

V11 | July 25

# ULTRAROOF INSTALLATION GUIDE

Dear Customer,

Thank you for choosing the Ultraroom product. This guide is designed to make fitting as straightforward as possible.

**Before you commence installation of the roof, please take a moment to read the guide.**

This guide is written on the basis that a qualified surveyor has undertaken correct checks for the capability / structural performance of any existing framework / walls / foundations to verify they are fit for purpose. Any feedback - positive or negative - is welcomed so we can make our systems even better.

Please contact the Tech Support Team on **01200 452 918** or email **techsupport@ultraframe.co.uk**

**For everything you need to know about Ultraroom including guides and installation videos visit**

**www.ur380info.co.uk**

ULTRAROOM FITTERS TIPS

If this is the first time you're fitting an Ultraroom we ask you to familiarise yourself with the Installation guide before you start.

Ensure that you have all the key documents outlined on page 10, all the correct tools and safe access equipment, these are outlined on page 3. If you don't have any of the key documents, please call **Technical Support on 01200 452918 - have your order number handy.**

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FITTERS:  
Look out for this registration form and pass to the homeowner please

TOOLS REQUIRED



NOT SUPPLIED:

- Several items are not supplied as they are easier and cheaper to source locally. These are:-
- Velux roof windows and EDL flashing kits (the roof arrives prepared for Velux). NOTE: 15 degree minimum pitch
  - Anchor or Masonry fixing bolts to host wall
  - 12.5 foiled backed plaster board and skimming beads
  - LED (fire resistant) lighting
  - Internal 20mm x 50mm, 25mm x 50mm timber plastering battens
  - Timber support props (75mm x 50mm) beam support
  - Structural support (available to order separately)
  - Frame to boxbeam fixings
  - Mineral wool/ expanding foam (for filling small apertures)
  - 1m wall straps required to connect the beam to wall

HEALTH & SAFETY

Site safety is paramount. The Construction (Design & Management) Regulations 2015 apply to the whole construction process, on all construction projects from concept through to completion. Compliance is required to ensure construction projects are carried out in a way that secures health and safety. The installation company shall be responsible for the safety of all of the fitting team, the customer and members of the public.

The Surveyor should have carried out a written risk assessment to reduce risk on site and this should have been discussed with you (the installer) prior to starting.

**Please use safe working platforms/ scaffolding all round** and ladders that comply with BS EN 131. Always use equipment in line with manufacturers recommendations. Personal Protective Equipment – such as goggles, mask and ear defenders – should be used when, for example, grinding out for the flashing.







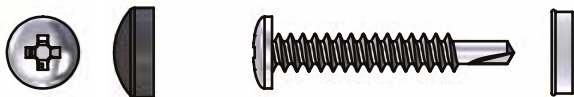

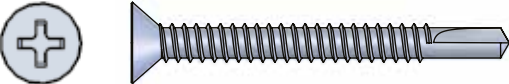



Downlighters must be LED IC (Insulation Contact) fire rated.



ULTRAROOF FIXING SUMMARY

PLEASE USE THE SUPPLIED FIXINGS WHEN INSTALLING THE ULTRAROOF TO ENSURE A SECURE AND CORRECT INSTALLATION.

FIXINGS SUPPLIED Below shows the various fixings supplied for an installation of an Ultrarroof. These should be found in the box containing this document.

<b>NRBA 012</b> 4.8 x 32 Phillips CSK HD S/Drill		<b>PHILLIPS SCREWDRIVER BIT</b>
<b>WPDS 020</b> 3.5 x 50 Dry wall pozi countersink screw		<b>PHILLIPS SCREWDRIVER BIT</b>
<b>NRPS 050</b> 4.0 x 25 Deck-tite pozi countersink screws		<b>POZI SCREWDRIVER BIT</b>
<b>NRTS 050</b> 4.2 x 25 wafer head Self drilling screws		<b>PHILLIPS SCREWDRIVER BIT</b>
<b>RRX 025</b> 5.0 x 50 C'SNK pozi heco fix wood screw		<b>POZI SCREWDRIVER BIT</b>
<b>NRRSA 005BL</b> 5.5 x 90 Hex washer head tek screw		<b>M8 HEX SCREWDRIVER BIT</b>
<b>NRES 004</b> 4.8 x 32 pan head self drill		<b>PHILLIPS SCREWDRIVER BIT</b>
<b>NRSF 012</b> 4.8 x 38 pan head self drill		<b>PHILLIPS SCREWDRIVER BIT</b>
<b>WPCS 020</b> 4.8 x 38 self drilling C'SNK screw		<b>PHILLIPS SCREWDRIVER BIT</b>
<b>CHAA006</b> 4.0 x 13 self drill wafer head		<b>PHILLIPS SCREWDRIVER BIT</b>
<b>NRTT001</b> Tile screw fixing tool		
<b>NRTF 050</b> 4.2 x 25 Wafer head piercing point screw		<b>PHILLIPS SCREWDRIVER BIT</b>

ULTRAROOF FIXING SUMMARY

The kit is supplied with a location plan, a quality control checklist for the box in which this guide arrives and, of course, this installation guide. The location plan is used to match individual components to their respective positions. **IMPORTANT NOTES:**

**CUSTOMER SUPPLIED FIXINGS:** The above are minimum recommended requirements and equivalent or equally approved solutions can be used.

**EXTREME LOCATIONS:** Some locations may require alternative specifications, to be advised by Ultraframe Ltd.

Description of joint	Substrate	Fixing Specification	Minimum required capacity per fixing	Supplied by
Ultrarroof eaves to hup! wall	NA	2no GPHS fixings internally and 2no GPHS fixings externally at maximum of 600mm cc (every clip position)	Pull out = shear =0.6kN through 0.9mm magnelis	Ultraframe
hup! wall to host	Timber	8mm dia timber coach screw	Shear = 2.3kN	Customer
	Brick/ Block/ Concrete	Concrete Frame Screws 7.5x70mm staggered 300mm vertically e.g.TIM-co	Shear = 2.3kN	Customer
hup! structural post to foundation	Concrete	4no.M8 Anchor BOLTS (SLP004)	Pullout =5.6kN	Ultraframe
	Quickbase	Please contact techsupport@ultraframe.co.uk for more details		
	Durabase	4no.M8 Anchor BOLTS (SLP004) into concrete pad	Pullout =5.6kN	Ultraframe
hup! wall base tray to foundation	Concrete	M6 x 85mm Concrete Bolt at 600mm cc e.g. FFT Concrete Bolt M6x100 Hex/Flange Head	Pull out = 1kN @ 600mm cc	Customer
	Quickbase	FFT Concrete Bolt M8x150 Hex/ Flange Head	Pull out = 1kN @ 600mm cc	Customer
	Durabase	As per Durabase specification e.g. 2no 10mm diax19mm hex head at max 600mm cc	Pull out = 1kN @ 600mm cc	Customer
Ultrarroof eaves end to host wall	Timber	8mm dia timber coach screw	Pull out = shear =2.5kN	Customer
	Brick/ Block/ Concrete	4no. M8 x 80mm chemical anchor e.g. Hilti HIT-V M8 x 80mm chemical anchor	Pull out = shear =2.5kN	Customer
Ultrarroof ridge end to host	Timber	8mm dia timber coach screw	Pull out = shear =2.5kN	Customer
	Brick/ Block/ Concrete	4no. M8 x 80mm chemical anchor e.g. Hilti HIT-V M8 x 80mm chemical anchor	Pull out = shear =2.5kN	Customer
Ultrarroof halfridge to host wall	Timber	8mm dia timber coach screw	Pull out = shear =2.5kN	Customer
	Brick/ Block/ Concrete	M8 x 80mm chemical anchor at 300mm cc e.g. Hilti HIT-V M8 x 80mm chemical anchor	Pull out = shear =2.5kN	Customer
Ultrarroof eaves to frames	NA	Baypole screw 4.8 x 80mm, (Self drilling with Phillips wafer head) 200mm from corners and 450mm cc	Shear = 3.0kN	Customer

FIXING LOCATION SUMMARY



Fixing support shelf to existing frames

6 fixings per corner



**NRBA 012**  
4.8 x 32 Phillips  
CSK HD S/Drill




Securing corner cleats

12 per cleat, 6 through pre drilled holes, 6 through gutter support channel



**CHAA 006**  
4.0 x 13 self drill  
wafer head



Fixing hanger bracket to wall

4 fixings per bracket

**NOT SUPPLIED**

We recommend HILTI chemical anchors where specified and expanding anchors in other locations (to resist pull out forces). Using HILTI product codes/descriptions, use a HIT-V 80mm x M8 threaded anchor (stud\*) fastened into a 10mm clean drill hole with gun injected mortar or adhesive capsules (with a minimum 80mm embedded) - always rigorously follow manufacturers guidance [www.hilti.com](http://www.hilti.com)  
In addition we recommend the following alternatives; Fischer M8/M10 masonry injection anchor FIS V Rawl Fixings M8/M10 CFS RM50 or CFS RP30  
\* Design load for each stud 2.5k



New internal 90° box beam cleat

18 fixing per cleat



**CHAA 006**  
4.0 x 13 self drill  
wafer head




Extended external box beam cleat

12 fixing per cleat



**CHAA 006**  
4.0 x 13 self drill  
wafer head



Fixing support props to beam

2 fixings per prop

**NOT SUPPLIED**

Fix a prop into the steel section of the beam as shown above. Props should be at max 2000mm centres within 250mm from each corner (prop fixings NOT SUPPLIED) 75x50 timber props NOT SUPPLIED.




Fixing of hip to beam

4 fixing per hip




**WPCS 020**  
4.8 x 38 self drilling  
C'SNK screw



Fixing through head of window frame into beam


200mm from corner, 450mm CTRS

**NOT SUPPLIED**



Fixing set out staff

2 per cleat



**NRTS 050**  
4.2 x 25 wafer head  
self drilling screws

With set out staff flush with underside of beam, fix to face of beam using 2 x (NRTS050) provided. Staff set-out cleat fixed to internal face of box beam. Once fixed the staffs will ensure beams remain parallel to each other.




Fixing beam to corner

6 fixings per corner



**RRX 025**  
5.0 x 50 C'SNK pozi  
heco fix wood screw

FIXING LOCATION SUMMARY




Fixing wall brackets to the beam

6 fixings per bracket



**RRX 025**  
5.0 x 50 C'SNK pozi  
heco fix wood screw

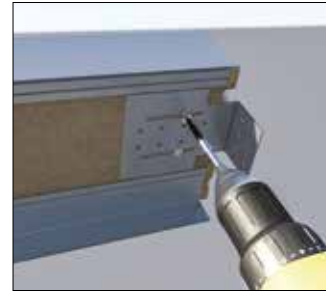


Fixing starter bar extrusions to the wall

Within 200mm of ridge and eaves another equidistant


**NOT SUPPLIED**

We recommend HILTI chemical anchors where specified and expanding anchors in other locations (to resist pull out forces). Using HILTI product codes/descriptions, use a HIT-V 80mm x M8 threaded anchor (stud\*) fastened into a 10mm clean drill hole with gun injected mortar or adhesive capsules (with a minimum 80mm embedded) - always rigorously follow manufacturers guidance [www.hilti.com](http://www.hilti.com)  
In addition we recommend the following alternatives; Fischer M8/M10 masonry injection anchor FIS V Rawl Fixings M8/M10 CFS RM50 or CFS RP30  
\* Design load for each stud 2.5k



Fixing adjustable rear ridge bracket

2 fixings per bracket



**NRTF 050**  
4.2 x 25 wafer head  
piercing point screw




Fixing ridge bracket

2 fixings per bracket

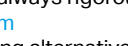
**NOT SUPPLIED**

We recommend HILTI chemical anchors where specified and expanding anchors in other locations (to resist pull out forces). Using HILTI product codes/descriptions, use a HIT-V 80mm x M8 threaded anchor (stud\*) fastened into a 10mm clean drill hole with gun injected mortar or adhesive capsules (with a minimum 80mm embedded) - always rigorously follow manufacturers guidance [www.hilti.com](http://www.hilti.com)  
In addition we recommend the following alternatives; Fischer M8/M10 masonry injection anchor FIS V Rawl Fixings M8/M10 CFS RM50 or CFS RP30  
\* Design load for each stud 2.5k




Fixing internal hip retaining plates

9 fixings per plate




**CHAA 006**  
4.0 x 13 self drill  
wafer head



Fixing ridge bracket

8 fixings per bracket




**NRTF 050**  
4.2 x 25 wafer head  
piercing point screw



Fixing external clips

10 fixings per full clip  
5 fixing per half clip




**WPCS 020**  
4.8 x 38 self drilling  
C'SNK screw



Fixing internal clips

4 fixings per full clip  
2 fixing per half clip



**WPDS 020**  
3.5 x 50 Dry wall  
pozi countersink  
screw



Fixing internal clip to box beam shelf

2 fixings per full clip



**CHAA 006**  
4.0 x 13 self drill  
wafer head



Fixing internal clip to ridge shelf

2 fixings per full clip



**CHAA 006**  
4.0 x 13 self drill  
wafer head



Fixing internal hip retaining plates

9 fixings per plate



**CHAA 006**  
4.0 x 13 self drill  
wafer head



FIXING LOCATION SUMMARY

**Fixing internal lower hip brace plate**

4 fixings per plate

**CHAA 006**  
4.0 x 13 self drill wafer head

**Fixing internal upper hip brace plate**

4 fixings per plate

**CHAA 006**  
4.0 x 13 self drill wafer head

**Fixing internal jack rafter connection plate**

4 fixings per plate

**CHAA 006**  
4.0 x 13 self drill wafer head

**Fixing OSB to external panel clips**

24 fixings per full panel

**NRPS 050**  
4.0 x 25 deck-tite pozi countersink screws

**Fixing steel hip plates**

300mm centres (pre drilled holes)

**NRTS 050**  
4.2 x 25 wafer head self drilling screws

**Fixing Aluminium ridge plate**

Pre drilled holes

**NRTS 050**  
4.2 x 25 wafer head self drilling screws

**Fixing hip spines**

500mm centres per side

**NRTS 050**  
4.2 x 25 wafer head self drilling screws

**Fixing Ultratile starter strip**

Fix through all available holes

**NRTS 050**  
4.2 x 25 wafer head self drilling screws

**Fixing Ultratile panel**

11 per full tile

**NRTF 050**  
4.2 x 25 wafer head piercing point screw

**Fixing ridge top cap**

Pre drill MAX 750mm CTRS

**NRRSA 005BL**  
5.5 x 90 Hex washer head tek screw

**Fixing end caps**

Screw port

**NRES 004**  
4.8 x 32 pan head self drill

**Fixing glazing bar shoes at box beam**

Pre drilled holes

**NRTS 050**  
4.2 x 25 wafer head self drilling screws

FIXING LOCATION SUMMARY

**Fixing glazing bar shoes to ridge section**

Pre drilled holes

**NRTS 050**  
4.2 x 25 wafer head self drilling screws

**Fixing glazing bar at box beam shoe**

Pre drilled holes

**NRTS 050**  
4.2 x 25 wafer head self drilling screws

**Fixing glazing bar to ridge**

**NRTS 050**  
4.2 x 25 wafer head self drilling screws

**Fixing glazing bar to box beam external face**

2 fixings either side

**NRTS 050**  
4.2 x 25 wafer head self drilling screws

**Fitting upper channel 'number 1'**

500mm Ctrs

**NRTS 050**  
4.2 x 25 wafer head self drilling screws

**Fitting lower channel 'number 2'**

500mm Ctrs

**NRTS 050**  
4.2 x 25 wafer head self drilling screws

**Fixing lower glazing support section**

200mm CTRS

**NRTS 050**  
4.2 x 25 wafer head self drilling screws

**Fitting of the upper ridge glazing support trim**

**WPDS 020**  
3.5 x 50 Dry wall pozi countersink screw

**Fitting of the timber ridge battens**

2 fixings per batten

**NOT SUPPLIED**

**Fitting upper plasterboard trim**

2 fixings

**NOT SUPPLIED**

**Fixing tile screen**

Single fixing

**NRTS 050**  
4.2 x 25 wafer head self drilling screws

**Fixing tile stop aluminium**

300mm CTRS

**NRSF 012**  
4.8 x 38 pan head self drill



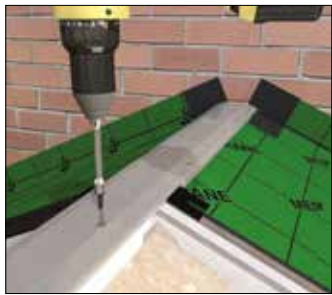
FIXING LOCATION SUMMARY



Fixing ridge under capping into tile stop  
500mm CTRS



Fixing glazing bar end caps  
Pre drilled holes



Fixing ridge under capping central  
500mm CTRS



BEAM BRACKETRY

Following customer feedback your Ultraroom eaves beam has been updated to include additional brackets on the internal corners to support the mitred joint. If you receive these brackets with your order please fit as shown below.

