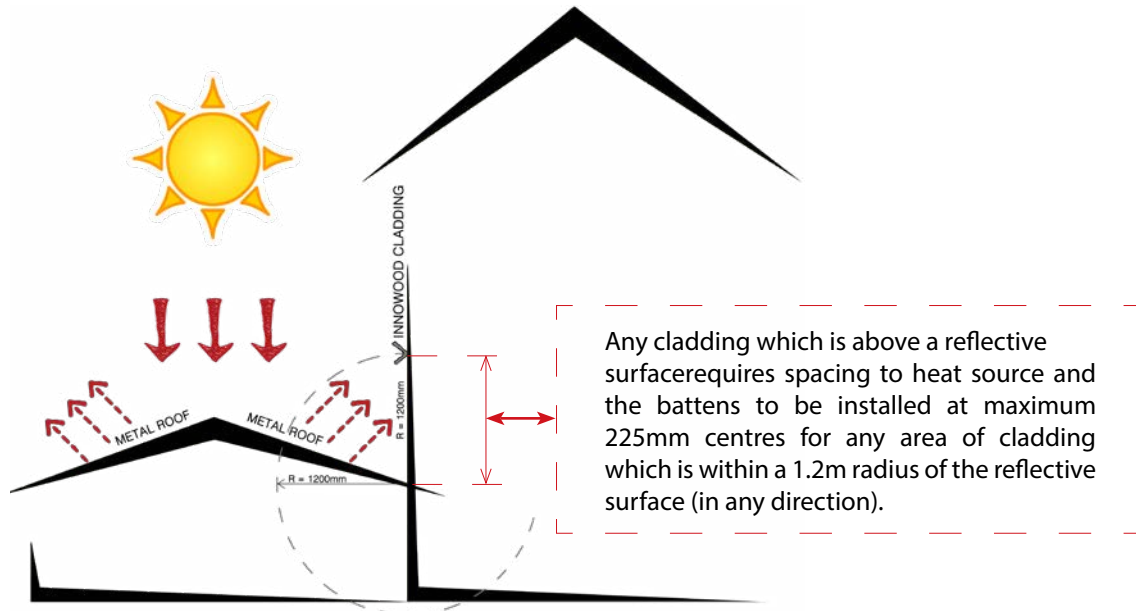
Screws with class 1 or 2 corrosion resistance may be used for internal use depending on the individual application.



DESIGN CONSIDERATIONS

INSTALLING ABOVE REFLECTIVE SURFACES -

Reflective surfaces such as metal roofing can add to the heat load of the cladding due to UV rays reflecting off the surface which may adversely affect the Innowood product under normal installation conditions. Therefore additional supports must be used to counter this as follows:



MINIMUM CAVITY SPACE -

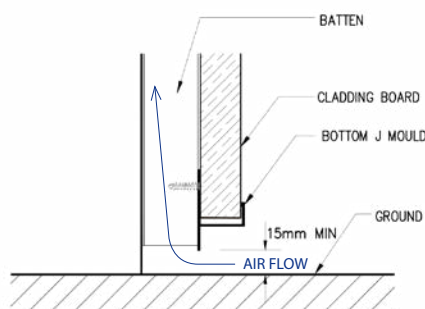
Innowood Cladding must be installed onto battens or top hats so as to achieve a cavity between boards and back structure. This spacing and cavity requirement assists in preventing the boards from over heating and potentially warping.

Minimum Wall Cavity Size : 35mm (including Thermal Break if applicable)
Minimum Soffit Cavity Size : 15mm

VENTILATION -

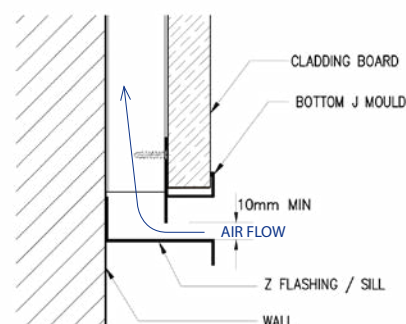
Innowood Cladding requires air flow through the cavity from bottom to top which is achieved via air flow openings at the top and bottom of the installation. For an installation with boards orientated vertically, it is necessary to use minimum 10mm packing behind the top hats / battens to allow the air to flow behind.

Depending on the situation the example most suitable from the diagrams below should be implemented.



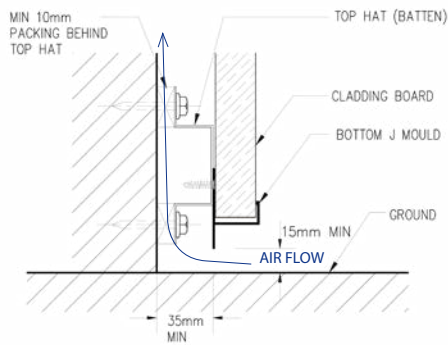
BOTTOM EXAMPLE 1

(HORIZONTAL BOARD ORIENTATION ONLY)

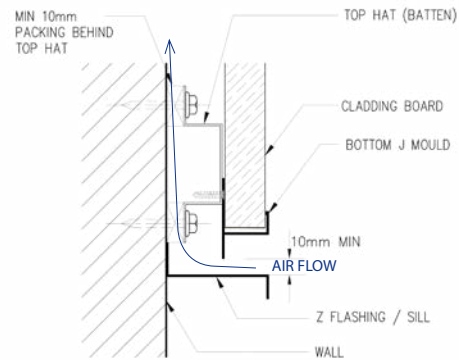


BOTTOM EXAMPLE 2

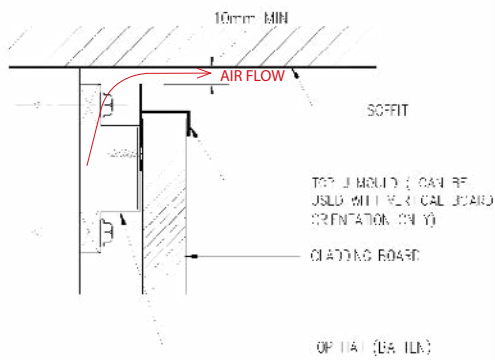
(HORIZONTAL BOARD ORIENTATION ONLY)



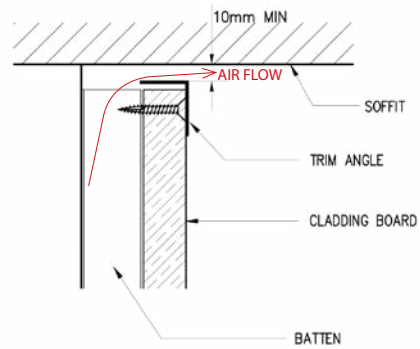
BOTTOM EXAMPLE 3
(VERTICAL BOARD ORIENTATION ONLY)



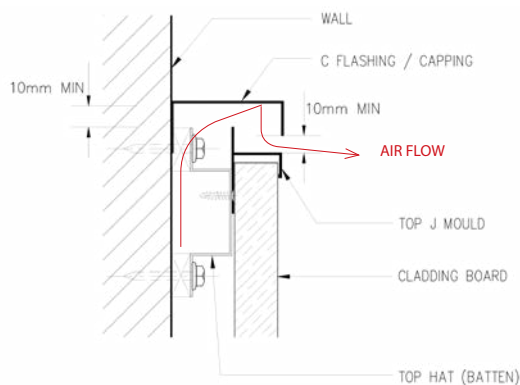
BOTTOM EXAMPLE 4
(VERTICAL BOARD ORIENTATION ONLY)



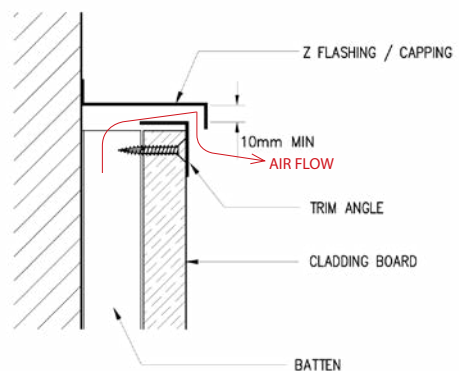
TOP EXAMPLE 1
(VERTICAL BOARD ORIENTATION ONLY)



TOP EXAMPLE 2
(HORIZONTAL BOARD ORIENTATION ONLY)



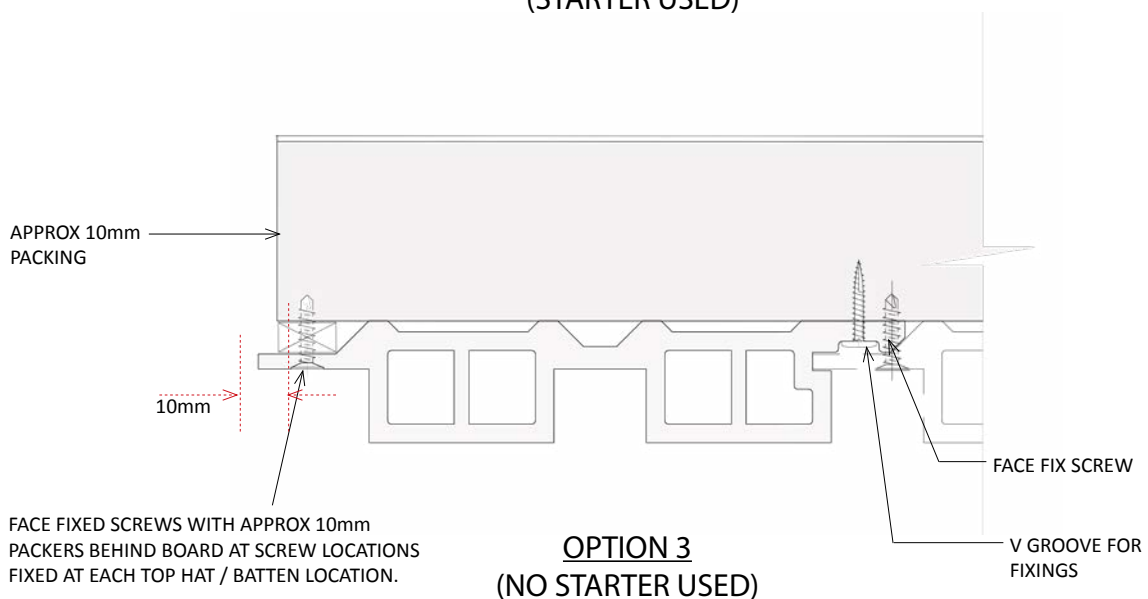
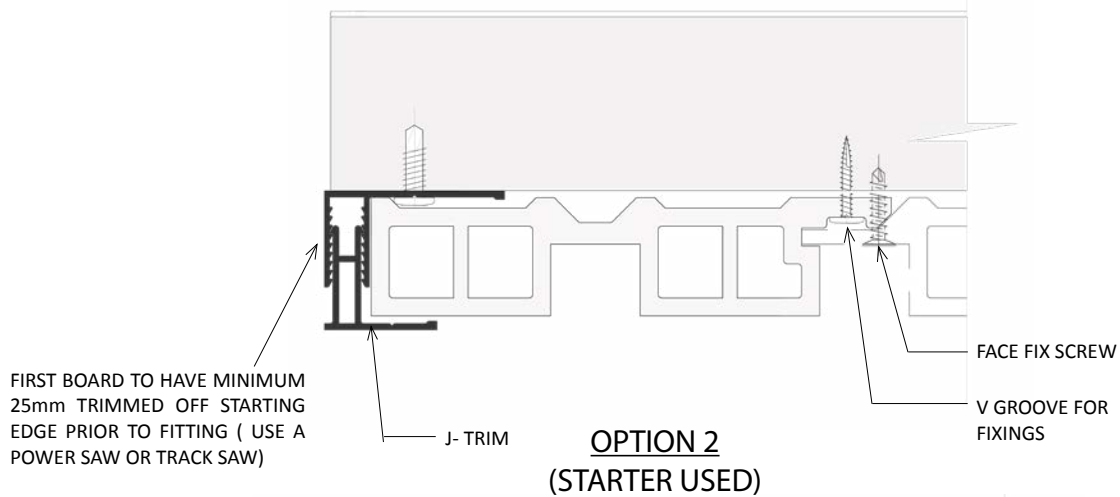
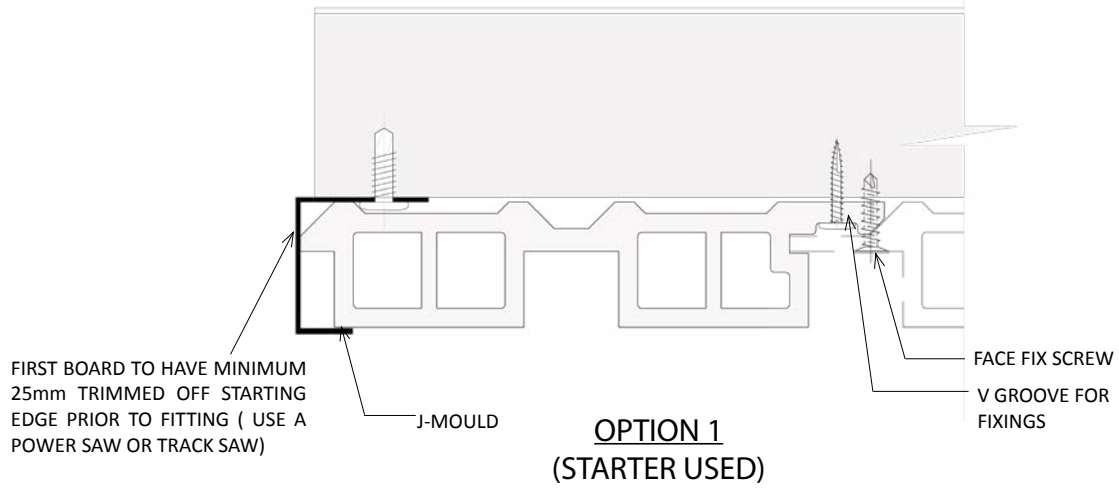
TOP EXAMPLE 3
(VERTICAL BOARD ORIENTATION ONLY)



TOP EXAMPLE 4
(HORIZONTAL BOARD ORIENTATION ONLY)

* Note: Ventilation at top is not required if cladding cavity vents into a ventilated roof space.