NOTE: These brackets not specified on variable pitch roofs.

FIXING LOCATION SUMMARY

Here are some top tips to help your installation run smoothly.

- 1. Ensure the beams are laid on top of the frames in the correct order. The correct 'fitting sequence' is shown on page 14.
- 2. When positioning the beams check the dimensions match the critical dimensions sheet supplied with the roof. Start by ensuring the beams that attach to the house wall are parallel and the correct distance apart. Ultraroom will accommodate slightly out of square bases and frames. Please call Technical Support on 01200 452918 for technical advice if this is the case.
- 3. In order to ensure the stability of the beam it needs to be sufficiently supported. Details are shown on page 19 of this guide.
- 4. Always use the fixings, sealants and adhesives specified within the installation guide in order to ensure the strength and water tightness of the roof.
- 5. Don't forget to prop the ridge as shown on page 22, step 32.
- 6. Do not cut the panel strapping until all panels fully installed.
- 7. When fitting the panel clips to the box beam, ensure that the lower end of the clip extension rests/aligns with the edge of the aluminium gutter support channel extrusion on the front of the box beam. This will ensure the OSB is in the correct position. See detail on page 24, step 48.
- 8. Start by placing the OSB boards next to the box beam first. Work your way around the box beam with the OSB before working your way up to the ridge. Only remove the props once the OSB boards and steel hip plates are fixed in place.
- 9. The waterproof membrane can be fitted when damp, but always remove surface water before fitting if it's been raining. 100mm overlap is sufficient on the roof surface with 150mm lapping up the wall.
- 10. Always use tile fixing tool provided (NRTT001). This will prevent over tightening.
- 11. The tiles are designed for expansion and contraction. DO NOT BE TEMPTED TO FORCE THE TILES TOO CLOSE TOGETHER. Always work to the insertion lines ensuring the spaces between the tiles are even across the roof. Use the starter tile strip to guide you and refer to the tile leaflet further information.
- 12. Look out for the handy guides supplied with products for extra tips on fitting.

15° to 19° Roof Pitch



WPBBF090  
U380 90° INTERNAL CLEAT STRAP  
1 PER MITRE



WPBCS 135  
U380 135° INTERNAL CLEAT SMALL  
1 PER MITRE

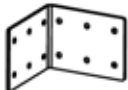


WPBCS 150  
U380 150° INTERNAL CLEAT SMALL  
1 PER MITRE

20° to 29° Roof Pitch



WPBBF 090  
U380 90° INTERNAL CLEAT STRAP  
1 PER MITRE



WPBCM 090  
U380 90° INTERNAL CLEAT MEDIUM  
1 PER MITRE



WPBCM 135  
U380 135° INTERNAL CLEAT MEDIUM  
1 PER MITRE



WPBCM 150  
U380 150° INTERNAL CLEAT MEDIUM  
1 PER MITRE

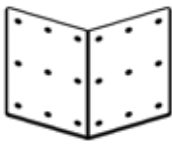
30° to 40° Roof Pitch



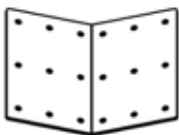
WPBBF 090  
U380 90° INTERNAL CLEAT STRAP  
1 PER MITRE



WPBCL090  
U380 90° INTERNAL CLEAT LARGE  
1 PER MITRE



WPBCL 135  
U380 135° INTERNAL CLEAT LARGE  
1 PER MITRE



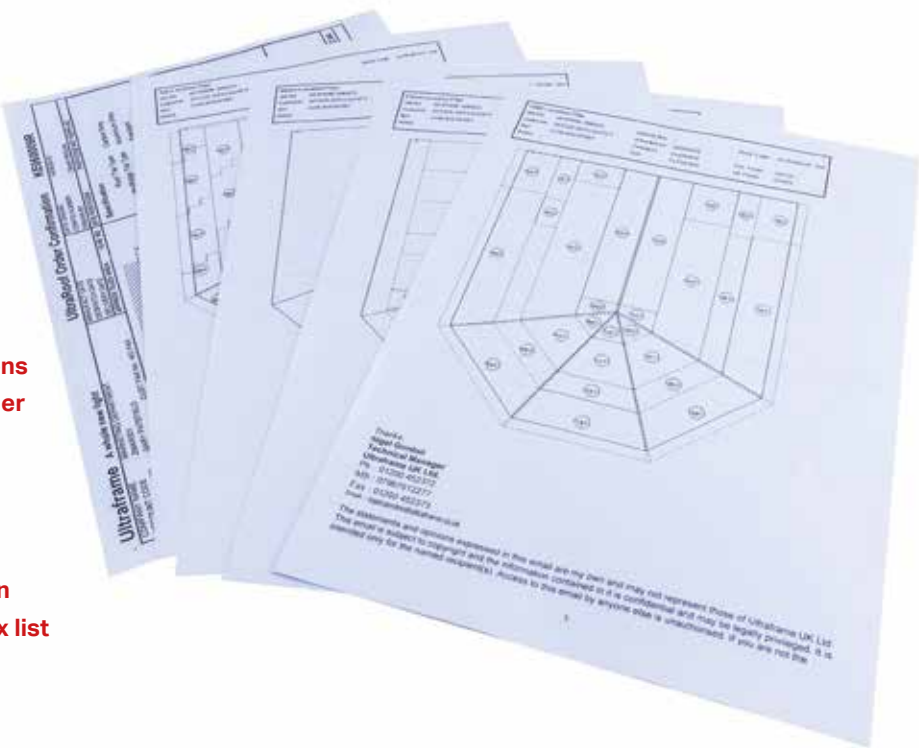
WPBCL 150  
U380 150° INTERNAL CLEAT LARGE  
1 PER MITRE



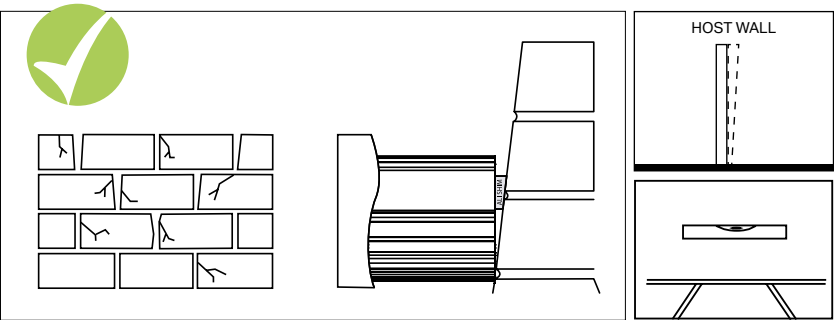
DOCUMENTATION CHECKLIST - SENT WITH EACH ROOF

Check you have:

- 1. Critical set out dimensions
- 2. Confirmation of roof order
- 3. OSB layout
- 4. Tile layout
- 5. Panel layout
- 6. Modesty panel layout
- 7. Component location plan
- 8. Ultrarroof component box list



PRE-INSTALLATION CHECKS



Check the condition of the host wall as this may affect the quality of the final installation. Check the host wall is plumb - any running in/or out should have been accounted for by the surveyor. If not, the ridge and starter bars may require packing out with aluminium shims. Correct alignment in this area is critical to a successful installation - Plumb frames/level ridge. Only use the specified fixings - never be tempted to substitute alternative sizes/gauges.

General points

Choose a suitable area for unpacking the components and always check them before fitting. Any claims for missing or damaged parts are only accepted in line with our standard terms and conditions of sale, 48 hours from delivery.

Careful consideration should be given to the safe disposal of all packaging – packaging is predominantly made from recycled materials and can be readily recycled.

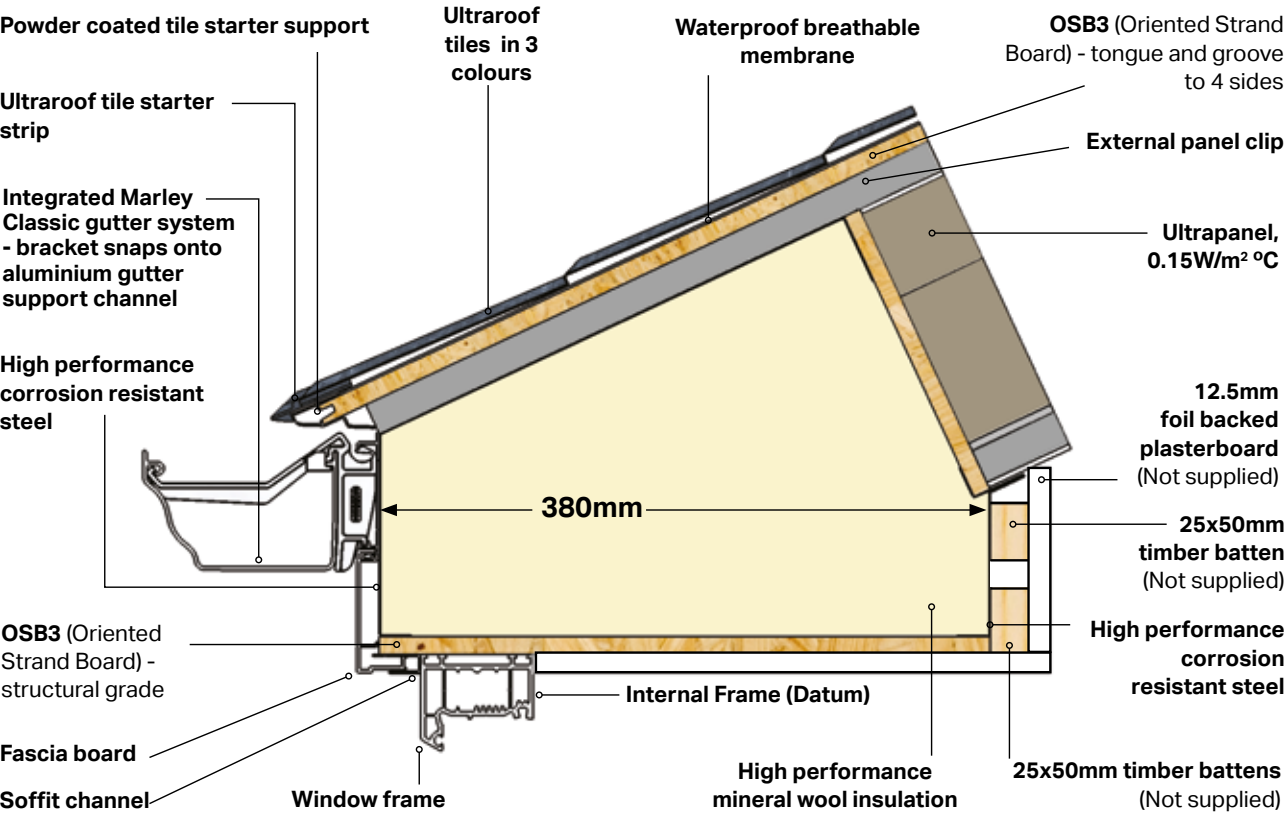
Product

The Ultrarroof kit is supplied with a location plan and, of course, this installation guide. The location plan is used to match individual components to their respective position on the roof.

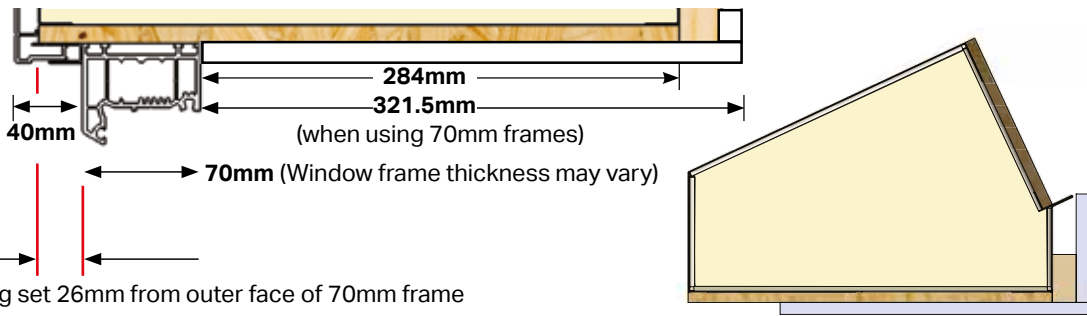
The Superstructure

Check the side frames are level all round. Before starting to install the Ultrarroof, please check the condition of the host wall and whether it's plumb – depending upon what you find, these conditions can seriously affect the final integrity of the roof.