FIRST BOARD STARTING DETAIL (VERTICAL & HORIZONTAL)



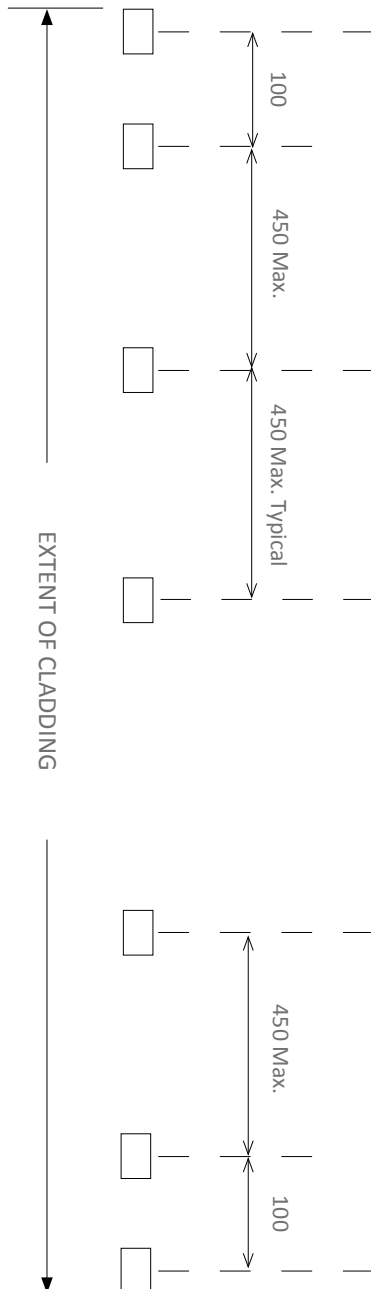
INSTALLATION PROCEDURE - VERTICAL ORIENTATION

STEP 1 FRAMING SET-OUT

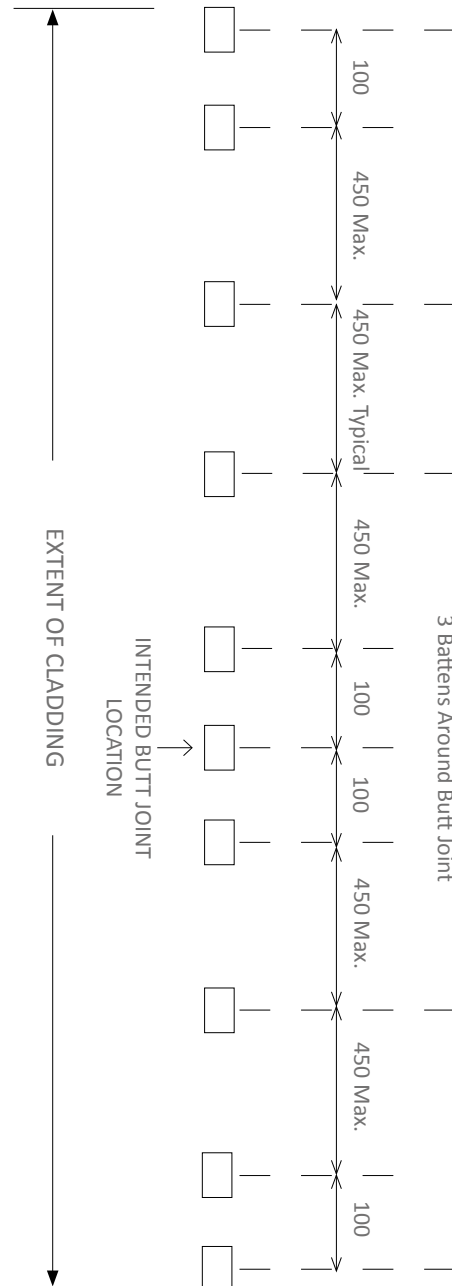
The framing set out is dependent on the preferred butt joint option

* OPTION A - Staggered Butt Joints or if there are no Butt Joints required.

* OPTION B - T-bar



OPTION A - SIDE VIEW

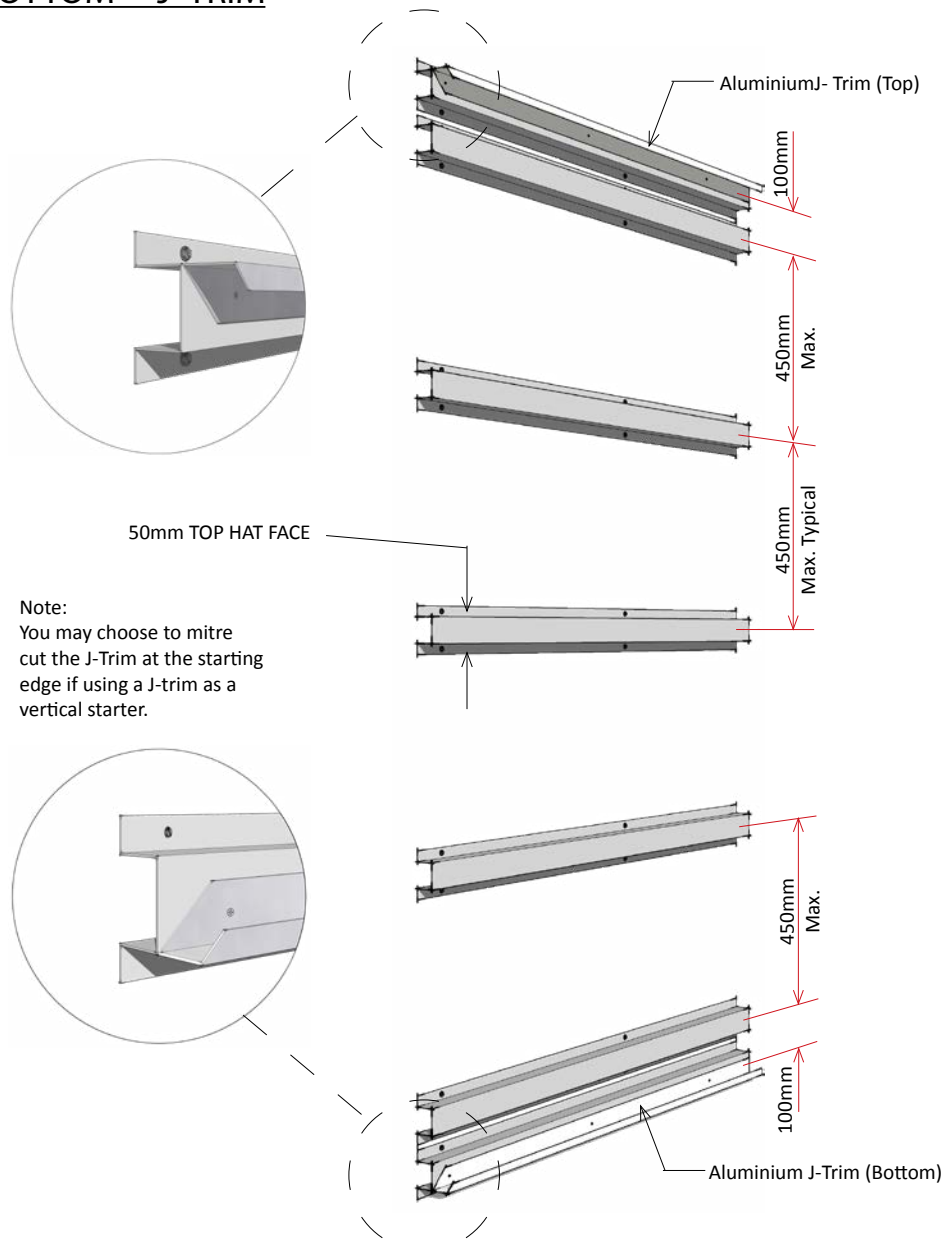


OPTION B - SIDE VIEW

Note: 70x35mm timber battens are used in illustration above however setout is identical when using metal top hat.

STEP 2

INSTALL BOTTOM - "J" TRIM



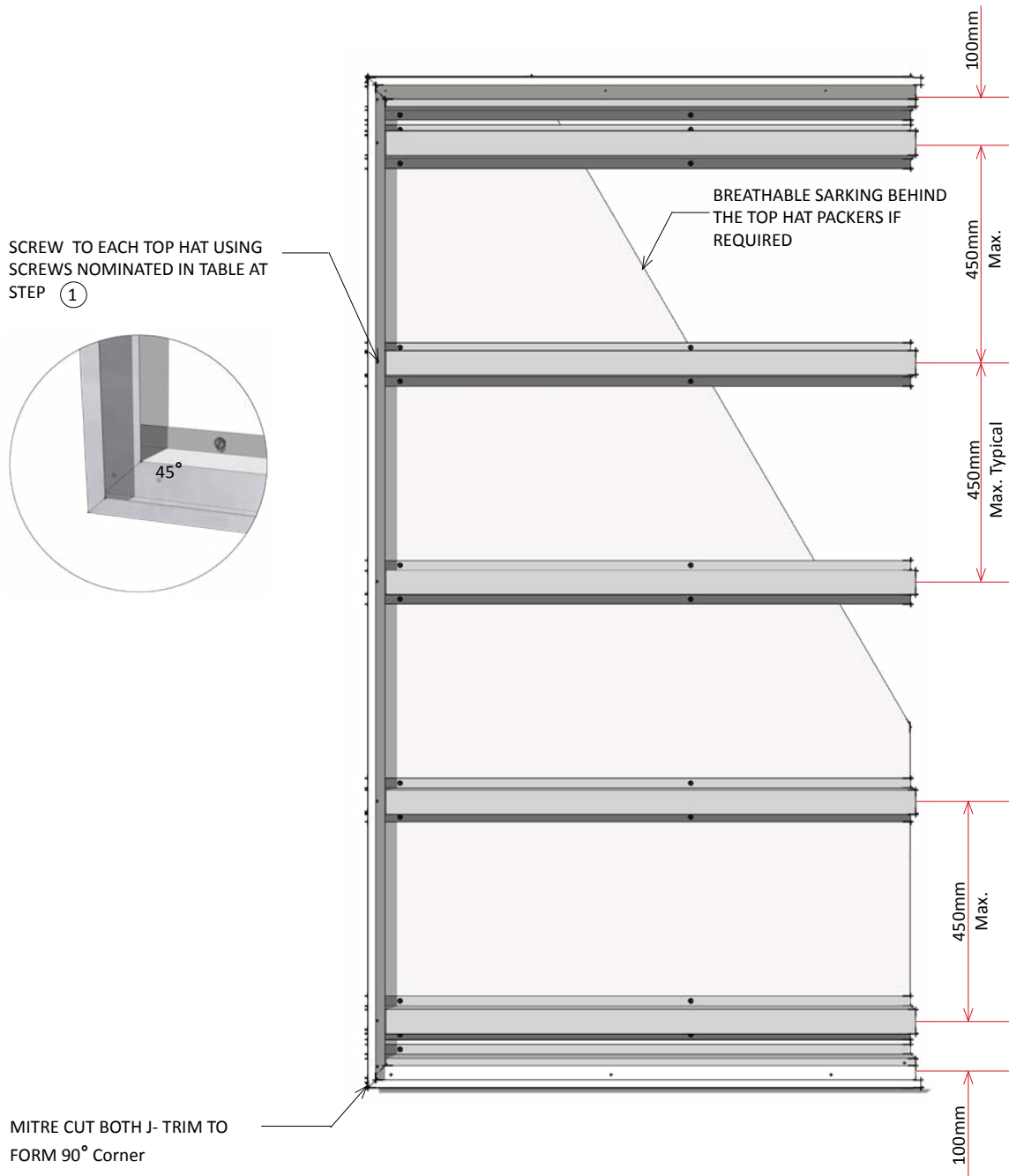
- 2a. If sarking is required it must be breathable and must be installed behind the top hat packers.
- 2b. Use a string, spirit or laser level to establish the lowest point (no less than 15mm clearance to ground) of the cladding around the perimeter of the building. Fix the J- Trim to the tophats / batten using the string, spirit or laser level to keep the starter strip in a true and level plane.
- 2c. Fix another J-Trim starter in opposite orientation at top of area to be clad. Mitre cut one end if desired.