BOX BEAM CROSS SECTION ASSEMBLY

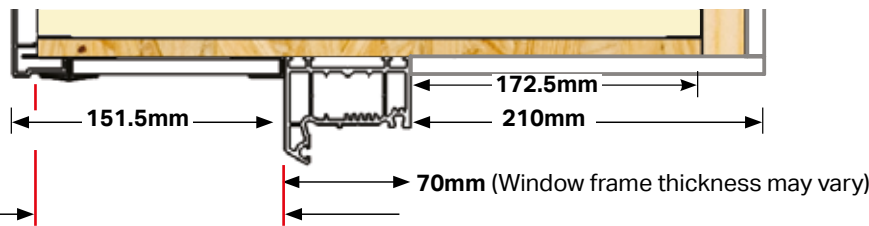


40mm Standard Soffit  
NOT SUITABLE FOR SUPER-INSULATED COLUMNS

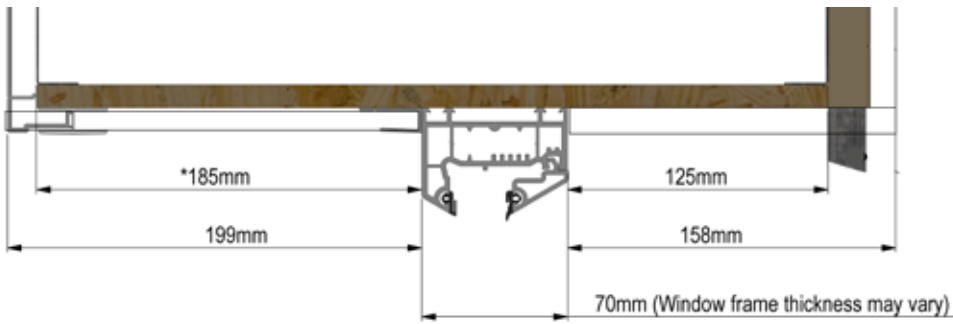


151.5mm Extended Soffit  
MUST BE USED ABOVE SUPER-INSULATED COLUMNS

Alternative (only option if sat on super-insulated columns) - see Appendix 1.



hup! Soffit



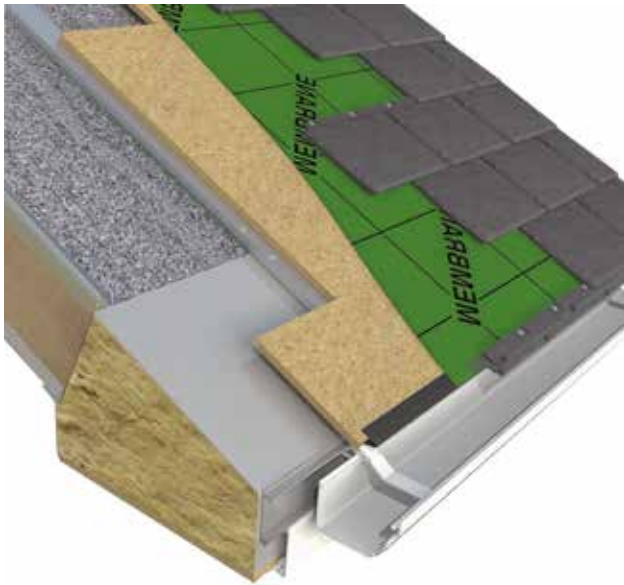


PRODUCT ASSEMBLIES

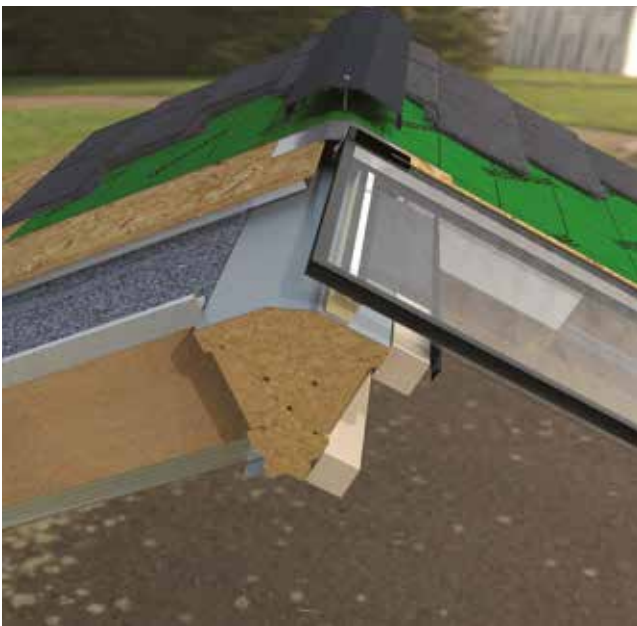
Beam glass



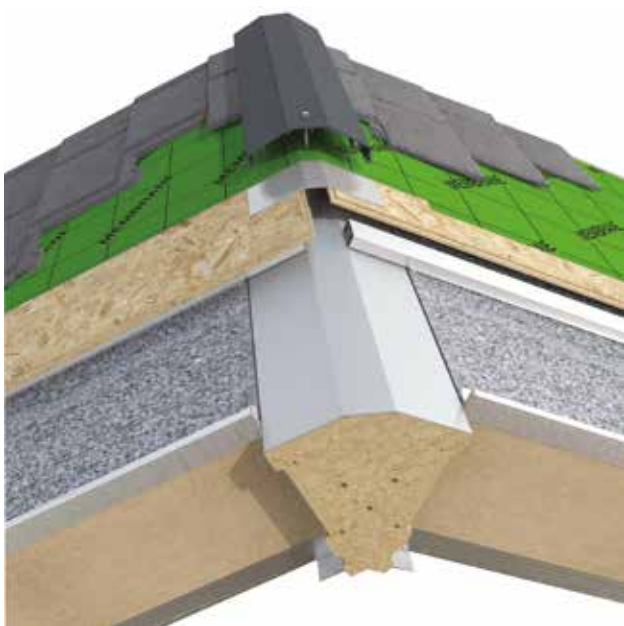
Beam solid



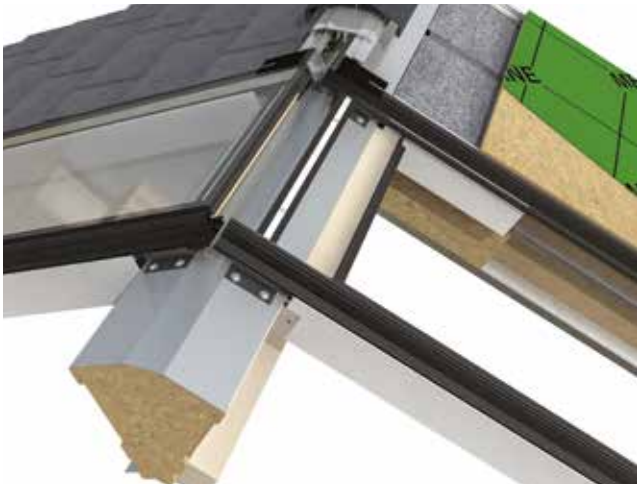
Ridge solid to glass



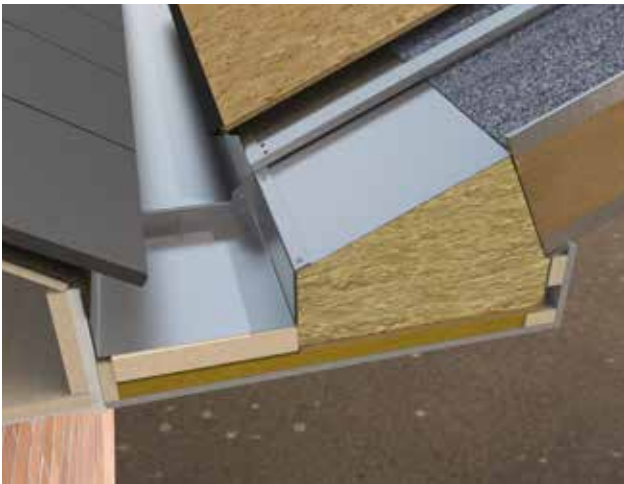
Ridge solid to solid



Ridge glass to glass



265mm box gutter solid



PRODUCT ASSEMBLIES

265mm box gutter glass



Tapered box gutter



Wallplate glass



Wallplate solid



Bars

Gable end frame stiffener is **NOT** supplied as standard. Frame stiffener can only be used upto 1250mm span on doors.

Must be requested if required (for example above door openings). Please refer to Technical Department if fitting bi-folds to gable ended or gable ends on lean-to roofs.

Gable extended

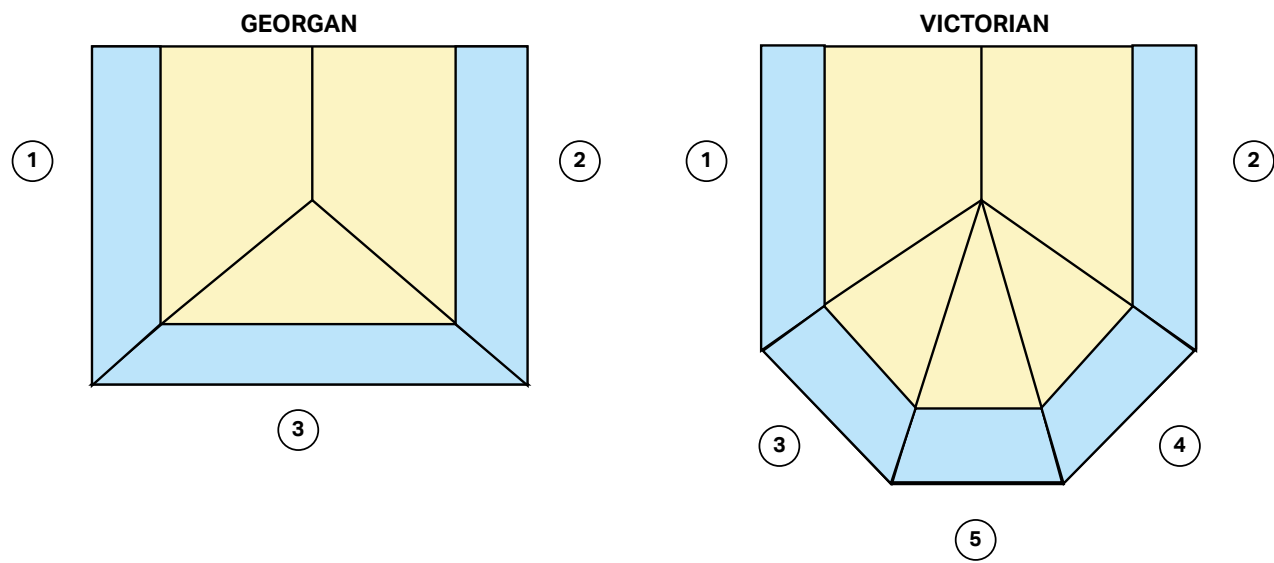




FITTING SEQUENCE - BOX BEAMS / OSB / PANELS

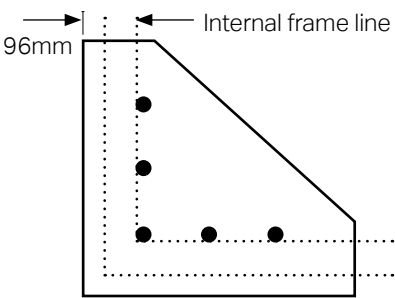
IMPORTANT: FOLLOW THE FITTING ASSEMBLY SEQUENCE

KEY:  OSB  BOX BEAM

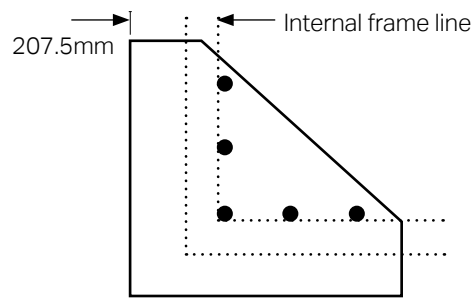


BOX BEAM SUPPORT SHELF

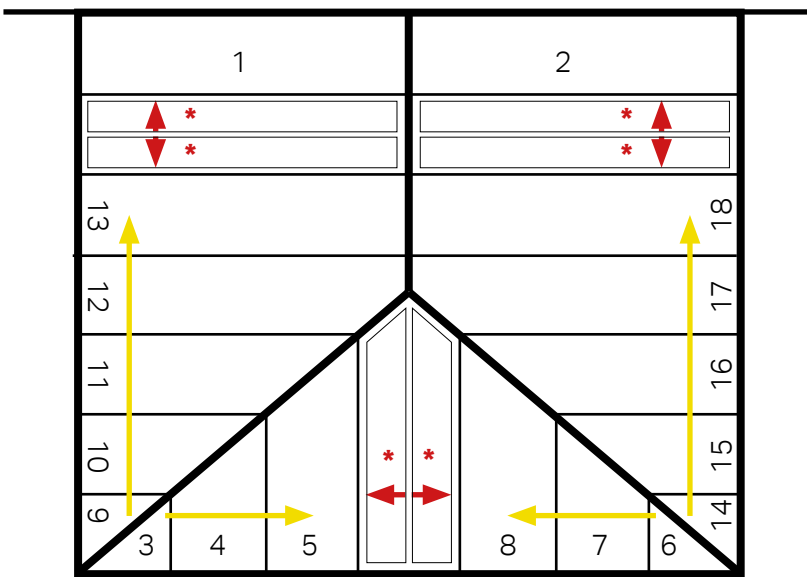
GEORGIAN STANDARD SOFFIT



GEORGIAN EXTENDED SOFFIT



PANEL INSTALLATION SEQUENCE



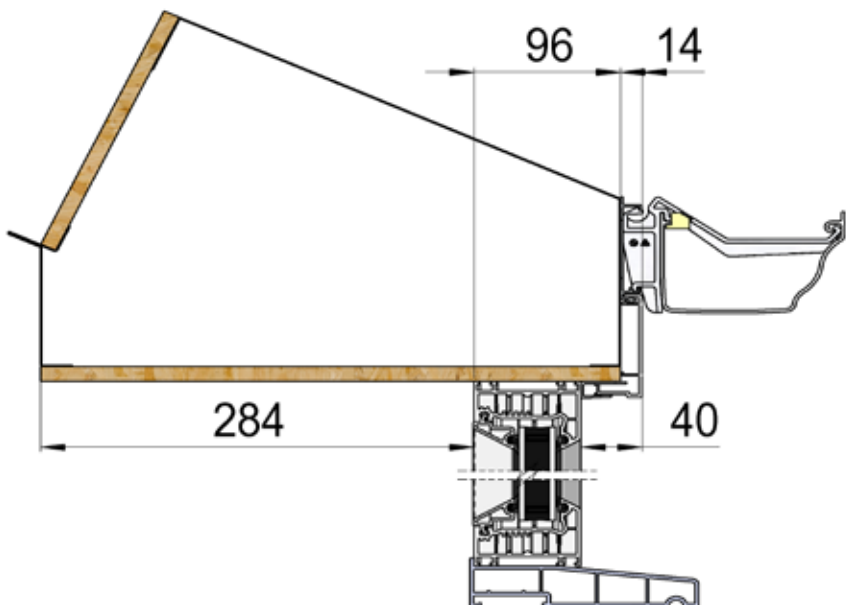
INSTALL YELLOW LABELLED PANELS FIRST.



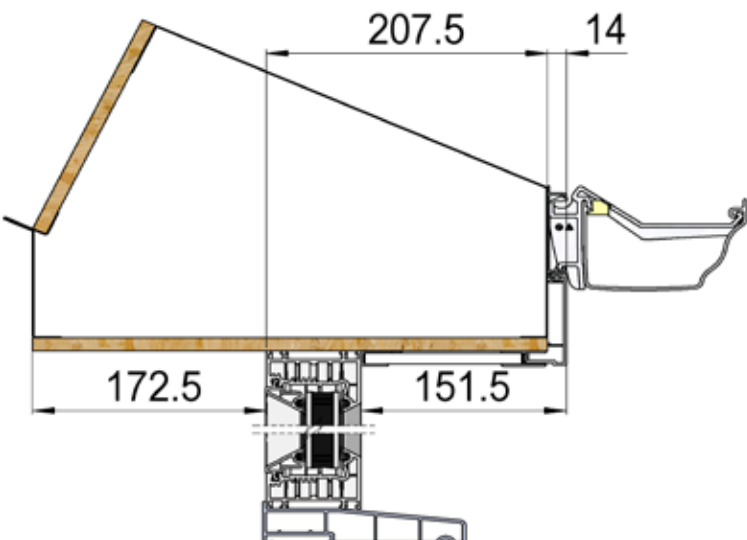
\* = ALL RED TOLERANCE PANELS EXPAND OUTWARDS AND ARE INSTALLED LAST

BOX BEAM ON FRAMES

40MM SOFFIT ON FRAMES ONLY

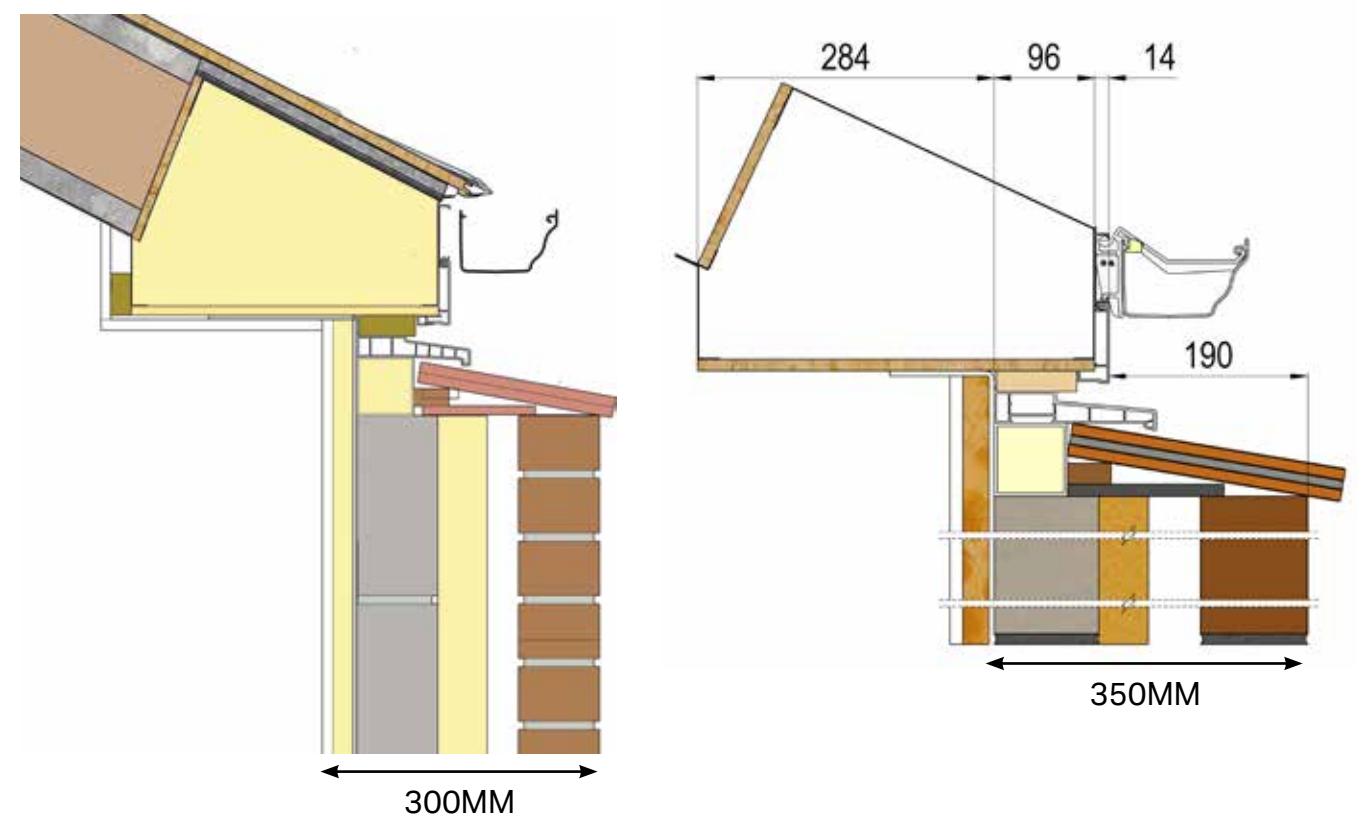


151.5MM SOFFIT ON FRAMES ONLY

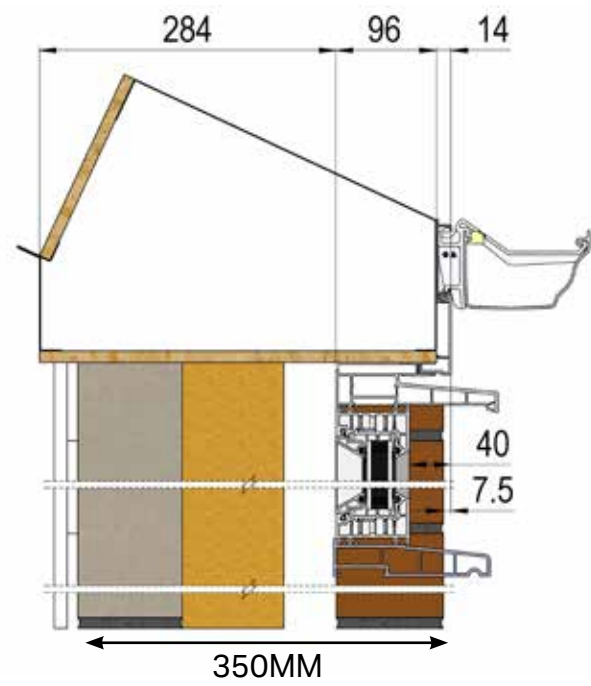


BOX BEAM ON BOUNDARY WALL

-190MM SOFFIT FROM EXTERNAL FACE OF BRICK WALL



0MM SOFFIT / SAT ON 150MM CILL

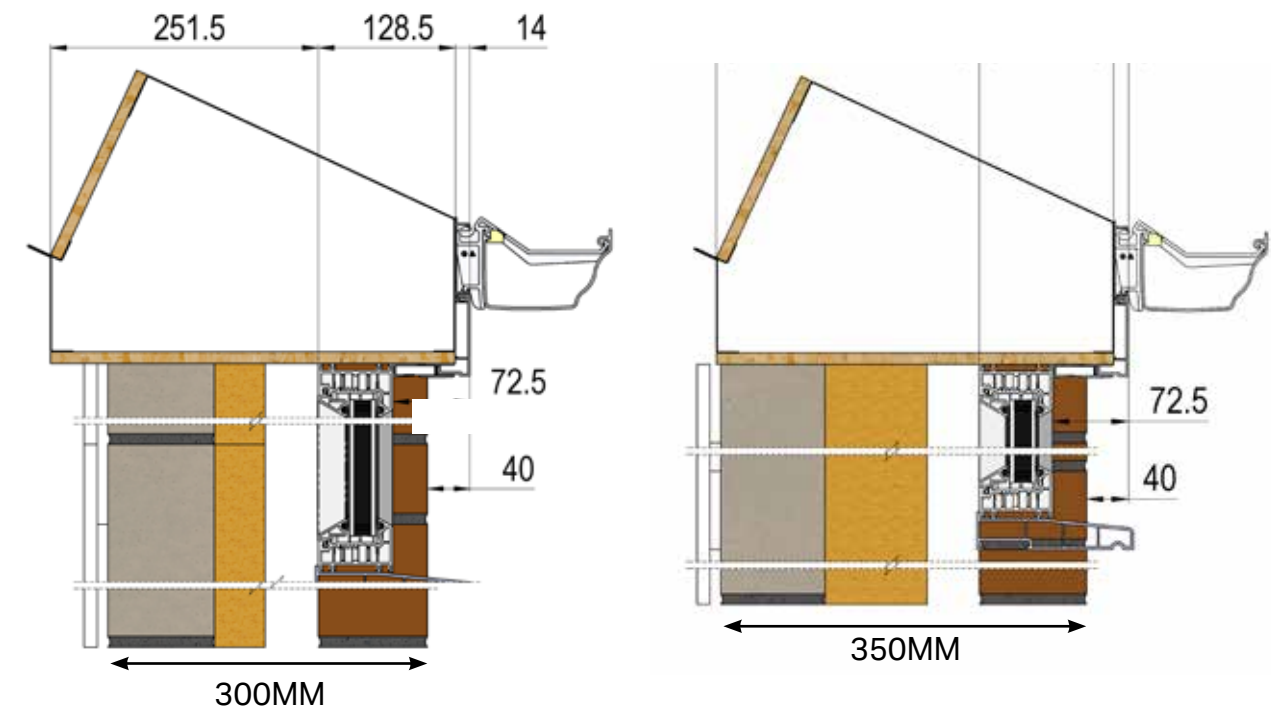


Notes for -190mm Soffit

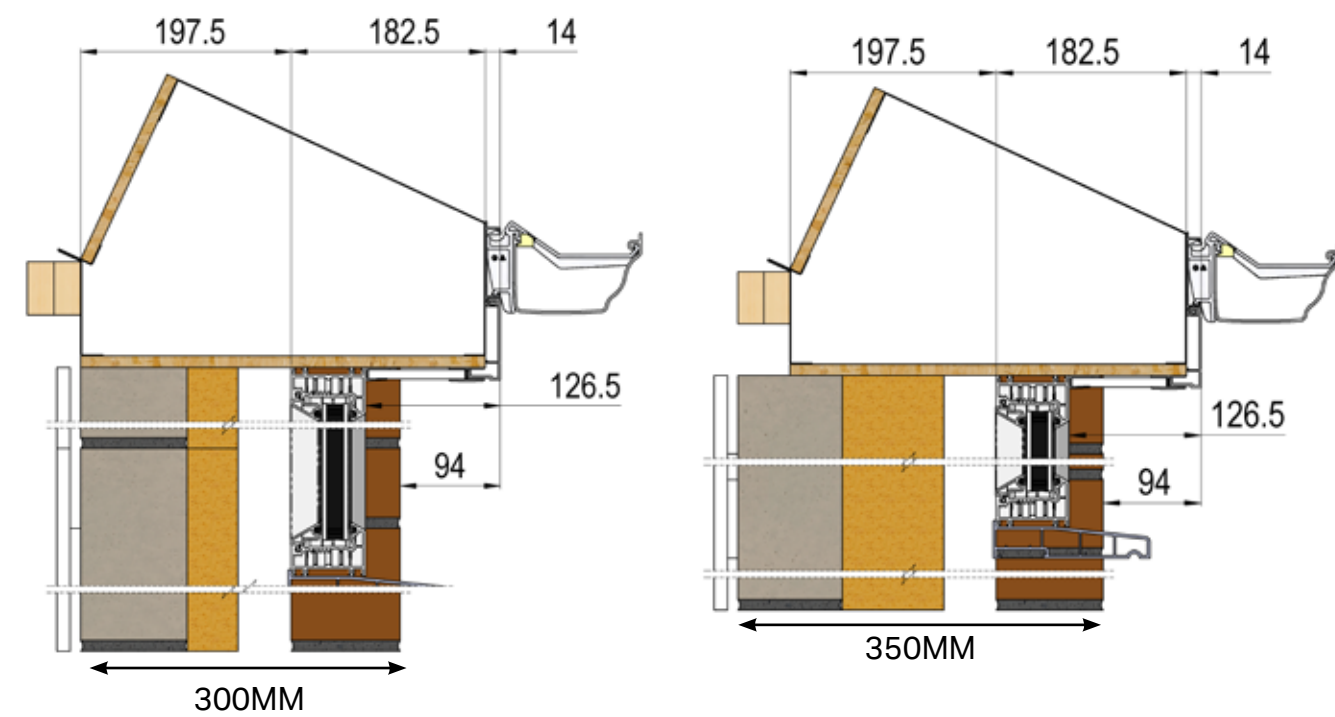
- Wall straps fixed to underside of the beam and 1m down face of blockwork at 2m centres (wall straps not supplied).
- Fit 25mm insulated plasterboard PL4015 to wall to prevent thermal bridging.
- 12.5mm plasterboard on adhesive dabs to the remainder of the wall.
- Two rows of creasing tiles with staggered joints bedded in mortar with tile slips as required.
- Continuous DPC run across the cavity closer, up the face of the corner post and taped to the top surface.
- 70mm PVCu corner post cladding filled with insulated.
- Weep holes at base of wall 1.2m centres.

BOX BEAM ON BRICK WORK

72.5MM SOFFIT FROM FRAME OR 40MM FROM BRICK WORK



126.5MM SOFFIT FROM FRAME OR 94MM FROM BRICK WORK



The dimensions of the soffit types above are all measured to the exterior edge of the window frame. Choose the right option for your particular project. All brick & block diagrams are shown with a 300mm or 350mm wall – internal dimensions will vary according to wall thickness. Wall straps fixed to the beam and 1m down face of blockwork at 2m centres (wall straps not supplied).

Ordering

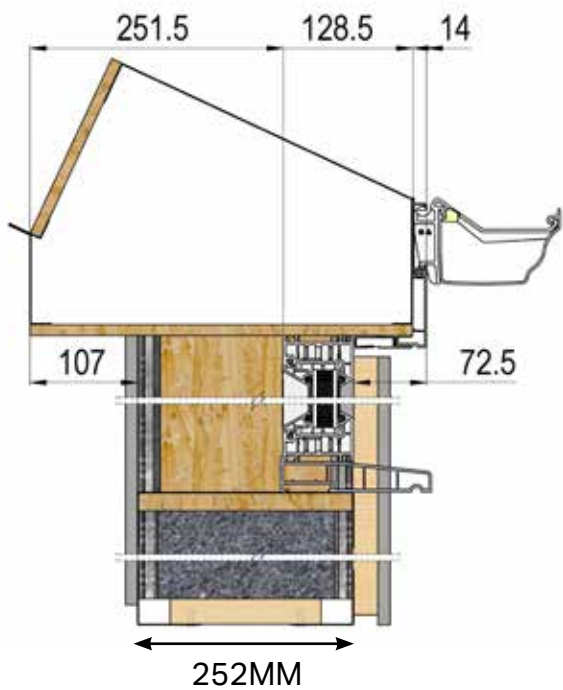
When you order Ultraroof, use internal frame dimension to specify your roof and choose one of the soffit options. If ordering with hup! you will give the base dimensions for your project and then choose the option you require from the hup! options above. The extended soffit options carry a price premium because the roofs is bigger.



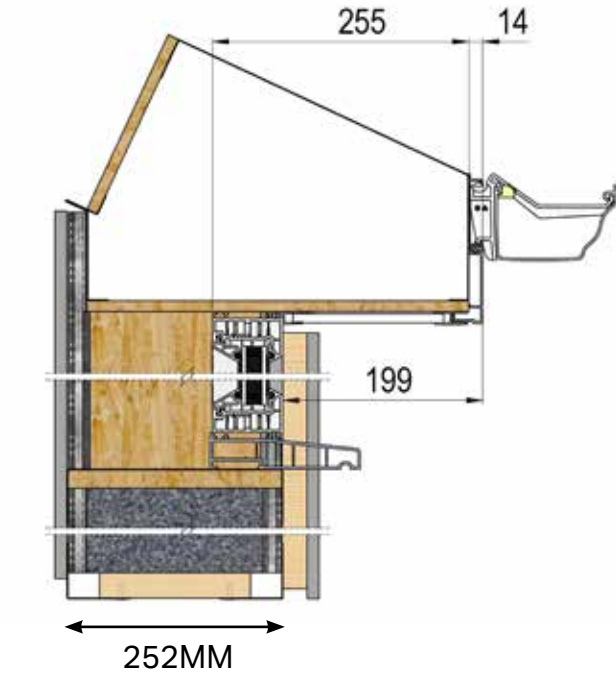
BOX BEAM ON HUP!