SCREW TYPES REQUIRED :

Batten Type	J-Trim/Corner Trim	V Groove Fixing	Face Fixing through crest	Face Fixing through valley
Metal Top Hat	10g x 16mm Self-drilling wafer head	10g x 30mm Self-drilling wafer head	10g x 40mm CSK Self-drilling Screw	10g x 30mm CSK Self-drilling Screw
Seasoned Timber	10g x 25mm Type 17 Wafer head	10g x 45mm Type 17 Wafer head	10g x 50mm CSK Type 17 Screw	10g x 50mm CSK Type 17 Screw

STEP 3

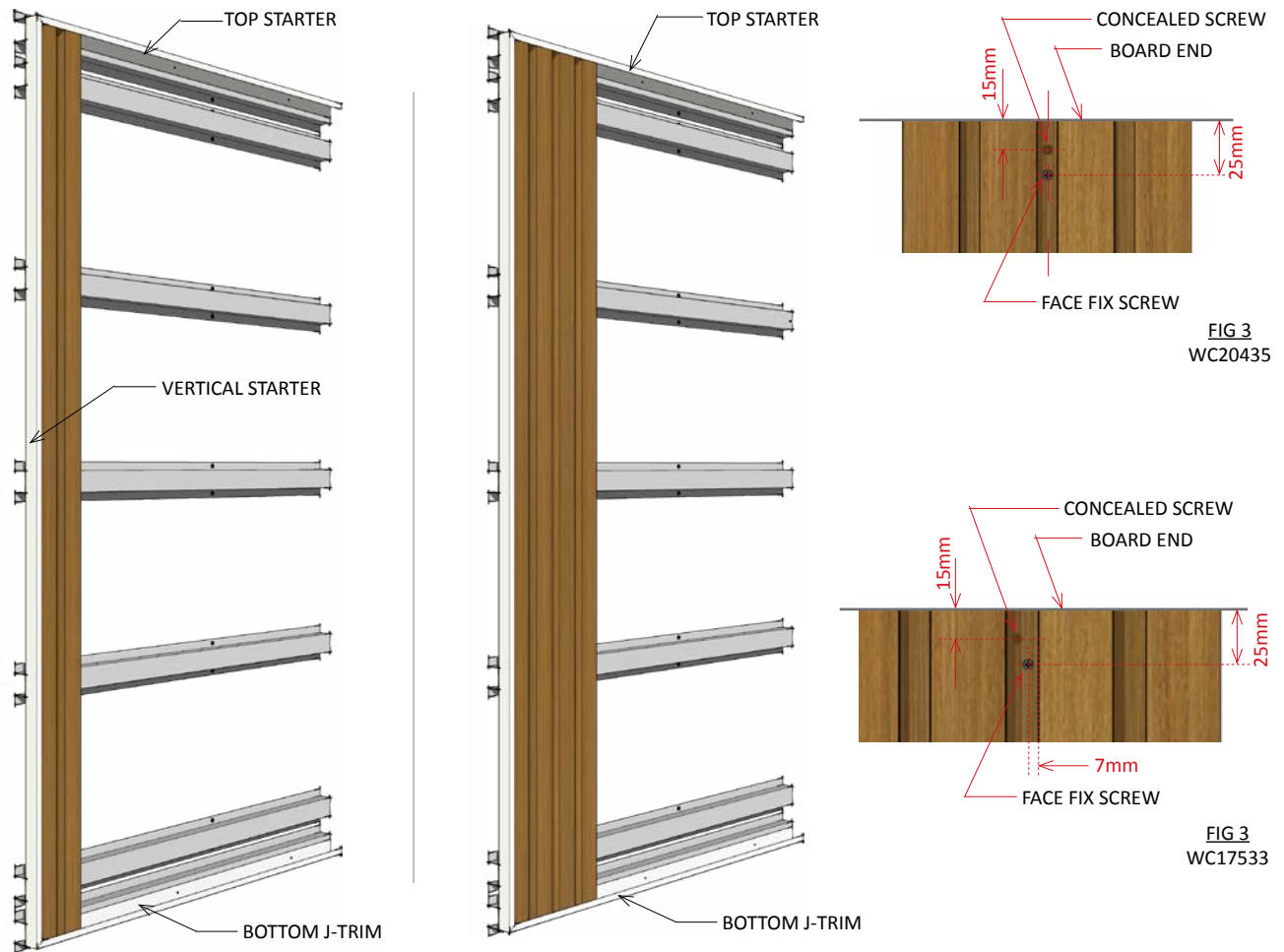
INSTALL VERTICAL - "J" TRIM



3a. Either mitre Cut or straight cut J- Trim at corner joint and screw fix to top hats using screws nominated in table at step 2 .

STEP 4

INSTALLING BOARDS



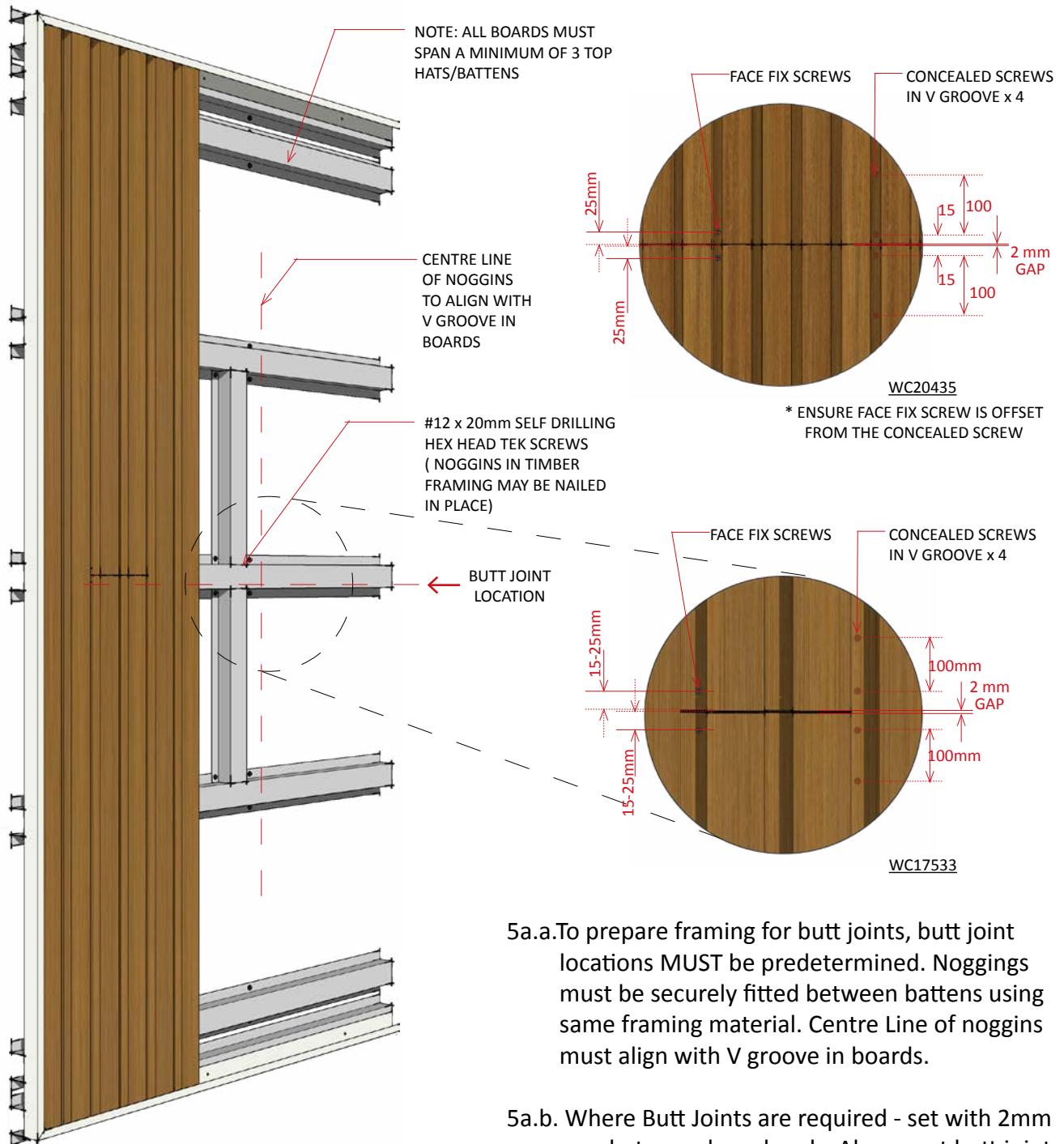
- 4a. Cut Cladding board to required length.
- 4b. Position the first cladding board into the bottom J-Trim and press firmly into vertical J-Trim to ensure full engagement. Pre-drill clearance holes in board for screws along V groove in line with tophat / Batten. Screw fix the cladding board onto the top hat using the screw type as nominated in the table at step ②. And snap outer J-Trim to over first board.
- 4c. If a vertical J-Trim is not used for starting edge you must face fix 10mm in from starting edge at Max. 450mm CTRS.
- 4d. Position the second cladding board next to the first ensuring that the board is properly seated and plumb. Gently tap into place with a rubber mallet if required while engaging with previous board. Pre drill and screw board into place along V groove.
- 4e. Face Fix board ends as per Fig.3
- 4f. Repeat step 4 & 5 until only the last board remains.

NOTE: - All boards must span a minimum of 3 Top Hats / Battens

STEP 5a - OPTION A

BUTT JOINT TREATMENT - STAGGERED

NOTE: Butt joints can be set in line or randomly however all boards must span minimum 3 top hats / battens.



5a.a. To prepare framing for butt joints, butt joint locations MUST be predetermined. Noggins must be securely fitted between battens using same framing material. Centre Line of noggins must align with V groove in boards.