These are the options available when hup! touches the underside of the box beam.

HUP! WITH 72.5MM SOFFIT FROM EXTERNAL FRAME

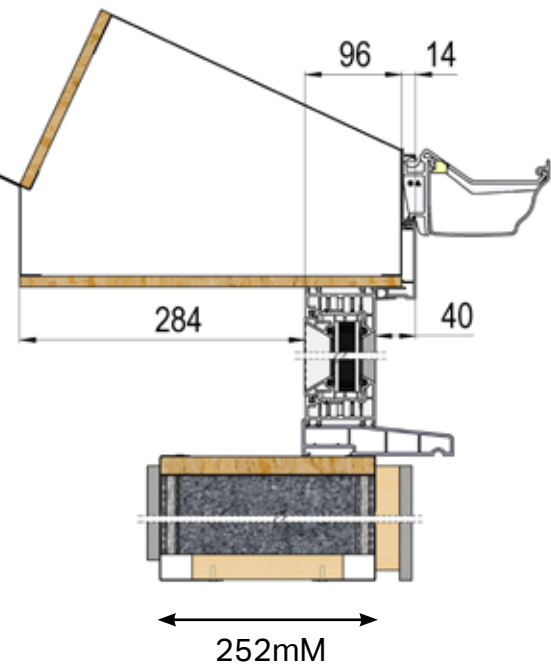


HUP! WITH 199MM SOFFIT FROM EXTERNAL FRAME

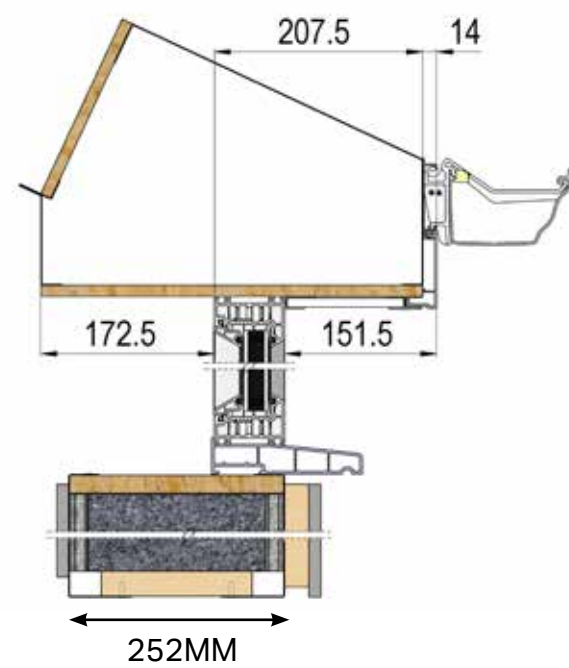


The following options are available when hup! doesn't touch the underside of the box beam and when you have dwarf walls.

HUP! ON FRAME WITH 40MM SOFFIT



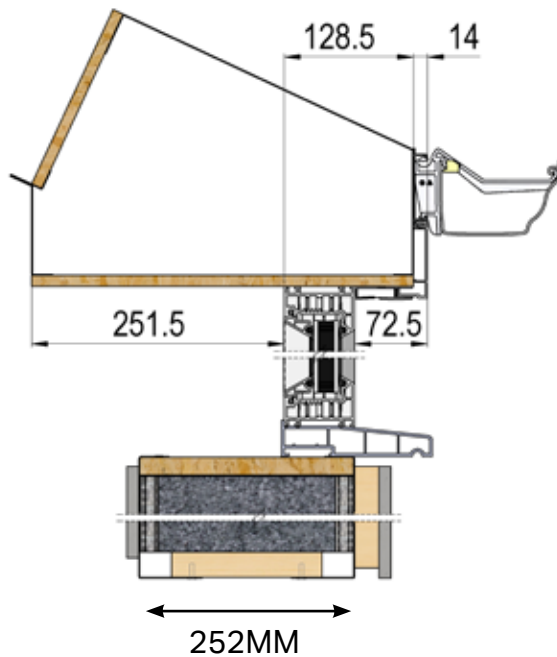
HUP! ON FRAME WITH 151.5MM SOFFIT



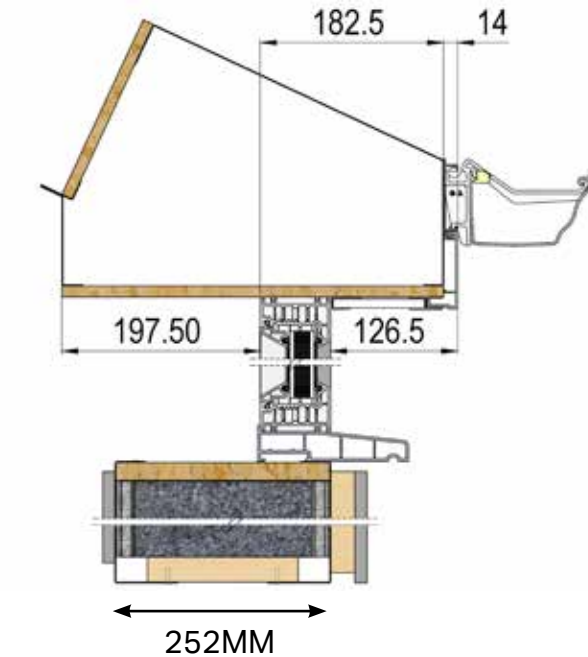
BOX BEAM ON HUP!

The following options are available when hup! doesn't touch the underside of the box beam and when you have dwarf walls.

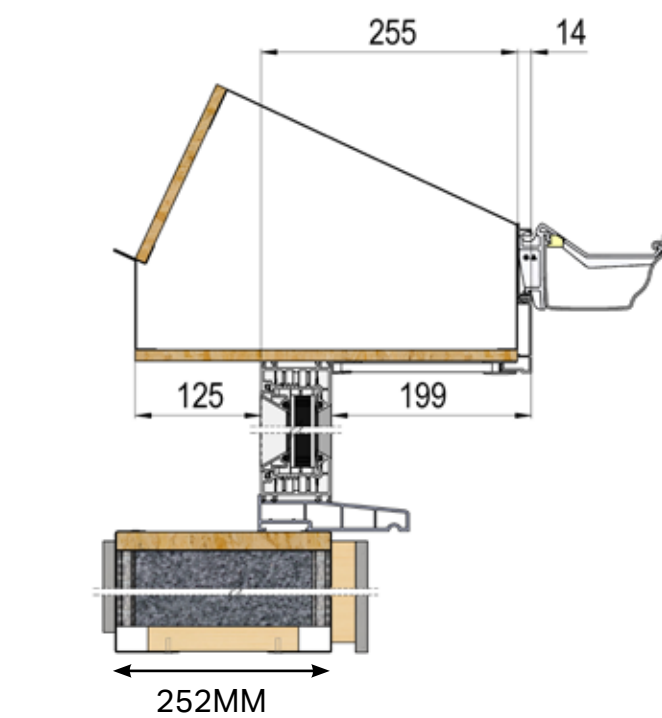
HUP! ON FRAME WITH 72.5MM SOFFIT



HUP! ON FRAME WITH 126.5MM SOFFIT

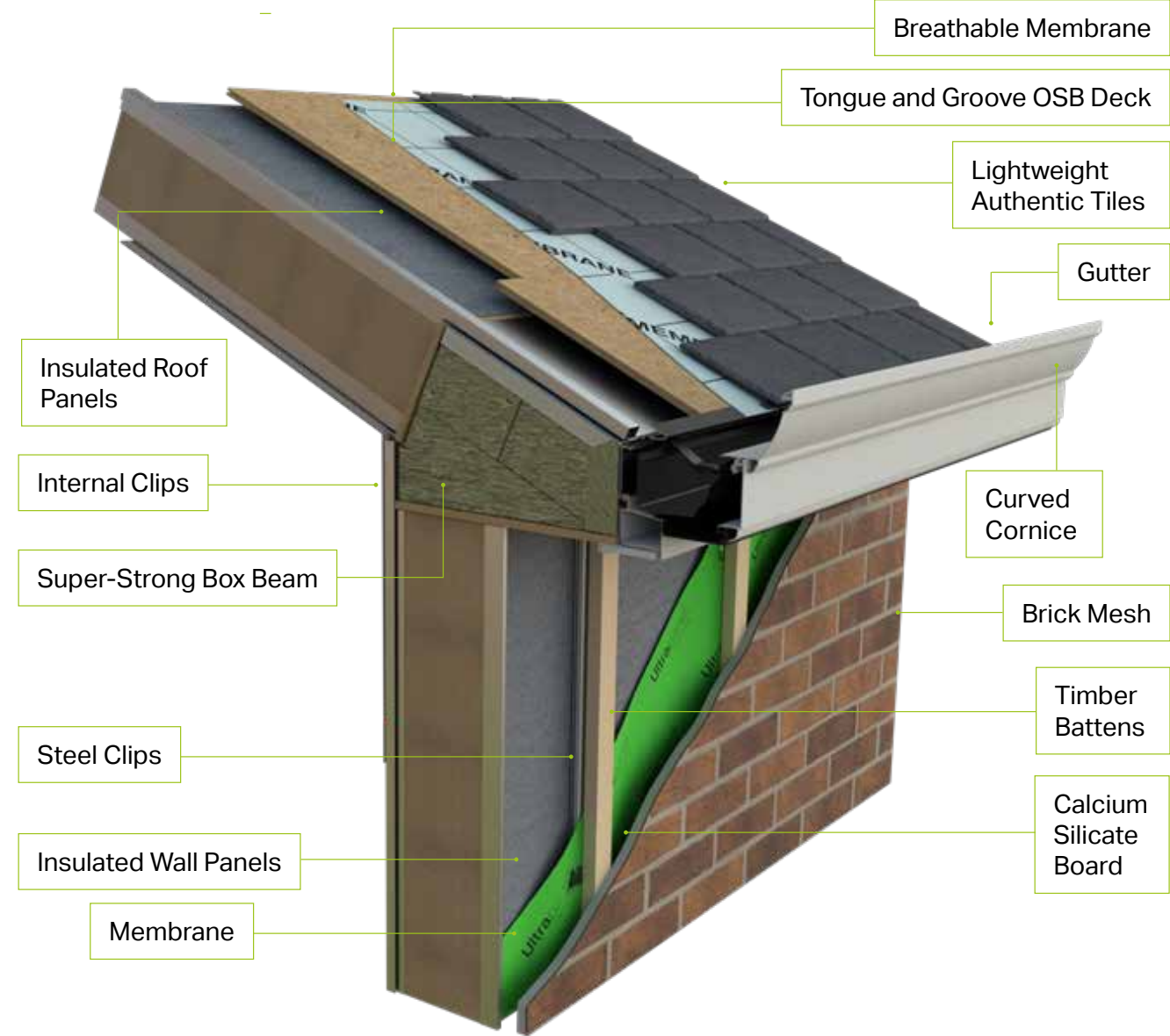


HUP! ON FRAME WITH 199MM SOFFIT



HUP!

hup! is a revolutionary new walling system designed to be used with Ultraroom

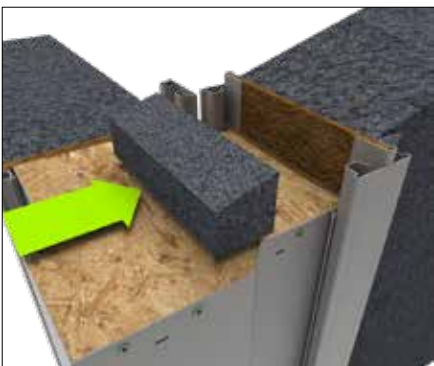


The clips run up the back of the internal side of the beam and are screwed into the steel beam section.

The clips are attached with small angle brackets to the front of the beam. These sit on the outside of the clip and are screwed to the underside of the OSB.

Please note there is no boundary wall option on the Tiled Roof. The external of the clip to the edge of the beam is 185mm.

HUP!



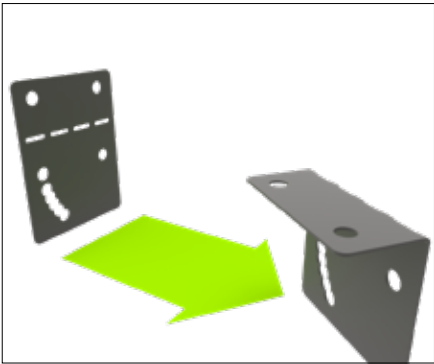
If the building has a gable end, a gable infill wedge is supplied. Apply sealant to the wedge where it makes contact with the walling corner and panel. This is to then be pushed into place as shown, once the beam is in position this wedge will be trapped.



Lower the Tiled Roof beam onto the walling panels aligning the internal face so that the internal walling clips are able to run through.



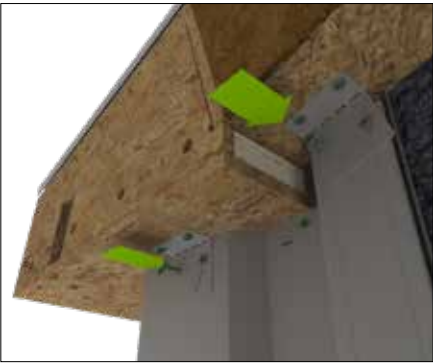
Secure the beam in place by fixing through from the internal walling clips into the beam using GPHS fixings.



To secure the external side of the beam, bend the steel brackets to a 90° angle as shown.

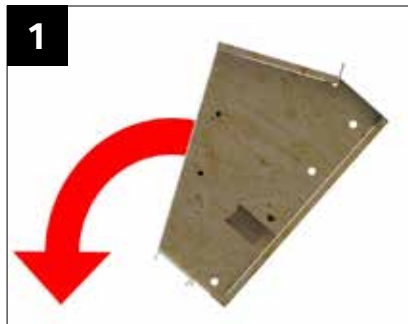


Position the brackets against the walling clips and fix into the clips and into the beam above with the GPHS fixings provided.

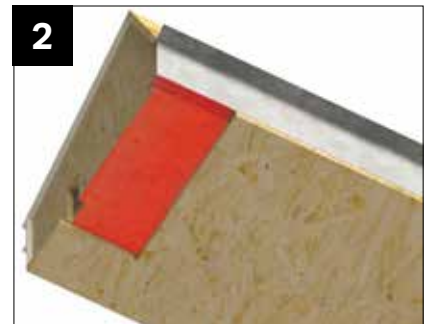


On a gable end and walling corner use these same brackets to secure the clips to the gable panel/eaves by bending to 90°, positioning it up against the underside of the beam and fixing into the clips and the gable panel/eaves.

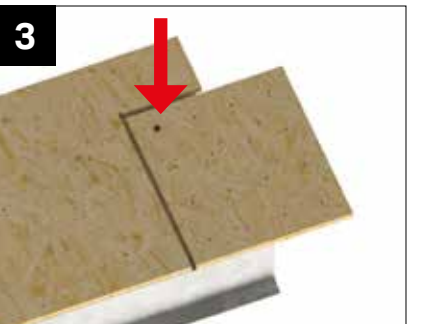
# BOX BEAM JOINTING



Rock one part of the split beam forwards onto the steel face to reveal the OSB base as shown below.



Then place the in-line Joint and hold in place until a RRX025 screw is fixed through.



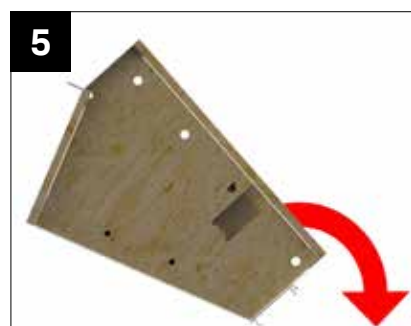
Once fixed continue to install the remaining 5 screws spacing them equally from one another. Ensure all screws aren't protruding from the OSB if they are tightening further.



## BOX BEAM JOINTING



Rock the beam back onto its OSB base and the beam is now ready to be lifted onto the wall



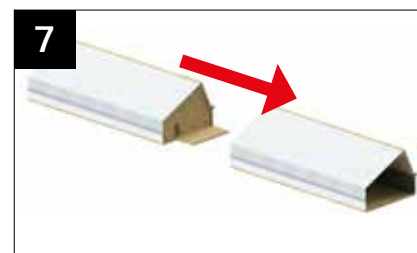
Due to the length of the beams they are split into two parts requiring the use of a bracket to combine the two. Both halves of the beam should be lifted onto the wall.



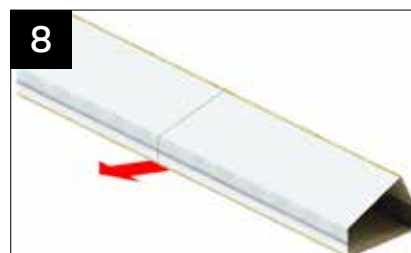
Once on the wall, unscrew the gutter channel to enable you to pull the channel back slightly on both halves of the beam. Next position the beams together so the edges of the beams meet.

In a non brick wall situation, an extra step is re-quired:

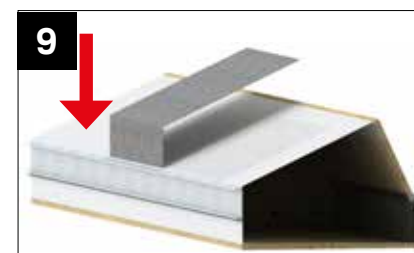
- On a hup! wall (See FIG 1)
- On a window frame (See FIG 2)



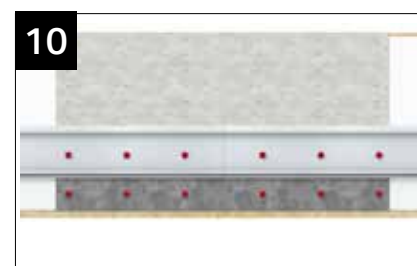
Slide the inline cleat behind the gutter bracket channel ensuring all mating faces are touching the beam equally.



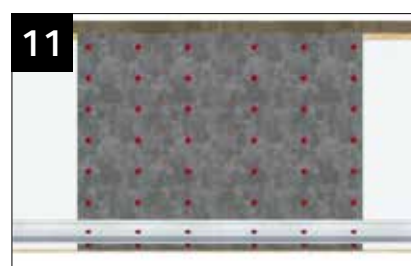
Attach the cleat by screwing 25mm NRST screws through the gutter bracket channel and cleat. Ensure 6 screws are driven through both and 6 are driven below the gutter bracket channel. As shown below.



Working from the centre outwards, continue to drive 36 NRTS on the other face of the cleat. The beam is now complete.



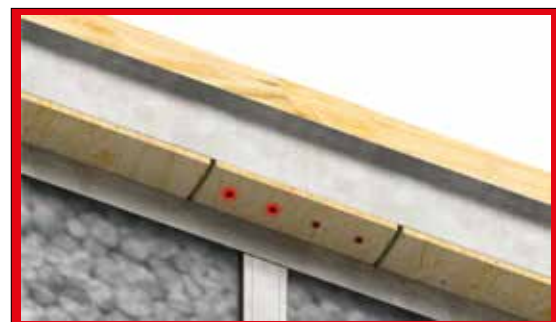
Secure the cleat using NRTS050 25mm self-tapping screws through the gutter channel and cleat. Ensure 6 screws are driven through both and 6 are driven below the gutter channel. As shown below.



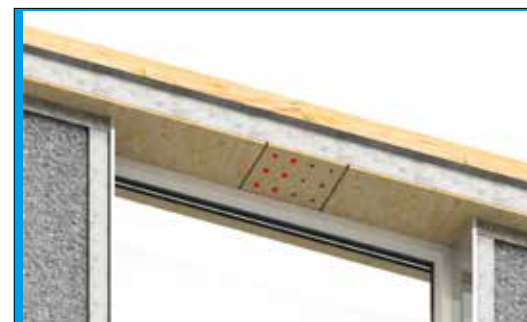
Moving onto securing the top face of the in-line cleat. From the centre outwards, continue to drive 36x NRTS050 25mm through the pre-punched holes.



Place 12 screws into the pre drilled holes of the plate, ensuring the plate is positioned centrally before the first screw is driven through.

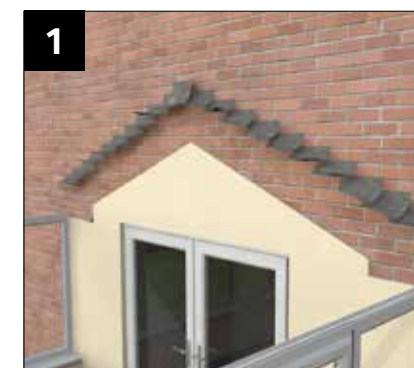


On a hup! wall situation, extra fixings will be able to be screwed into the OSB plate. Do so on the opposing side to the existing RRX025 screws installed earlier. Install screws where possible whilst maintaining equal spacing.



On a window frame, extra fixings will be able to be screwed into the OSB plate. Do so on the opposing side to the existing RRX025 screws installed earlier. Do where possible whilst maintaining equal spacing.

## INSTALLATION - SOLID ROOF - BOX EAVES BEAM



If replacing an existing roof fold back the flashings, safely remove the existing roof and recycle it. If plastered, certain areas will need removing. Fixed light sealed units will need to be removed to allow fixing of box eaves beam. Remove old silicone from head of all frames. NOTE: If fitting onto super-insulated columns refer to page 62.



Using low modulus neutral clear silicone, apply to the underside of the OSB beam support shelf. Then locate the support shelf's (NRSS 090) to the front corners.

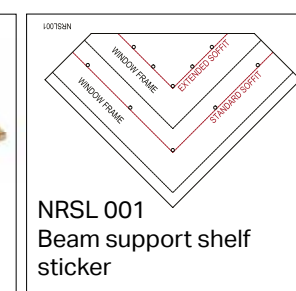


Secure support shelves to frames with 6 x fixings (3 each side) 4.8 x 32mm Phillips counter sunk self drill screw (NRBA 012).

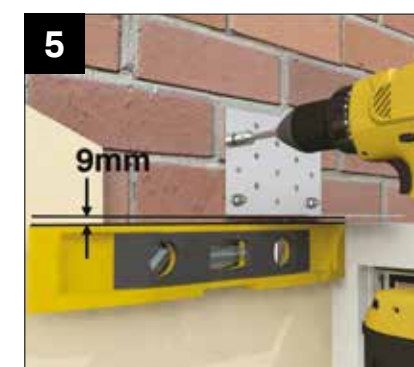


Timber positioning spacers attached to underside of support shelves. Ensure these abut internal frame (also shown below).

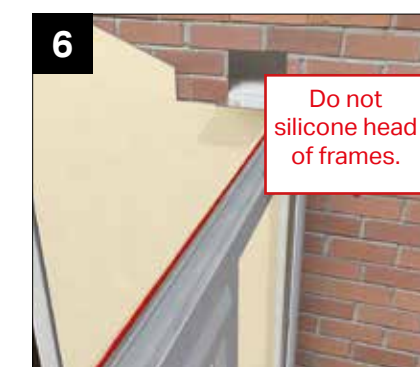
**FOR ROOF WITH VARIABLE PITCH  
PLEASE TURN TO PAGE 74**



Now fit the NRWB001 box beam wall brackets - one to each side - Bracket sits 8mm inside internal frame line and is set 9mm above window frames (measured to underside of bracket). Remove any interfering plaster work. Bracket must go back to host wall. Not required if sat on masonry, galvanised straps to be used (NOT SUPPLIED).



Mark positions for resin anchors (NOT SUPPLIED) appropriate to substrate. Try to fix into solid masonry - 4 fixings. NOTE: The positioning of this bracket may differ. Prior to fixing the bracket ascertain by levelling the high point as all box beams need to be perfectly level (see step 8).



Ensure frame heads are clean and free of silicone, this will allow easy positioning of the box beams.



READ BEFORE FITTING

BEAMS AND RIDGE MUST BE PROPPED/SUPPORTED THROUGHOUT THE INSTALLATION  
SEE GUIDE BELOW FOR DETAILS OF PROPS/SUPPORT.  
DO NOT REMOVE ANY PROPS UNTIL THE OSB AND STEEL HIP PLATES ARE FULLY FIXED INTO PLACE.  
PROPS/ SUPPORTS MUST BE POSITIONED 250mm FROM CORNERS AND MAX 2000mm CENTRES AT THE PROP LOCATION MARKS, PROPS NOT REQUIRED AT HOST WALL (REAR L BRACKET POSITION)



Refer to your component location plan. Lift side beam 1 into position (2 man lift). Set the beam 10mm away from host wall. Position side beam 2. Again 10mm away from host wall. Check box beam overhang on page 16 and below.

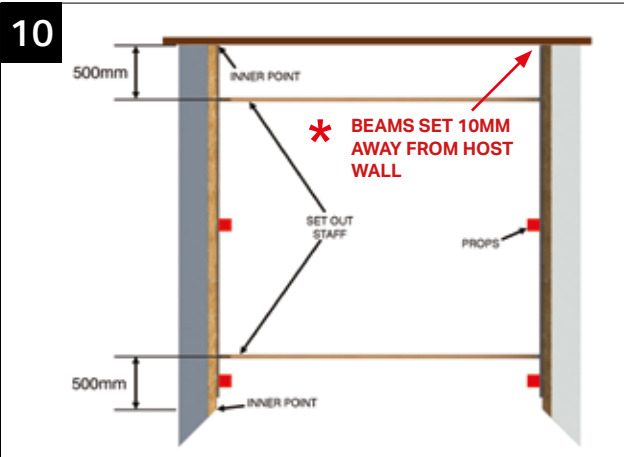


Check the beam is level. Pack off top of frames if necessary. Insert a support prop under the beam. Adjust the height of the prop to ensure the beam is level in length and side to side. (see inset).



Fix a prop into the steel section of the beam as shown above. Props should be at max 2000mm centres within 250mm from each corner (prop fixings NOT SUPPLIED) 75x50 timber props NOT SUPPLIED.

STANDARD 40MM SOFFIT = 26MM OVERHANG  
EXTENDED 151.5MM SOFFIT = 137.5MM OVERHANG



EXAMPLE  
Above is a typical 4m x 4m layout, this shows positions of 75mm x 50mm support props and set out staff.  
\* NOTE: A 10mm thick OSB spacer is attached to beam face this ensures beam is set 10mm away from host wall.



With set out staff flush with underside of beam, fix to face of beam using 2 x (NRTS050) provided. Staff set-out cleat fixed to internal face of box beam. Once fixed the staffs will ensure beams remain parallel to each other.



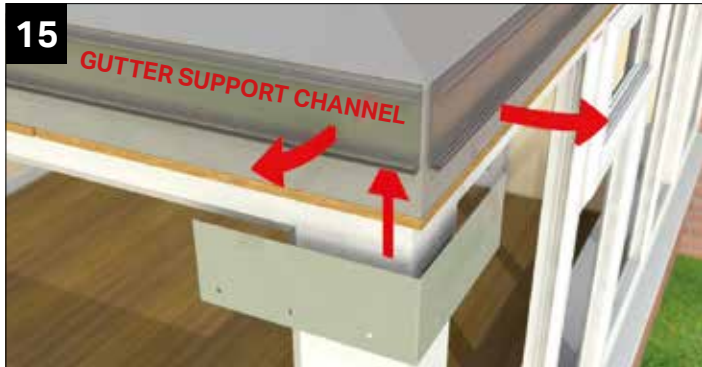
Width of set out staff matches size given on critical dimension sheet. Pushing or pulling a beam will move adjacent beam the same distance. Equalise soffit overhang. Finally check diagonals are equal.



Having installed side beams lift the front beam into position, beam 3. Prop and level beam 3. NOTE: Refer to page 80 when installing beams with a pitch difference.



Once the beams have been propped and are level, check the rear L brackets and pack if required.



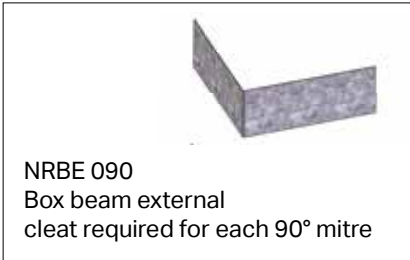
Gutter support channel extrusion is factory fitted but ease out both sections and slide external cleat behind.



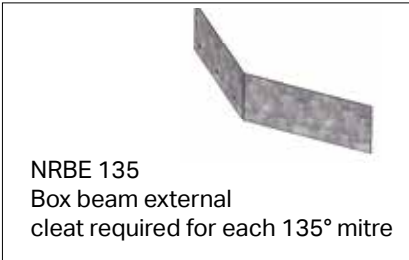
Line up bottom of the cleat with the bottom edge of the steel using (CHAA 006) fixings, fit 12 per cleat, 6 in predrilled holes, 6 through gutter support channel extrusion (screws provided).



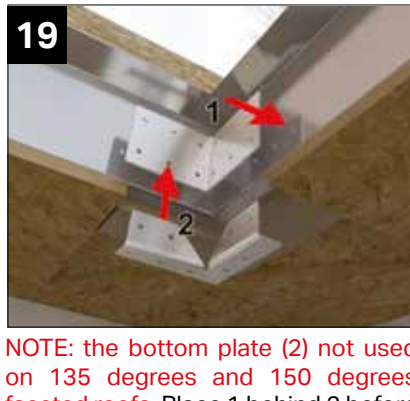
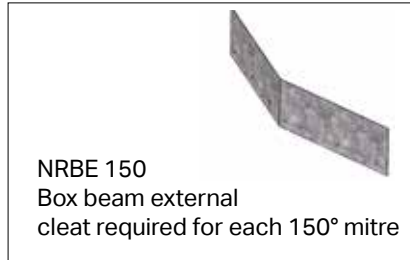
CHAA 006  
4.0 x 13  
self drill  
wafer head



Use expanding foam where two beams join to seal any gaps between them.