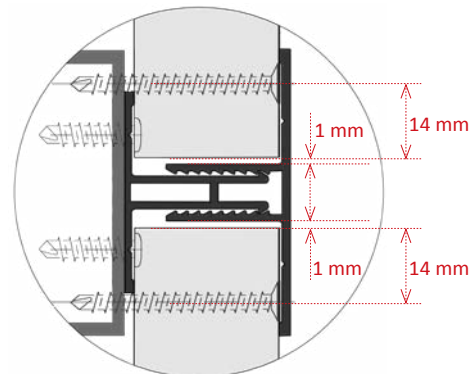
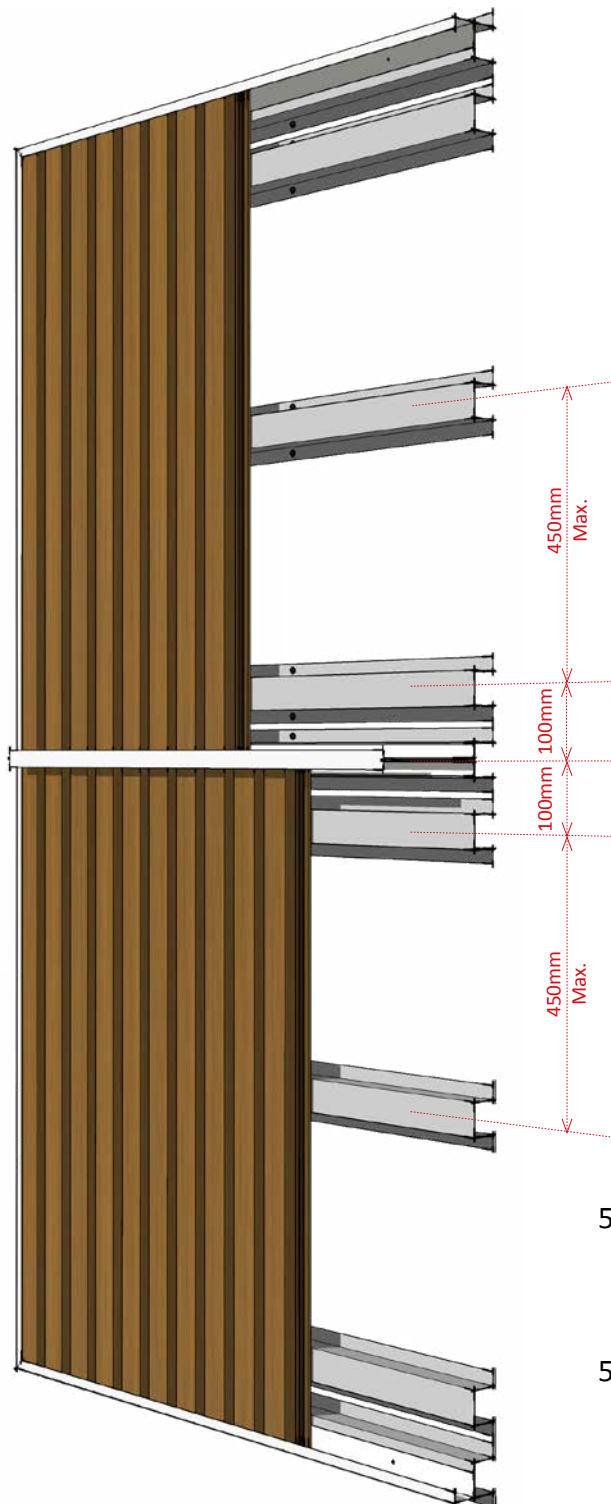
5a.b. Where Butt Joints are required - set with 2mm gap between board ends. Always set butt joint over a single top hat/batten.

5a.c. Silicone should be applied to board end prior to setting up against adjoining boards to assist in a weather tight installation.

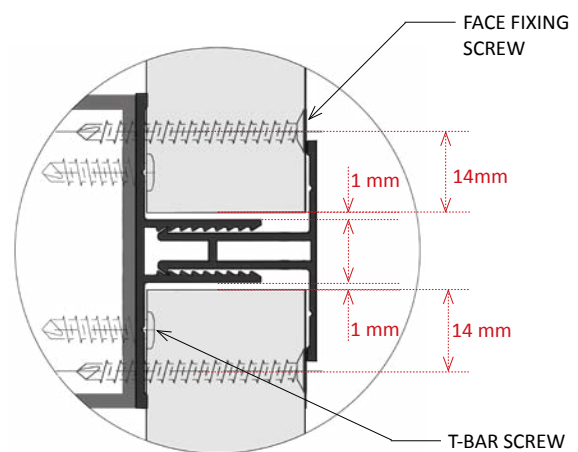
5a.d. Pre-Drill and screw boards along v groove as indicated. Pre-drill and insert face fix screws either side of butt joint in valleys as per all board ends.

STEP (5b) - OPTION B

BUTT JOINT TREATMENT - T BAR



ALTERNATIVE T-BAR ORIENTATION



5b.a. Fix T Bar Rear to Tophats at butt joint location at maximum 600mm Centres along both sides.

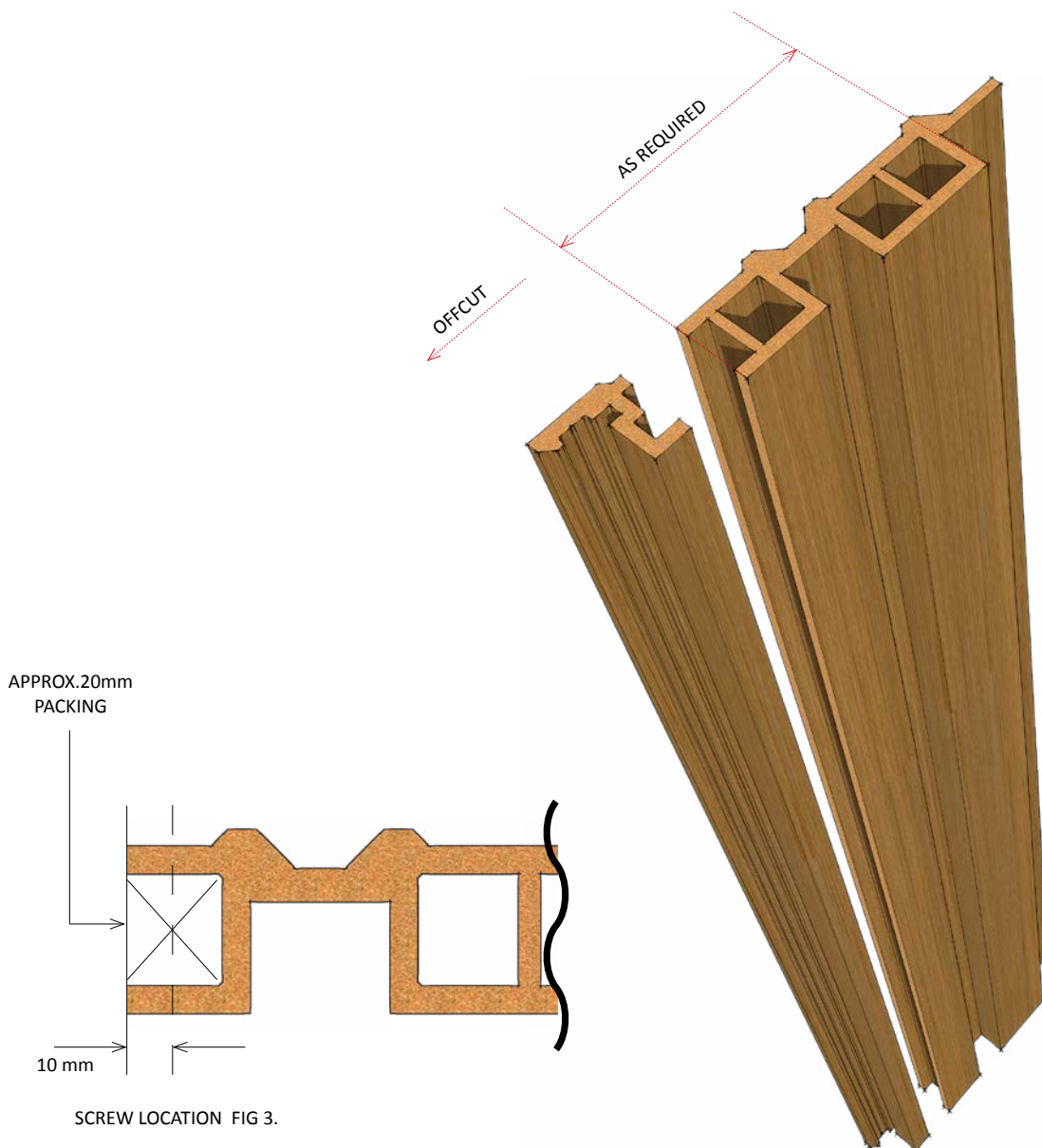
5b.b. Install Boards with a 1mm clearance gap to T Bar aluminium rear clip. Ensure boards are screwed (in v groove) to both centre top hat and next top hat which is 100mm away from centre top hat.

5b.c. Ensure face fixing is carried out at butt joint as per Fig.3 at step (4b).

5b.d. Press T Bar front into rear to finish off and cover the butt joint. Tap with a rubber mallet if needed.

STEP 6

PREPARE FINAL BOARD

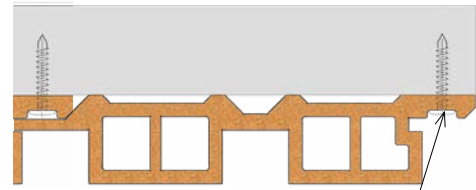
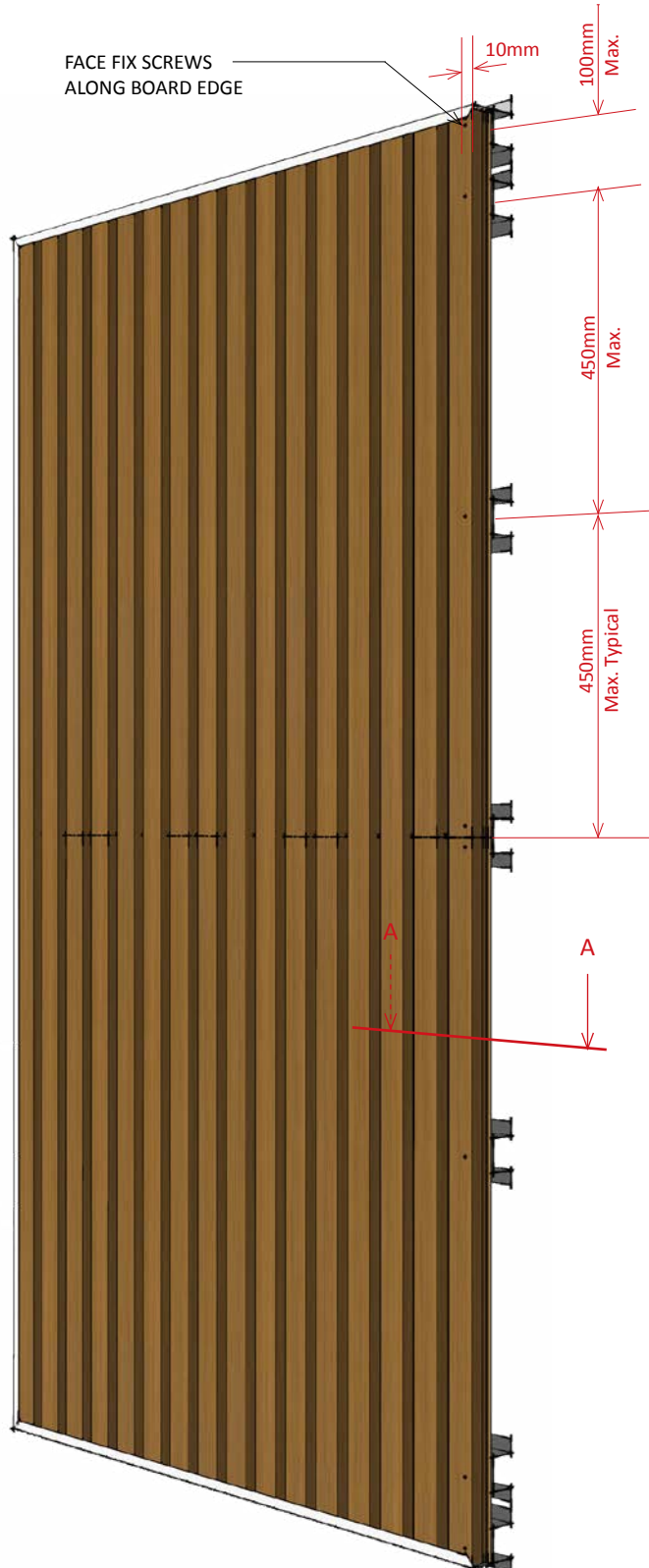


SCREW LOCATION FIG 3.

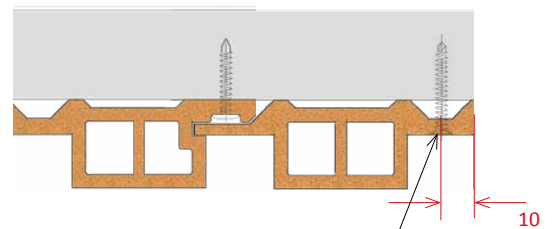
- 6a. Cut last board to required length.
- 6b. Measure remaining un-clad area to determine the width of the final board. If the board can be slid on from the edge then the board can be ripped to leave a gap of only 1-2mm from the finished structure/element. If this is not possible then the board may have to be ripped to achieve a finished gap of up to 10mm.
- 6c. Rip Board down in length to achieve required size using a power saw, track saw or similar. Dispose of the offcut.
- 6d. If ripped board exposes a cavity which will need to be screwed through then packing should be glued in at screw locations. Ref Fig 3. Packing should be approx 20mm Thick x min 40mm long.

STEP 7

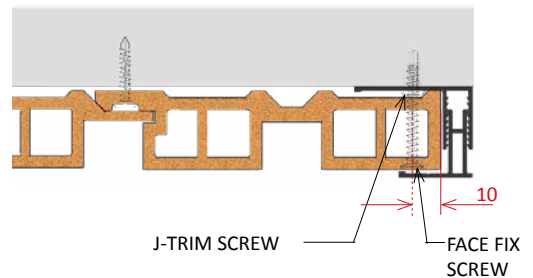
INSTALL FINAL BOARD



SECTION A-A
EXAMPLE 1



SECTION A-A
EXAMPLE 2

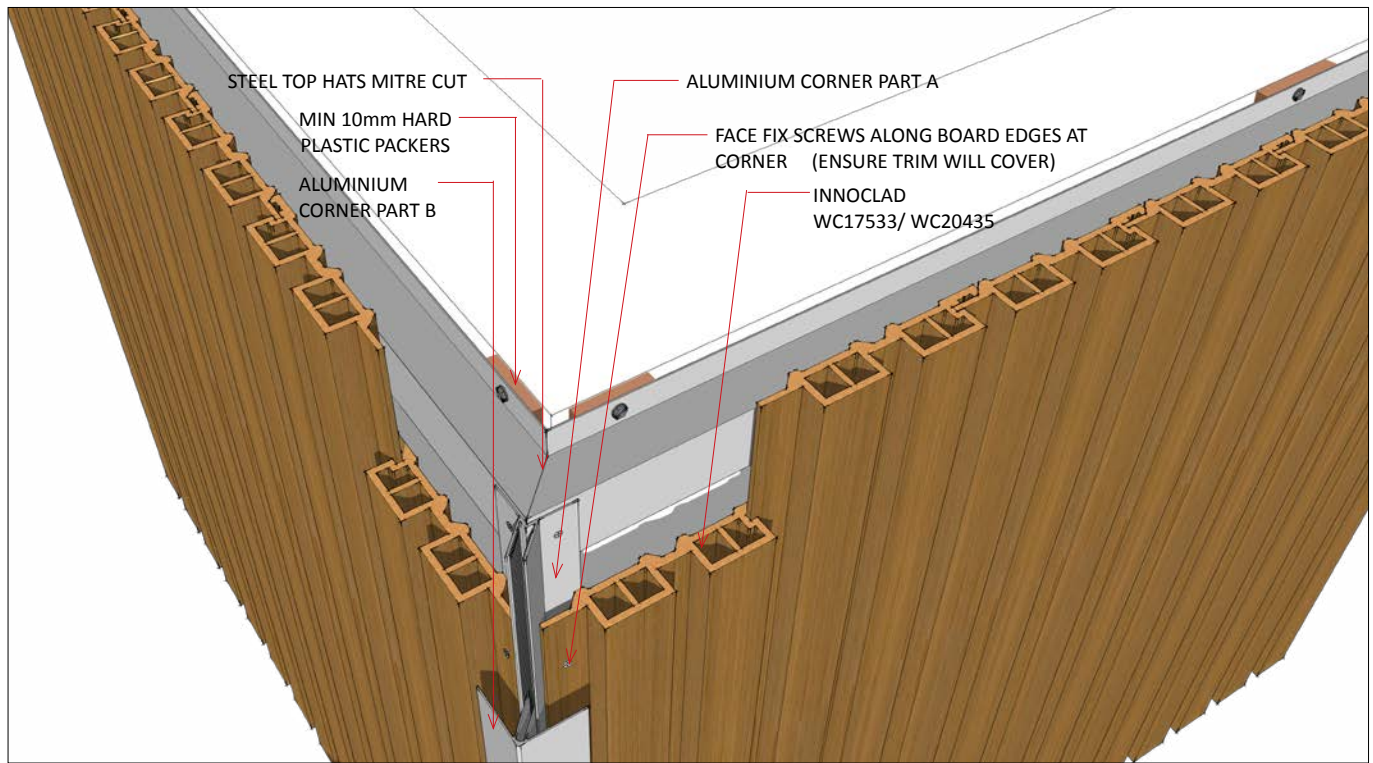


SECTION A-A
EXAMPLE 3

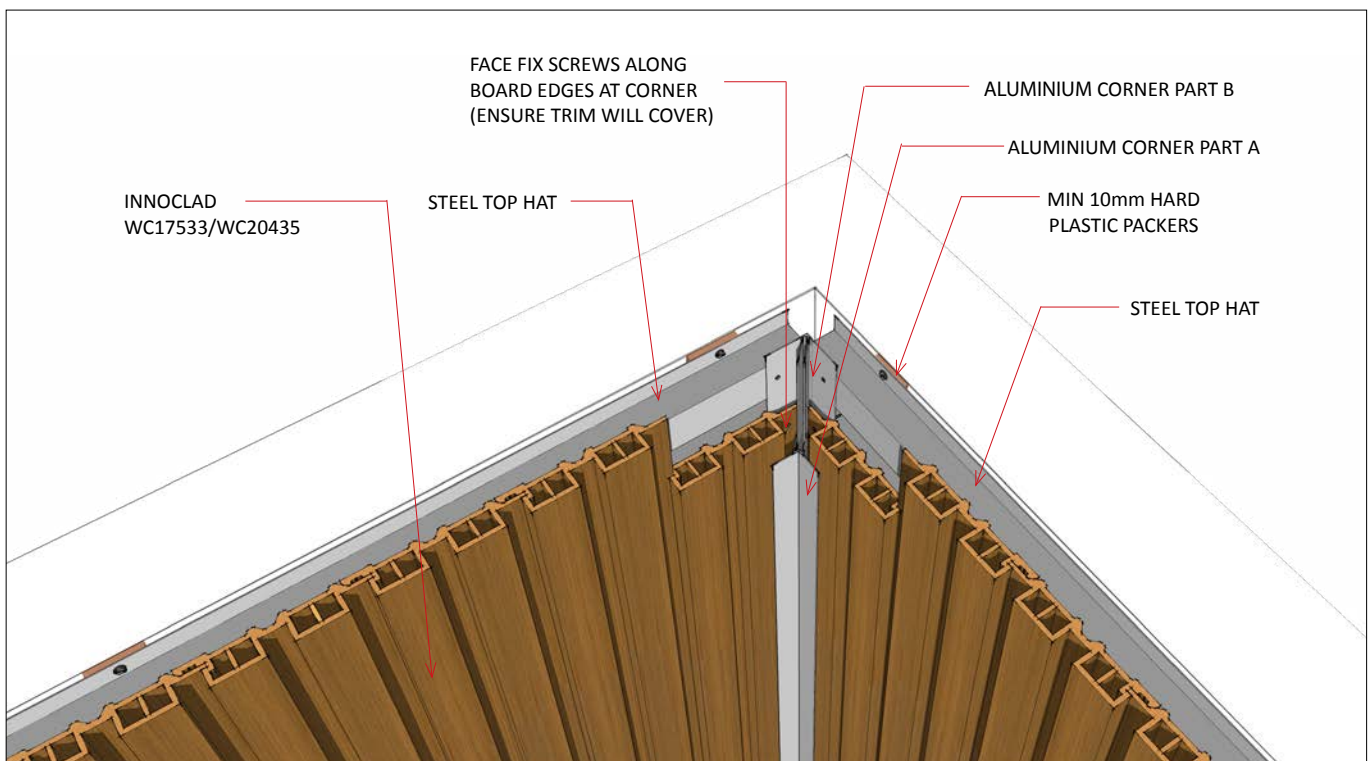
- 7a. Position final board next to previous board and position into place, ensuring board is properly seated & engaged. Gently tap with a rubber mallet if needed.
- 7b. Pre-Drill clearance holes 10mm in from leading edge in alignment with top hats.
- 7c. Screw fix the board using the correct screws nominated in the table at step ②. Packing must be used at screw locations if a cavity has been exposed due to ripping.
- 7d. A J-Trim or similar may be used to cover screw heads if desired.

STEP 8

CORNER DETAIL OPTION



EXTERNAL CORNER TREATMENT



INTERNAL CORNER TREATMENT

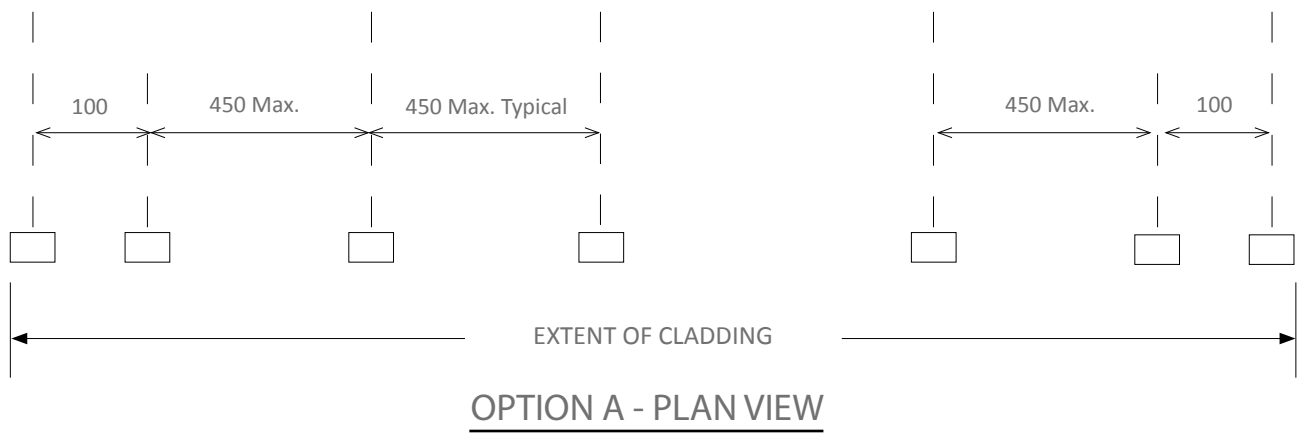
- All screws are minimum 15mm to 25mm away from board edges unless noted otherwise.
- All boards must be face fixed.

INSTALLATION PROCEDURE - HORIZONTAL ORIENTATION

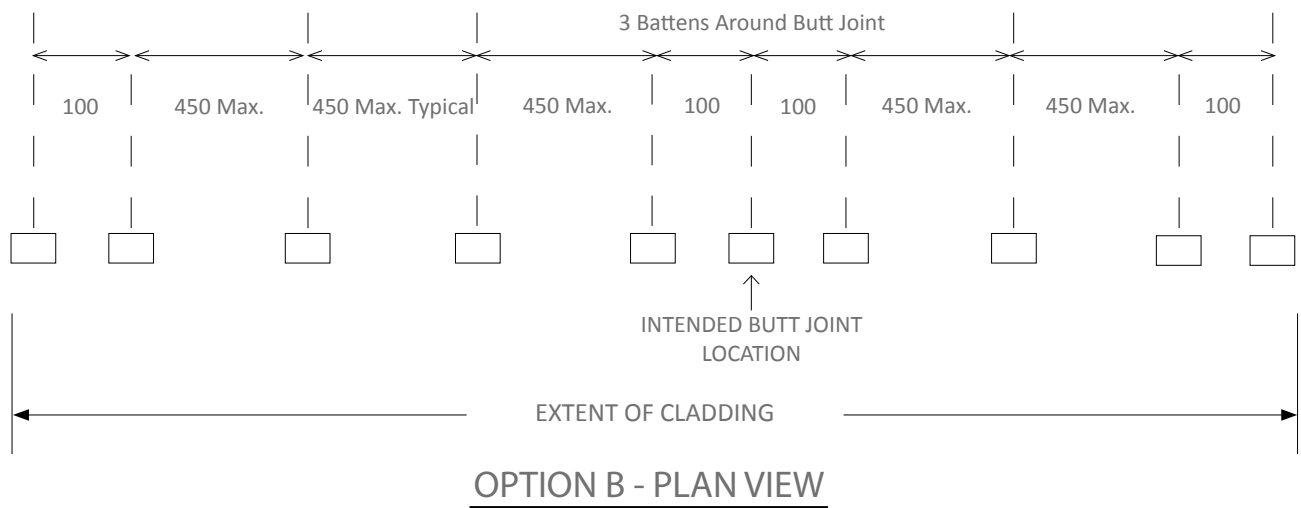
STEP ① FRAMING SET-OUT

The framing set out is dependent on the preferred butt joint option

* **OPTION A - Staggered Butt Joints** or if there are no Butt Joints required.