Then attach top box beam cleat (one to each corner) - these cleats are specific to the roof pitch. Lay over the mitred joint and position so that the top edge abuts the angle. Then fix using 12 x 4.0 x 13mm wafer head self drilling screws (CHAA 006) provided.



NOTE: the bottom plate (2) not used on 135 degrees and 150 degrees faceted roofs. Place 1 behind 2 before fixing into position using 18 x 4.0 x 13mm (CHAA 006) provided. Refer to page 10 for bracketry details. If using hup!, these brackets are not required on a 199mm soffit.

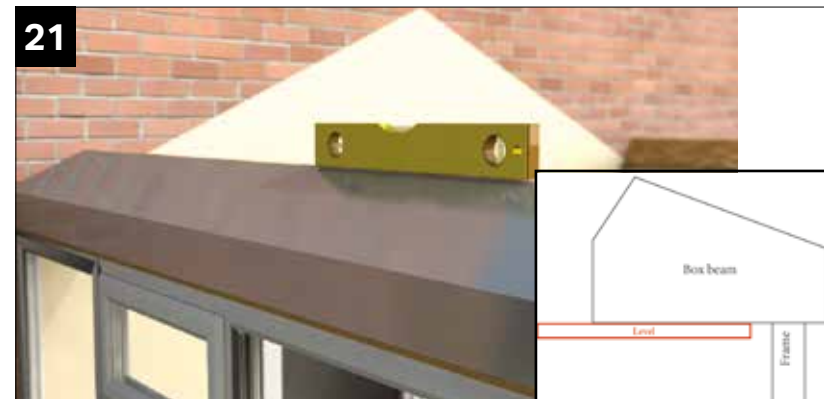


## INSTALLATION - SOLID ROOF - BOX EAVES BEAM



The screws to the underside not accessible when box beam sat on brickwork or super insulated columns.

**NOTE:** These internal brackets NOT used on variable pitched roofs, see page 74.



Check all is level - pack off top of frames if necessary. **CHECK THE UNDERSIDE OF THE BOX BEAM IS LEVEL PRIOR TO FINAL FIXING. PROP IF NECESSARY.**

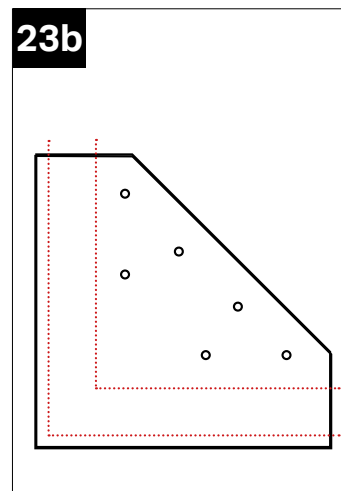
**THE SETTING OF THE BOX BEAMS IS KEY TO A SUCCESSFUL INSTALLATION. ONCE SET SILICONE SEAL THE UNDERSIDE OF THE BOX BEAM TO THE HEAD OF THE FRAMES INSIDE AND OUT.**



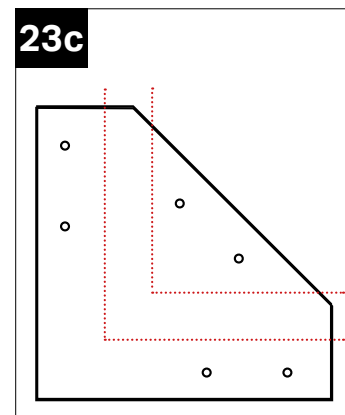
If packers used, recheck for being square, also check diagonals (corner to corner measurement). When these checks are complete finally secure by screwing up through head of frames into box beam. Fixings need to be within 200mm of each corner and at 450mm centres using, for example 4.8 x 80mm baypole screw NOT PROVIDED.



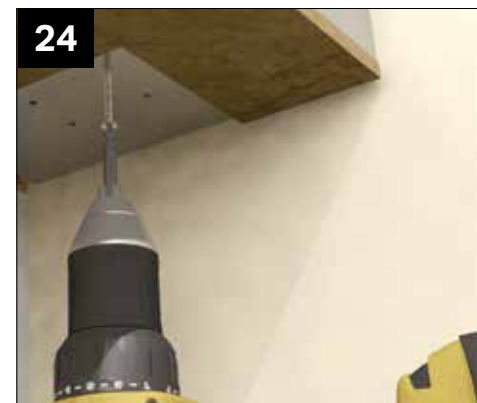
Remove timber positioning dowels (see step 3b). Fix up through the front 90° beam support shelves into the box beam using 6x5.0 x 50mm countersunk wood screw (RRX 025) provided. See fixing points at 23b (standard soffit) and 23c (extended soffit).



Fixing positions for standard soffit.



Fixing positions for extended soffit.



Fix up through the rear box beam wall brackets into the box beam using 6 x 50 x 50mm countersunk wood screws (RRX 025) provided. Finally ensure all box beam joints are fully sealed inside and out.

## INSTALLATION - SOLID ROOF - STRUCTURAL FRAMEWORK



With the box beam secured assemble the 2 part ridge support starter bar extrusions using the single fixing provided.

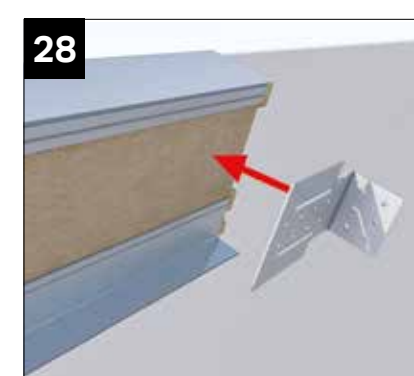


**\*** Remove 10mm spacer (attached to beam face). Once assembled lift and position against the host wall. Slot onto beam support shelf.



Place angle finder under starter bar to check the pitch. Fix aluminium starter bar extrusions to the host wall (pack off where needed) within 200mm of ridge and box beam plus at least one more equidistant between the two. Use resin anchors suitable for substrate (NOT PROVIDED).

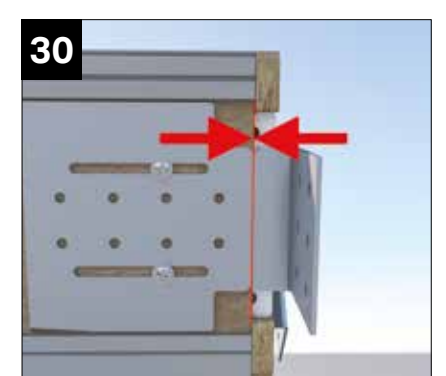
**IMPORTANT**  
**PLEASE READ IF YOUR ROOF FEATURES GLAZING AT THE HOST WALL, SEE PAGE 33.**



To the rear of the ridge, offer the adjustable rear fixing bracket (one each side) into position.



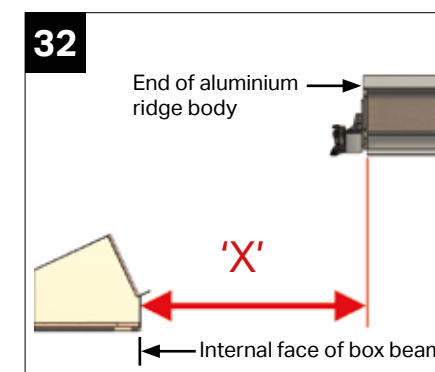
Attach via the slots using 2 x NRTF050 4.2 x 25 wafer head self drilling screws provided. Do not fully tighten at this stage.



Slide the bracket so that the 'V' notches align with the aluminium ridge section extrusions then tighten screws.



Offer the ridge into position. **IMPORTANT: Support the ridge with adjustable support props. The props must stop in place until the roof is fully built.** Check for being level.



To set the ridge check critical dimension job sheet for dimension 'x'.



The bracket allows for the ridge to be adjusted to meet dimension 'x'.



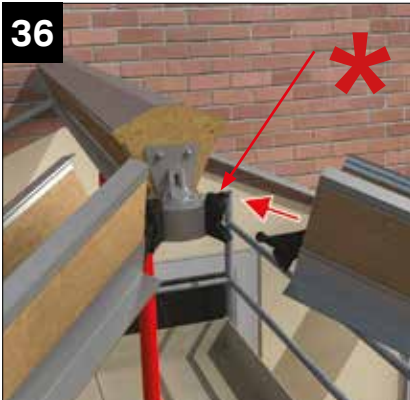
# INSTALLATION - SOLID ROOF - STRUCTURAL FRAMEWORK \ PANEL SEQUENCE



Once ridge is set and level, secure to the host wall using resin anchors suitable for substrate (NOT PROVIDED).



Finally secure the rear ridge fixing bracket using 8 x NRTF050 (PROVIDED) one bracket on each side of the ridge.



Offer into position the hip bars. Using the speedlock on the glazing bar end offer the 'ball' into the mating speedlock housing attached to the ridge end.

\* Tap down upper dead lock. Push up lower wedge lock see step 40.



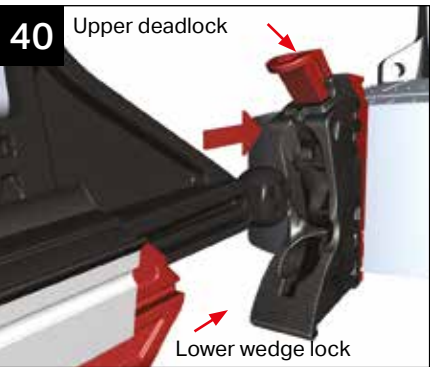
The Ultraridge hip design has been updated; extending the steel and aluminium components over the beam mitre for an improved structural connection. See page 80 for hips with variable pitches.



When in position (tight to the corner) the hip should sit on the box beam shelves.

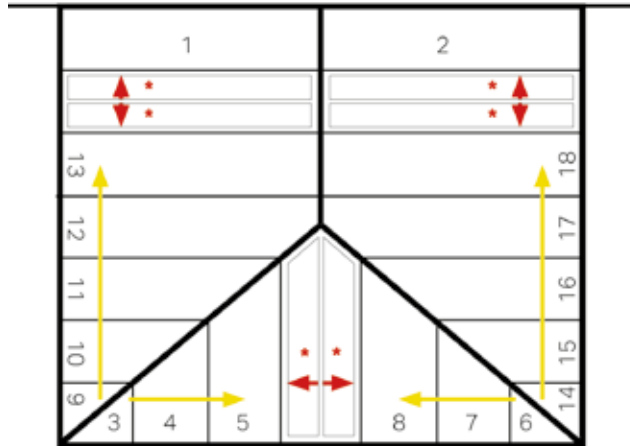


Fix the hip down into the box beam through 4 x pre-drilled holes using WPCS020 screws (provided). **NOTE:** The external box beam cleat is still required.



**NOTE:**  
IF GLAZING IN ROOF FIT SHOES TO BEAM AND RIDGE, FIT GLAZING BARS SEE PAGE 41.  
  
PRIOR TO FITTING PANELS!

## PANEL FITTING SEQUENCE



Now lower into position the 2 host wall panels 1&2, one either side of the ridge. Then panels labelled yellow.

\* = ALL RED EXPANDABLE PANELS EXPAND OUTWARDS AND ARE INSTALLED LAST

Do not snip panel straps until all panels are fully installed

# INSTALLATION - SOLID ROOF - STRUCTURAL FRAMEWORK

IF THERE IS A VELUX AS PART OF THE INSTALLATION, PLEASE ENSURE THE PANEL IS INSTALLED THE CORRECT WAY ROUND. THE PANEL WILL HAVE A LOCATION LABEL ON THE SIDE WITH A T = TOP AND B = BOTTOM.



Next, install Ultrapanel working from each hip bar towards the centre.



Lower into position the front facet central expandable panel. Marked with a red label.



The expandable panel will expand to take up any tolerance gap. Snip the binding cord on all the remaining front facet panels.

Do not cut the binding cords.



Repeat the process on the side facets.



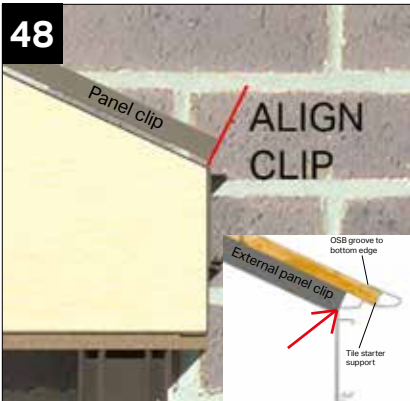
Finally lower into position the expandable panel. Marked with a red label.



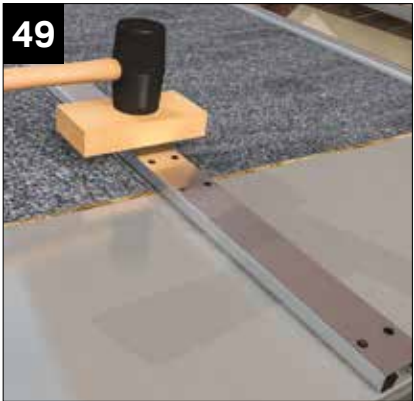
When in position snip the retaining straps. Straps might be red or black.



When all panels installed continue to fit the pre drilled external panel clips (see next image for positioning alignment)



Ensure the panel clip butts up to and inline with the aluminium gutter channel extrusion prior to knocking down. **This is important to ensure correct positioning of tile starter support.** (See larger image at step 52, page 25).



When aligned use a robust mallet to knock down the external panel locking clips (use a short length of timber to protect the clip from indentations).



INSTALLATION - SOLID ROOF - STRUCTURAL FRAMEWORK

NOTE: PRINTED SIDE OF OSB BOARD FITTED FACE DOWN (ROUGH FACE)

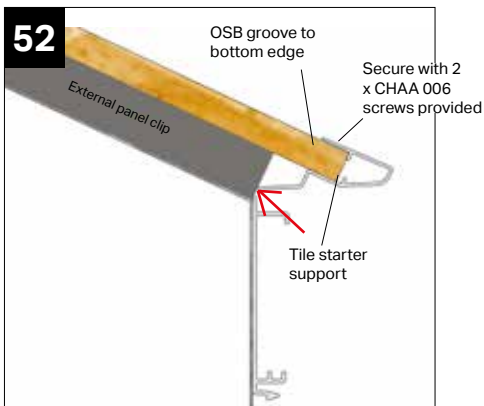


Finally secure the external clips using WPCS020 4.8mm x 38mm self drilling screws provided. (2 into ridge section, 4 into panels and 4 into box beam on full length clips) or through pre-drilled holes on short clips or half clips.

ON THE MITRED CORNERS OF THE BOX BEAM THERE WILL BE A 30MM GAP BETWEEN THE SHEETS OF OSB.  
TIP: USE A 30MM TIMBER BLOCK TO CHECK THE CORRECT SPACING OF THE OSB BOARD.