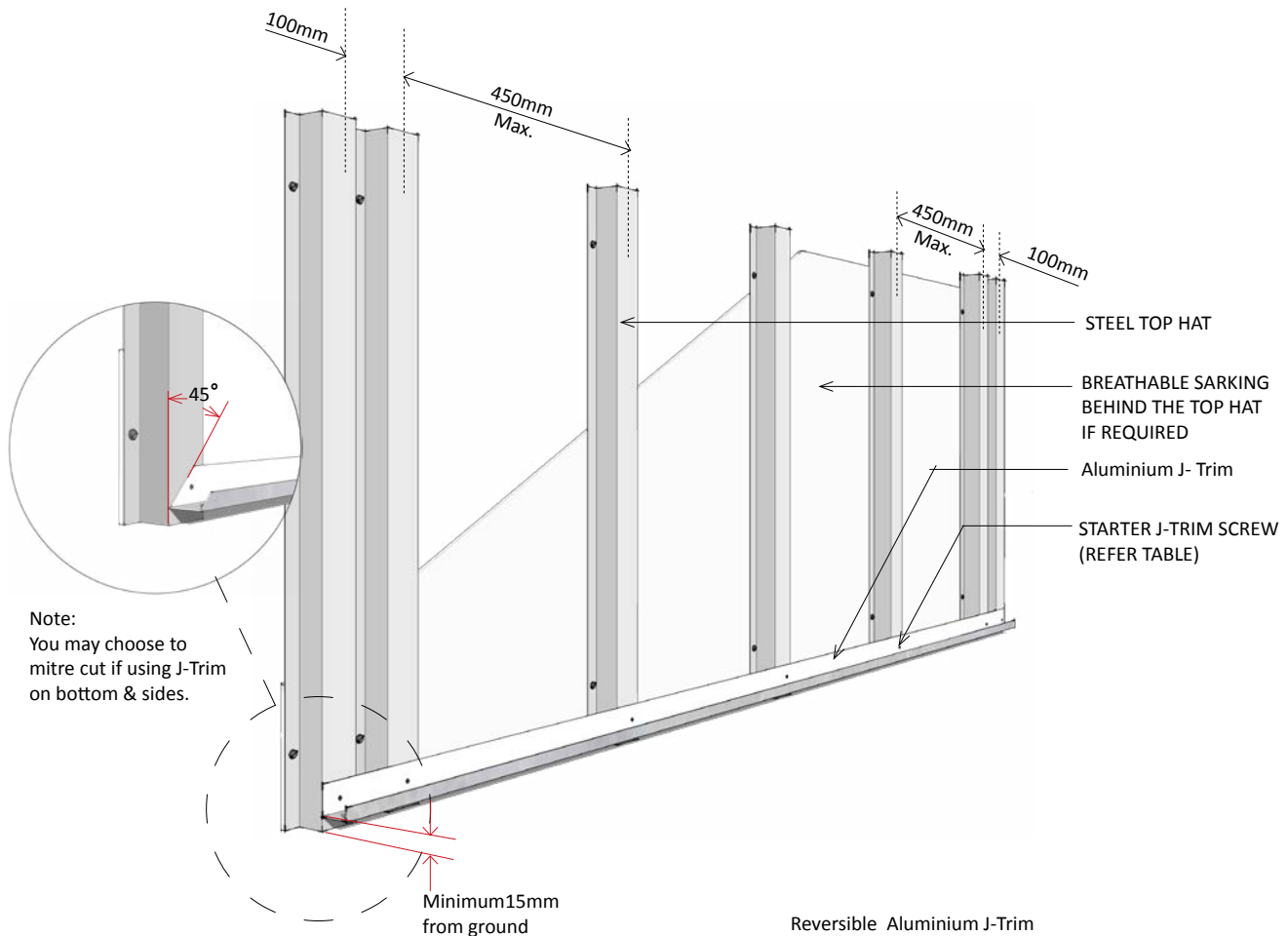
* **OPTION B - T-bar**



Note: 70x35mm timber battens are used in illustration above however setout is identical when using metal top hat.

STEP 2

INSTALL STARTER J-TRIM



2a. If sarking is required it must be breathable and must be installed behind the top hat packers.

2b. Use a string, spirit or laser level to establish the lowest point (no less than 15mm clearance to ground) of the cladding around the perimeter of the building. Fix the Aluminium J-Trim to each tophat / batten, using a string, spirit or laser level to keep the J-trim in a true and level plane.

SCREW TYPES REQUIRED :

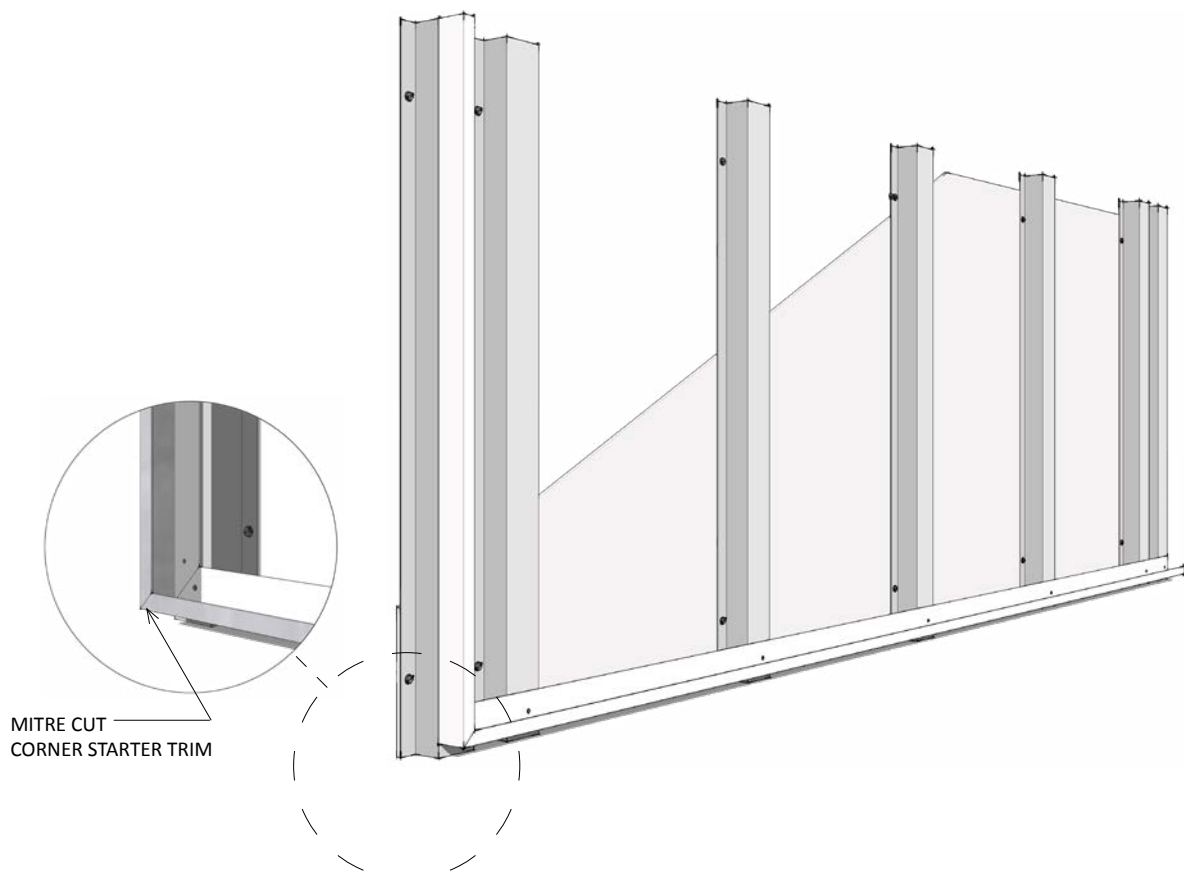
Batten Type	J-Trim/Corner Trim	V Groove Fixing	Face Fixing through crest	Face Fixing through valley
Metal Top Hat	10g x 16mm Self-drilling wafer head	10g x 30mm Self-drilling wafer head	10g x 40mm CSK Self-drilling Screw	10g x 30mm CSK Self-drilling Screw
Seasoned Timber	10g x 25mm Type 17 Wafer head	10g x 45mm Type 17 Wafer head	10g x 50mm CSK Type 17 Screw	10g x 50mm CSK Type 17 Screw

NOTE

- Provision should be made for adequate drainage and ventilation behind the cladding.
- All screws are minimum 15mm to 25mm away from board edges unless noted otherwise.

STEP 3

INSTALL VERTICAL J-TRIM



3a. Mitre cut bottom end of Starter Trim (if using Starter Trim as bottom starter) and align with bottom Starter J-Trim. Screw off to structure at max 600mm centres.

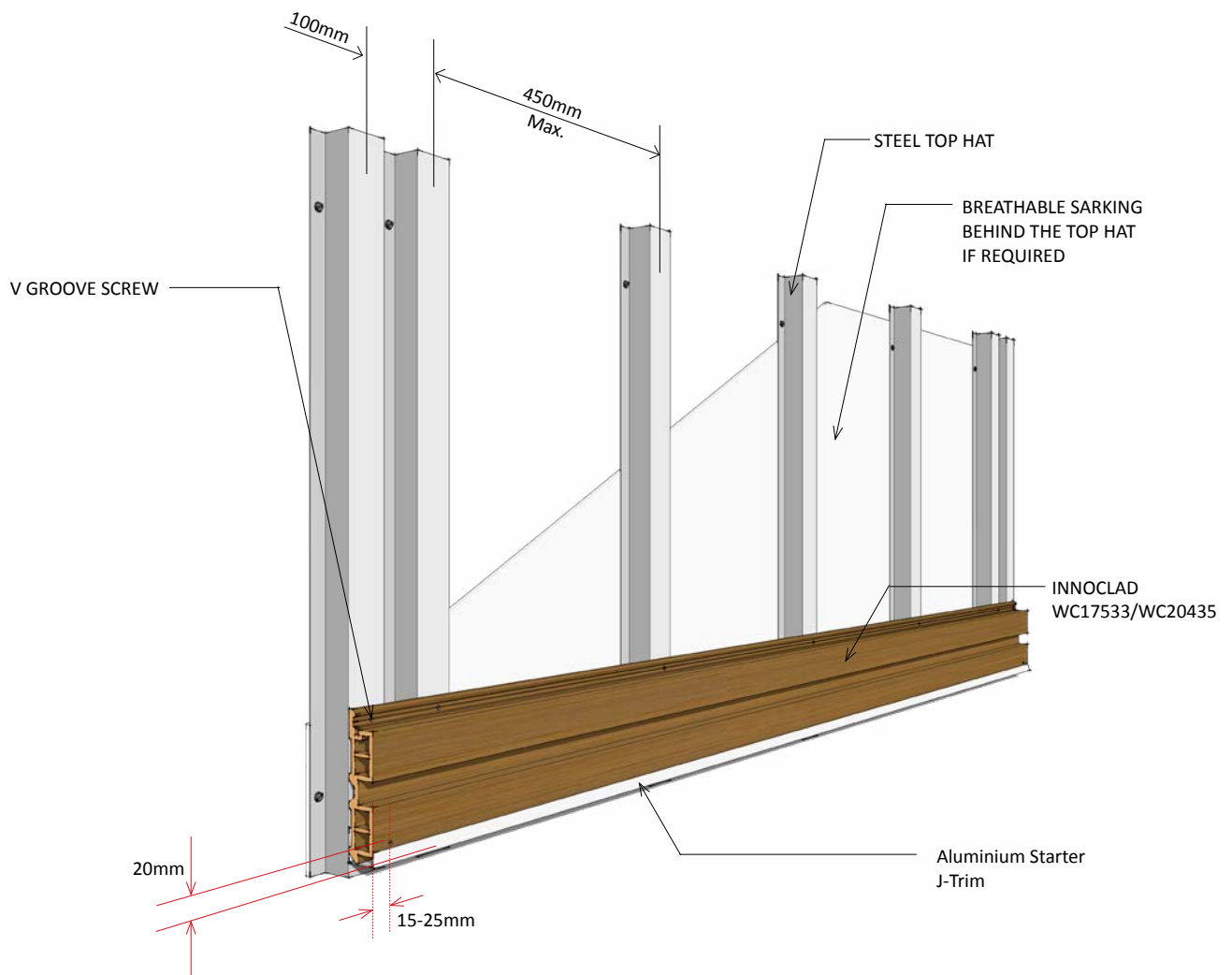
(NOTE: Top cut edge should normally remain square)

3b. Repeat on other side (if using on both sides) and around windows and openings.

(NOTE: If using corner trim please refer to Step 9)

STEP 4

INSTALL FIRST BOARD



(NOTE: Vertical Starter Trims are not shown for clarity)

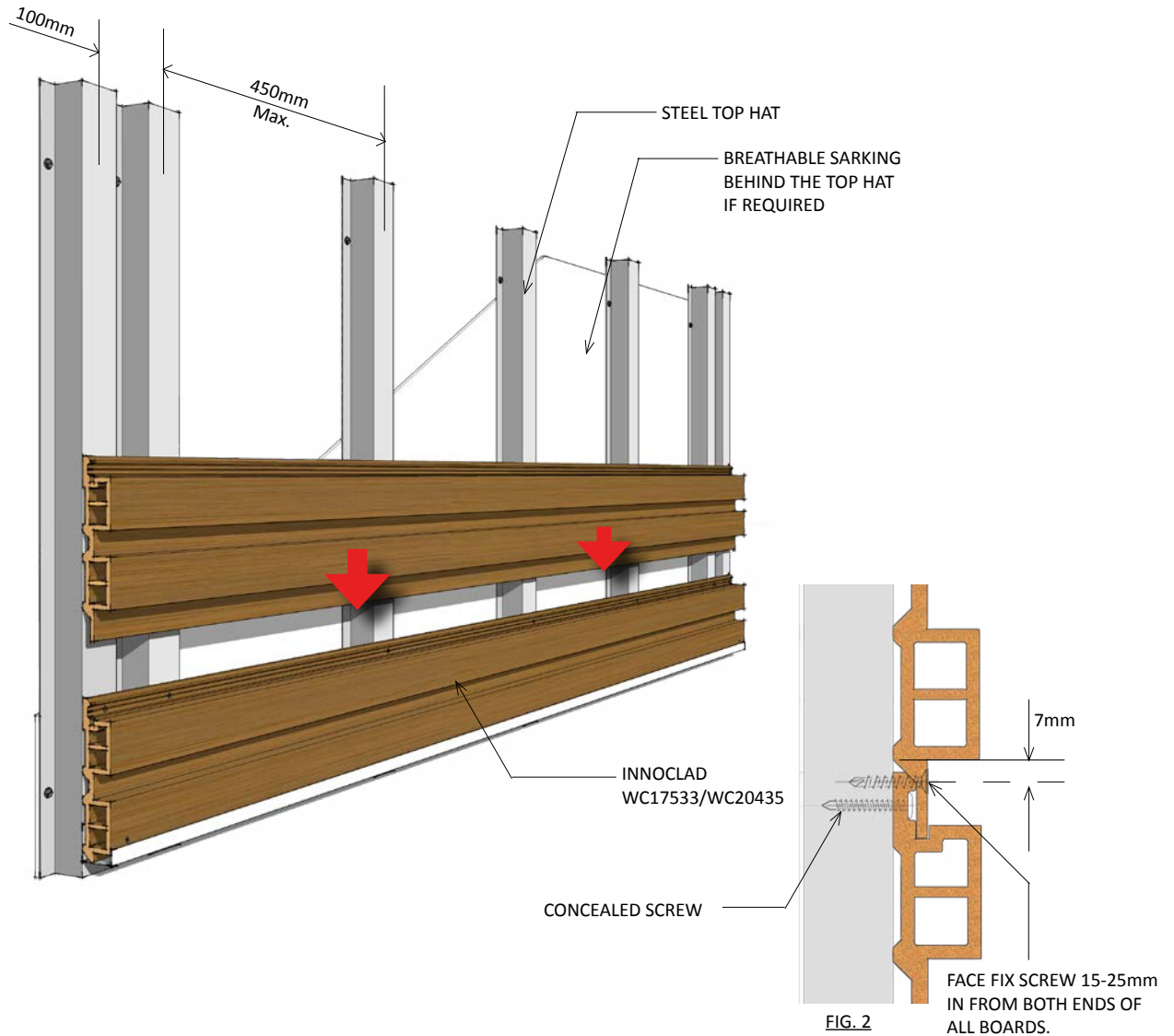
- 4a. Cut first cladding board to required length. Allow minimum 2mm clearance at each end of board.
- 4b. Position the first row of cladding onto the starter trim ensuring it is firmly seated. Pre-drill clearance holes in board for screws along v groove in line with tophat / batten.
- 4c. Screw fix the cladding board onto the top hat / battens using the screw type as nominated in the table at Step ②.
- 4d. Insert face fix screws (1x each end) where indicated above.

NOTE: - All boards must span a minimum of 3 Top Hats / Battens otherwise distortion may occur.

STEP 5

INSTALL TYPICAL BOARDS

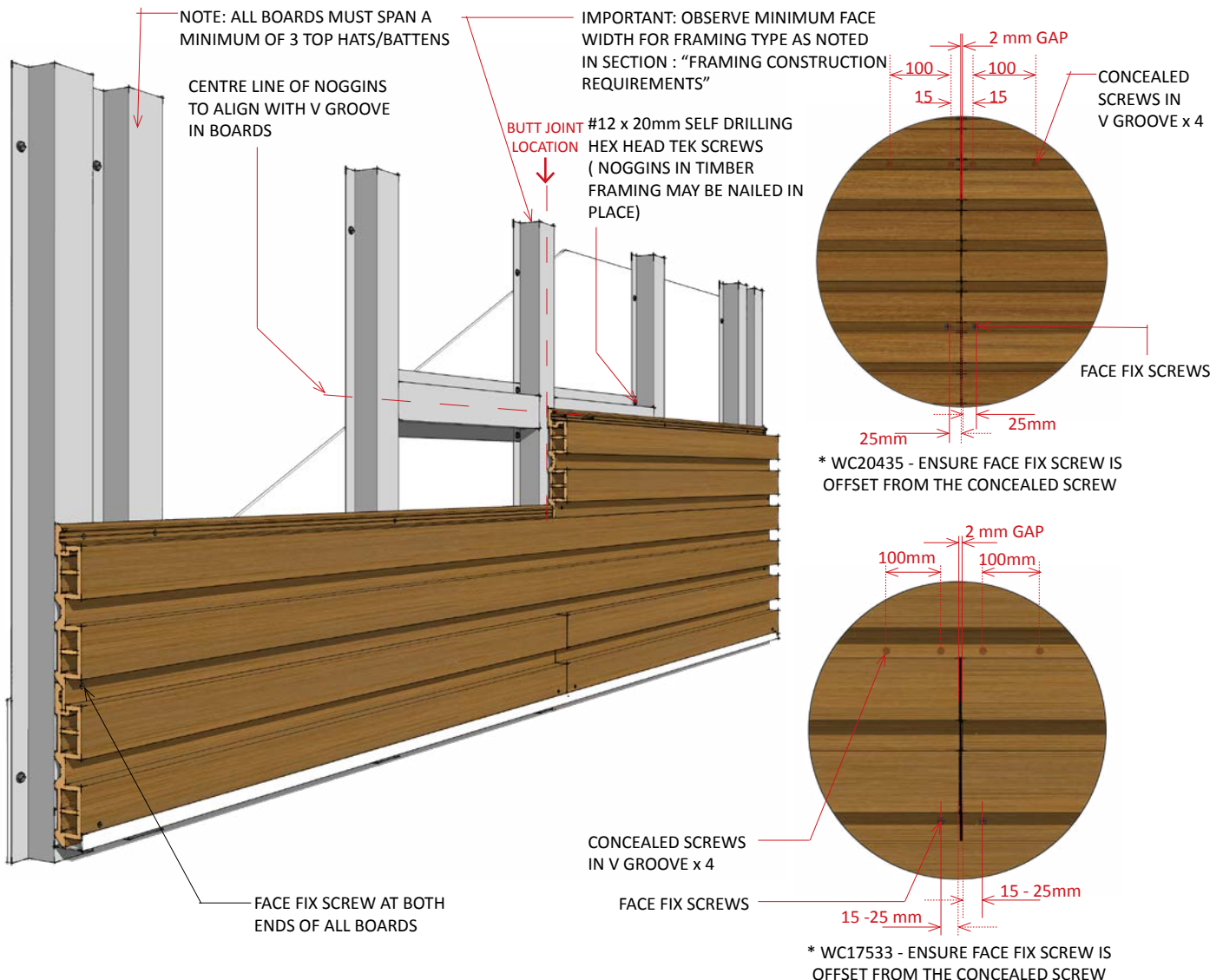
NOTE: - Vertical J-Trim are not shown for clarity



- 5a. Cut to required length. Allow minimum 2mm clearance at each board end.
- 5b. Position the second cladding board above the first board and press down firmly into the groove. Gently tap with a rubber mallet if required to achieve full engagement.
- 5c. Pre-Drill and screw board as per step 4.
- 5d. Face fix all board ends as per fig. 2
- 5e. Repeat for all remaining boards with the exception of the last board.

STEP 6a - OPTION A

BUTT JOINT TREATMENT - STAGGERED



6a.a. To prepare framing for butt joints, butt joint locations **MUST** be predetermined. Noggings must be securely fitted between battens using same framing material. Centre Line of noggings must align with V groove in boards.

6a.a. Where Butt Joints are required - set with 2mm gap between board ends. Butt joints must always be set over a single top hat/batten.

6a.b. Ensure face fixing is carried out at Butt Joints as per fig.2 at Step 5 using 2 screws in V groove of each board end.

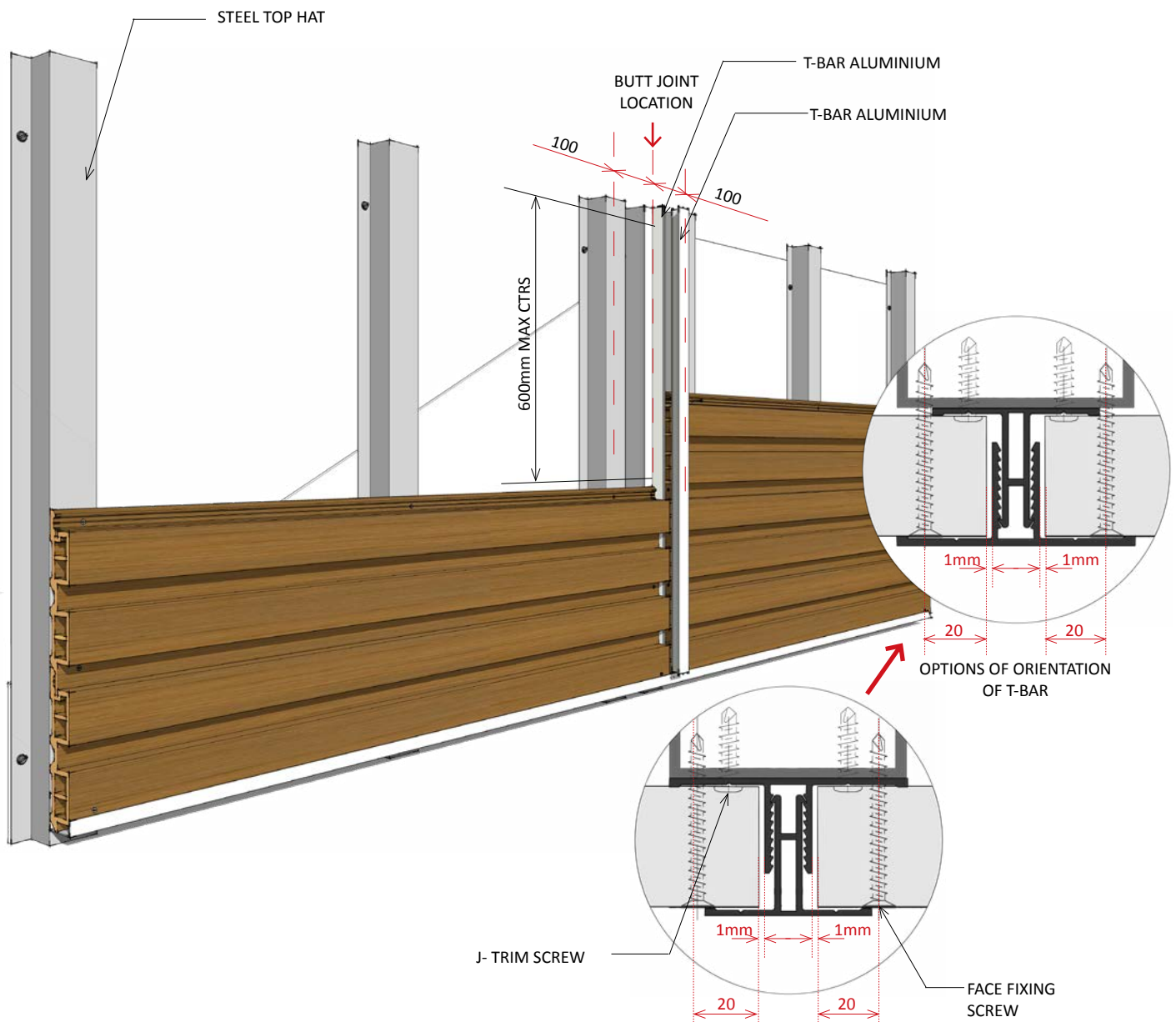
6a.c. Silicone should be applied to board ends prior to setting up against adjoining boards to assist in a weather tight installation.

6a.d. Pre-Drill and screw boards in V groove as indicated above ensuring Butt joint is in dead centre of tophat/Batten.

NOTE: - Butt Joints can be set in line or randomly however all boards must span minimum 3 top hats/battens.

STEP ⑥b - OPTION B

BUTT JOINT TREATMENT - T BAR



6b.a. Fix T Bar Rear to Tophats / Battens at butt joint location at maximum 600mm Centres along both sides.

6b.b. Install Boards with a 1mm clearance gap to T Bar aluminium rear clip. Ensure boards are screwed (in V groove) to both centre top hat and next top hat which is 100mm away from centre top hat.

6b.c. Ensure Face fixing is carried out at butt joint as per fig. 2 at Step ⑤.

6b.d. Press T Bar front into rear to finish off and cover the butt joint. Tap with a rubber mallet if needed.

STEP 7

PREPARE FINAL BOARD



7a. Cut last board to required length.

7b. Measure remaining un-clad area to determine required height of final board.

If the board can be slid down from the top (Example - Eaves are not yet installed) the board can be ripped to leave a gap of only 1-2mm from the finished structure (or eave).

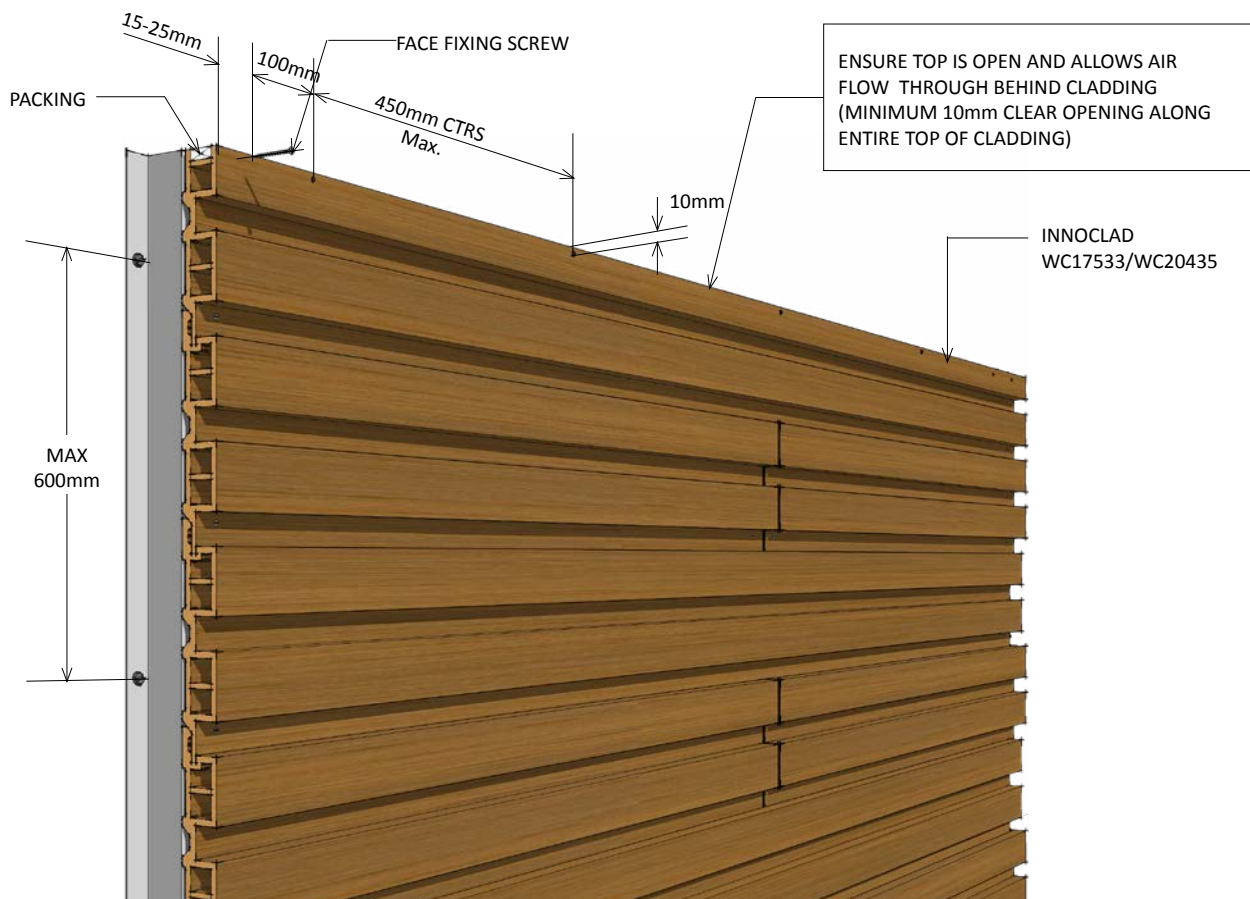
If there is a structure or element above final board, the board may have to be ripped to achieve a finished gap of up to 10mm to allow installation.

Note: Ensure a minimum ventilation gap of 10mm is left at top .

7c. Rip Board down in length to achieve required size using a power saw, track saw or similar. Dispose of the offcut.

STEP 8

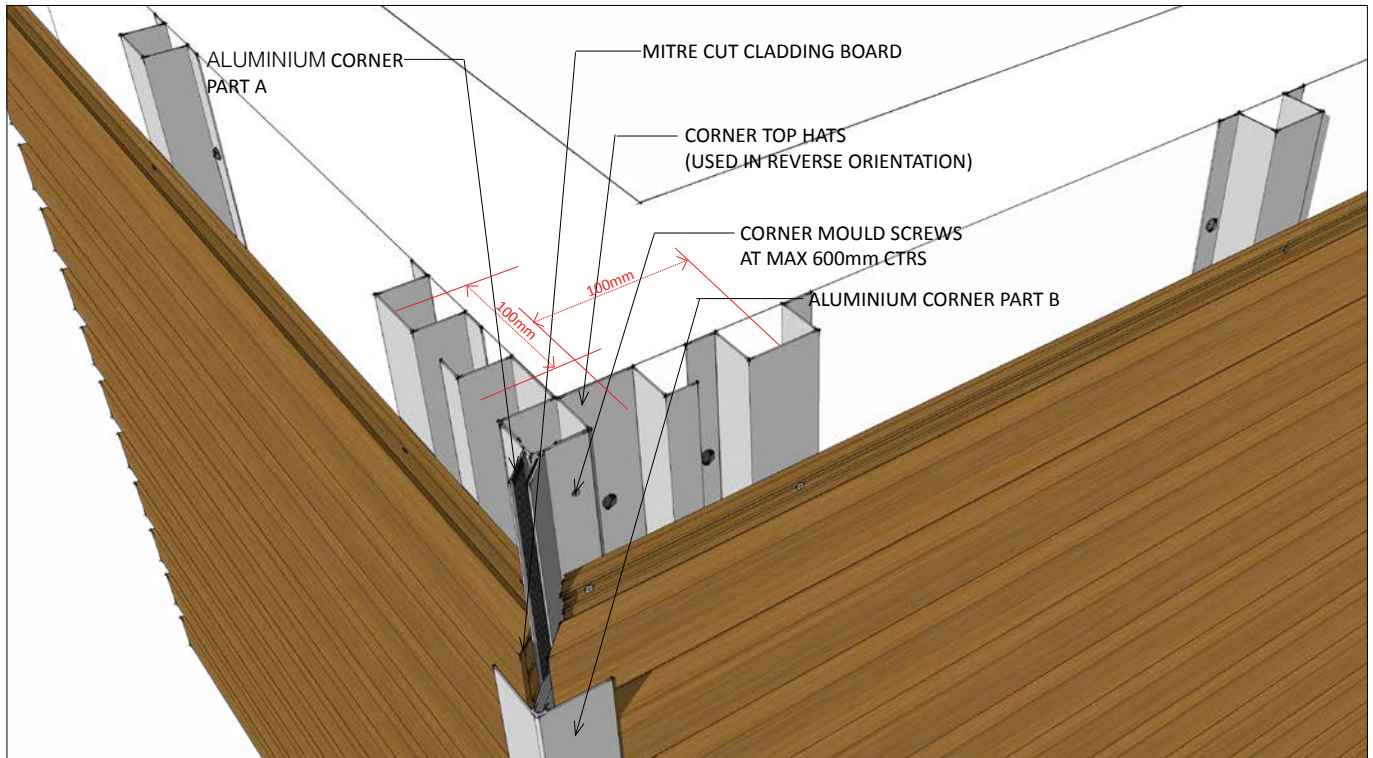
INSTALL FINAL BOARD



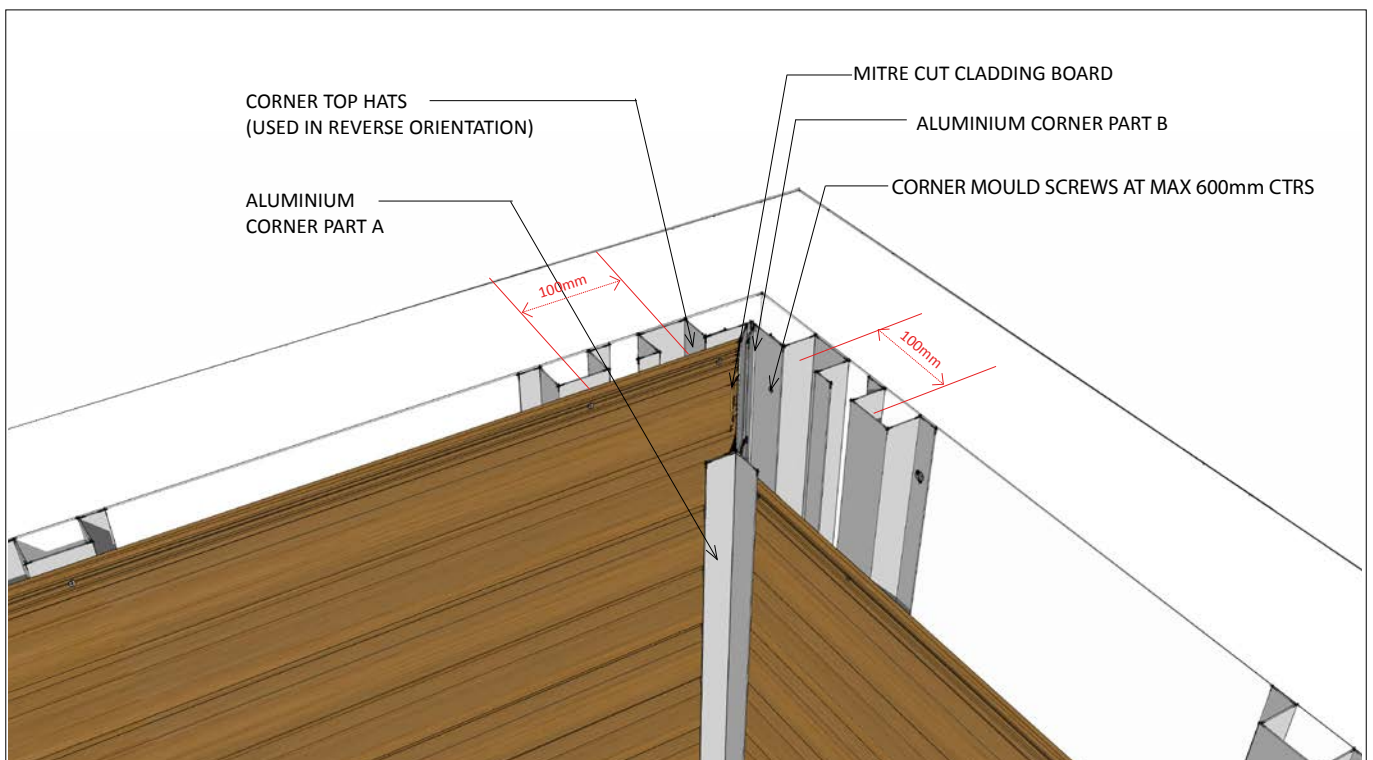
- 8a. Position Final Board above previous board and position into place, ensuring board is properly seated and level. Gently tap with a rubber mallet if needed to achieve full engagement.
- 8b. Pre-Drill clearance holes 10mm down from top edge in alignment with top hats.
- 8c. Screw fix the board using the “Face Fix” Screws nominated in the table at step ② . Packing must be used at screw locations if fixing through an open cavity.
- 8d. A J-Trim or similar may be used to cover screw heads if desired.

STEP 9

CORNER DETAIL OPTION



EXTERNAL CORNER TREATMENT



INTERNAL CORNER TREATMENT

- All screws are minimum 15mm to 25mm away from board edges.
- All boards must be face fixed.

NOTES

[illegible]



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