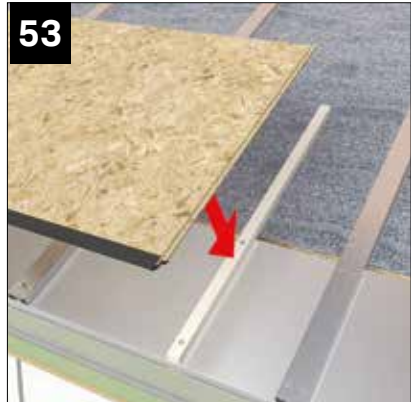
Fit tile starter support, silicone and screw fit. Using location plan, lift OSB board panel A into approximate position. Having fixed tile starter support onto end of OSB, place against ends of external panel clips to locate OSB. Locate first row of OSB panels around the roof using tile starter support to position. Work in the same order that the beams were put on (sides toward front)



OSB groove to bottom edge  
External panel clip  
Secure with 2 x CHAA 006 screws provided  
Tile starter support



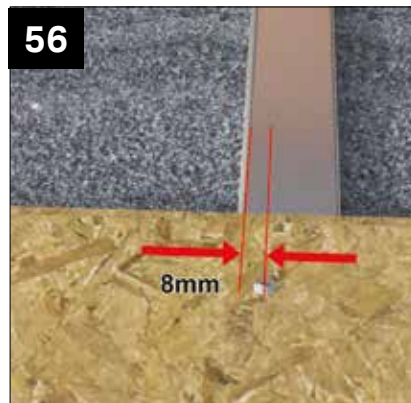
As step 53, support any floating OSB boarding when distance exceeds 600mm to external hip using timber battens provided.



Where required support OSB board at butt joints using timber battens supplied. Battens are 65 x 19 x 700mm long (NRPB010). Required to all joints using the screws provide WPCS 020 (2 x per batten).



With OSB in position fix board 70mm up from tile starter support and 70mm down from upper edge followed by 1 x central fixing. NOTE: Fixing position at step 56.



All boards to be secured 8mm in from either edge. 3 fixings per clip position using NRPS050 4mm x 25mm screws provided.



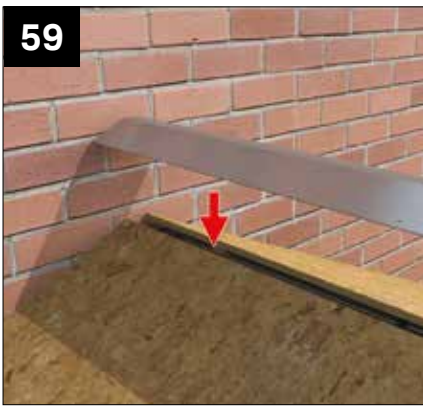
All OSB board edges are tongue and grooved to allow positive location. Continue to board from bottom to top (box beam to wall plate).

INSTALLATION - SOLID ROOF - STRUCTURAL FRAMEWORK



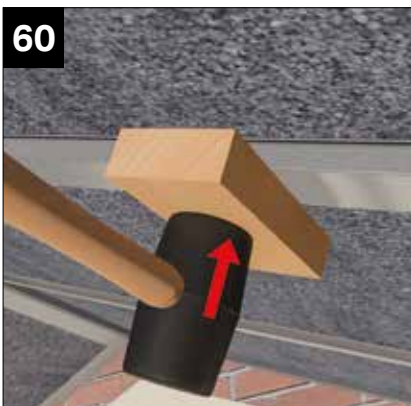
Fit steel hip plates inline with upper edge of the tile starter support strip. [Fixings 300 centres through predrilled holes using NRTS050].

NOTE: THESE ARE SUPPLIED IN TWO HALVES IF OVER 3.2M IN LENGTH TO ALLOW FOR ADJUSTMENT / OVERLAP IF REQUIRED.



Place aluminium ridge cover plate 10mm away from host wall. Fix through the predrilled holes using 4.2 x 25 wafer head drilling screws (NRTS 050) provided.

Installing the breathable membrane at this point will ensure weather tightness.



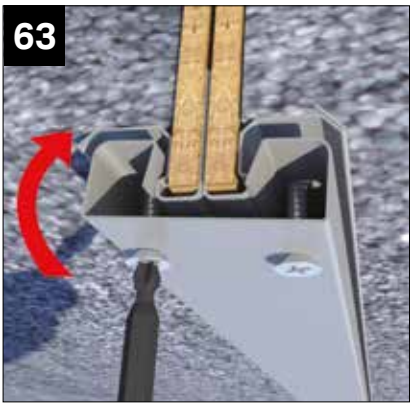
Now offer into position the pre drilled internal panel clips. Again, use a timber packer to prevent indentations to the internal clip. NOTE: short lengths, tap into position. Longer lengths, follow sequence steps 63-65.



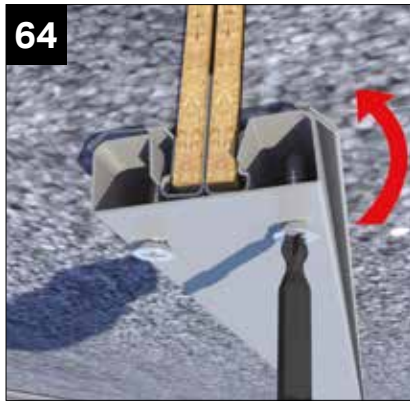
Firstly secure into the panel (at the ridge end) using dry wall fixing screws WPDS020 NOTE: See method of alternate tightening as shown 63-65.



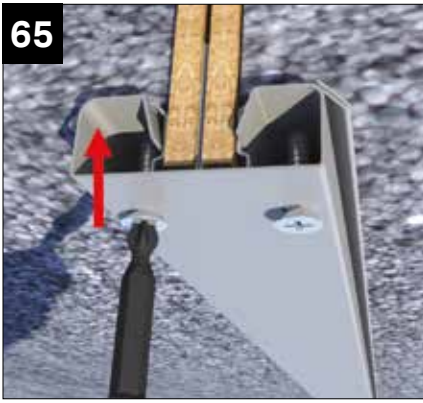
Secure into the panel (at box beam end) as previous image. Again, note method of alternate tightening sequence 63-65.



Loosely tighten alternative screws to enable easy clamping of internal caps.



One side then the other.



Fully clipped into position. NOTE: for longer lengths you may need to tap on as step 60 above.



Secure attachment plate using 2 x CHAA 006 screws provided to box beam support shelf.



INSTALLATION - SOLID ROOF - STRUCTURAL FRAMEWORK



Secure attachment plate using 2 x CHAA 006 screws provided to the ridge body.



Where jack rafter abuts hip bar fix the jack rafter connection plates using 4 x CHAA 006 screws provided. NOTE: fit one screw through half clip that meets hip bar.



Fix the internal hip retaining plates using 18 x CHAA 006 screws provided into the box beam shelf and hip bar. NOTE: These plates are not required on victorian hips.



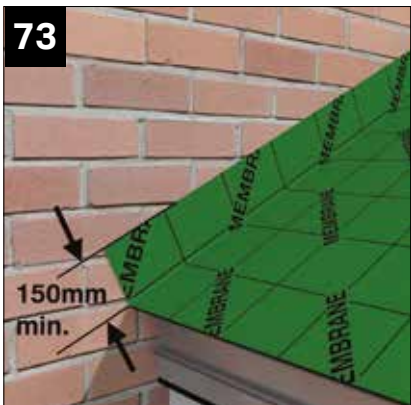
Fix the internal lower hip brace plate using 4 x CHAA 006 screws provided. NOTE: These plates are not required on victorian hips.



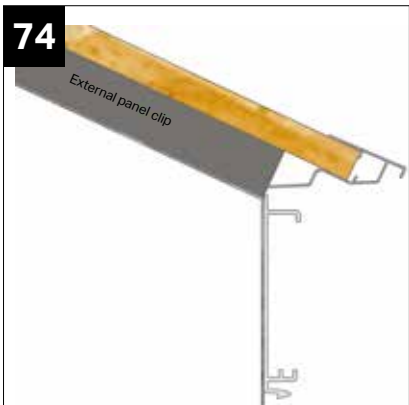
Fix the internal upper hip brace plate using 4 x CHAA 006 screws provided. NOTE: These plates are not required on victorian hips.



Image shows roof covered with breathable membrane. Follow the sequence. Membrane part no: RRMA050



Start at eaves and position 150mm up the host wall. Place membrane (as step 75). Overlap each hip (as step 76).

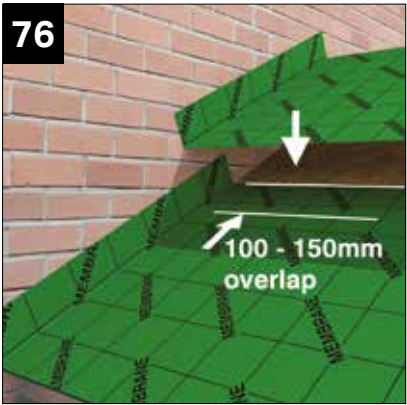


The breathable membrane is aligned to the front edge of the tile starter support.



Minimum 200mm overlap over hips. Fix using staple hammer with maximum 12mm stainless steel staples. Take care not to cut through lower layers whilst trimming.

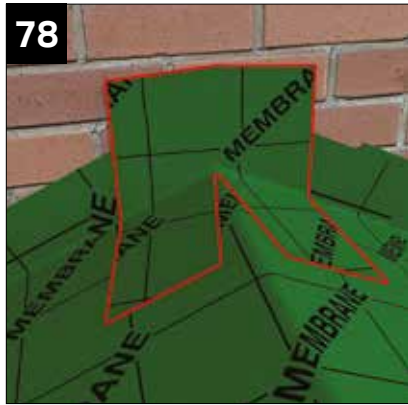
INSTALLATION - SOLID ROOF - WATER PROOF UNDER LAYER



Work up the roof, overlapping the previous layer by 150mm at pitches of 14° or below and 100mm at 15° and above.



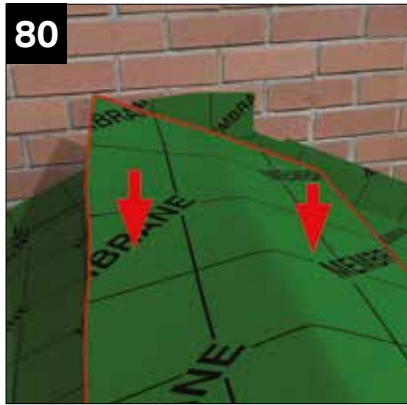
On solid roof, the membrane layer straddles the ridge. Slit as shown to allow transition to the opposite side. If the membrane falls short of the ridge plate, install an additional canopy, centrally over the ridge.



Install additional patch of membrane to protect the apex at the host wall. Secure with tape supplied.



Patch fully taped.



Finally cover the previously installed patch with a third layer to ensure positive seal. Staple into position.



Use tape to seal the layer at ridge end.



Find the centre line of the steel hip capping plate below the membrane and mark a centre line through to the final point.



Place the hip spine with the centre aligned to the final point, mark each side of the spine then remove.



With the spine removed. Continue to follow fitting of the tile starter strips.



READ BEFORE FITTING

FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN TEMPORARY DISTORTION WHICH MAY MEAN TILES WILL NEED TO BE RE-LAID. Following these instructions allows tiles to correctly 'float' for expansion and contraction.

- 1. ENSURE TILES ARE FITTED TO THE CORRECT INSERTION LINE – DO NOT PUSH TILES TOGETHER. Insertion lines vary according to temperature when installed
- 2. DO NOT OVERTIGHTEN SCREWS

The NRTT001 Tile Screw Fixing Tool can be found with the NRTF050 screws inside the fixings component box.

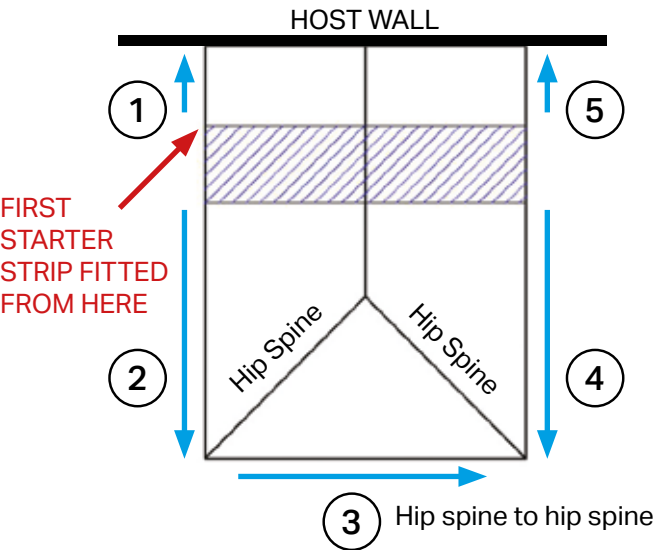
Hold the tool in place as shown whilst installing each screw and remove to ensure a fit which is close but not too tight – This is to allow for the expansion and contraction of the tiles.



Tile starter strips are lettered in correspondence with its location shown in the tile location plan. **TILE STARTER STRIPS ARE NOT FITTED IN ALPHABETICAL ORDER, PLEASE FOLLOW INSTALLATION SEQUENCE ON THIS PAGE FOR CORRECT FIT.**

GLAZED ROOF

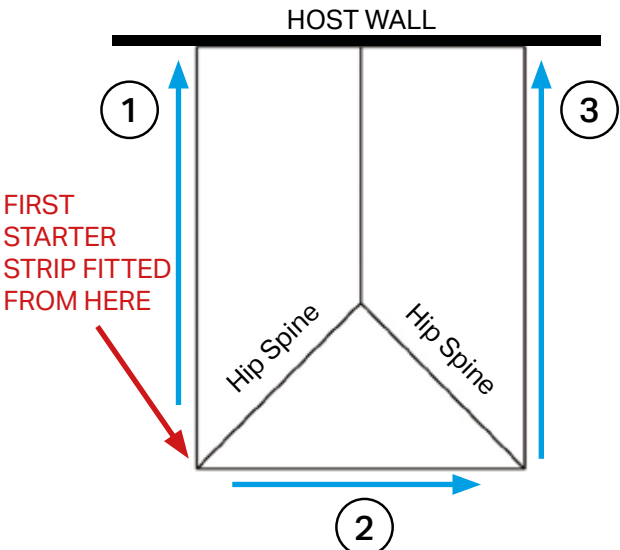
Details shown also apply to Victorian shapes.



If a roof contains rectangular glazing panels, starter strips must be set out from the glazing bar centre.

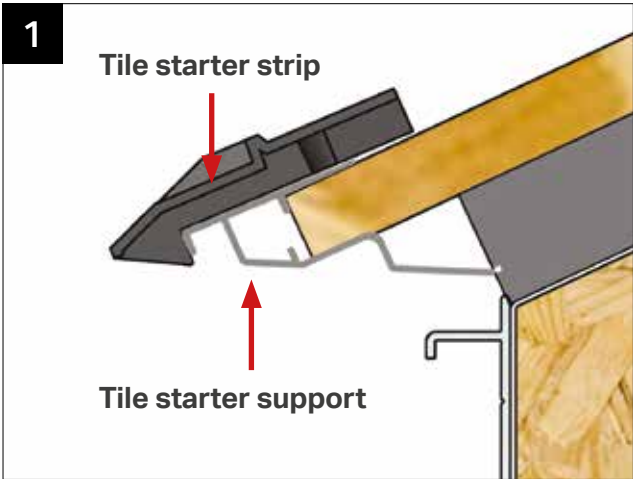
**KEY**  
Fitting order is labelled 1 to 5  
Direction of starter strip fitting →

SOLID ROOF

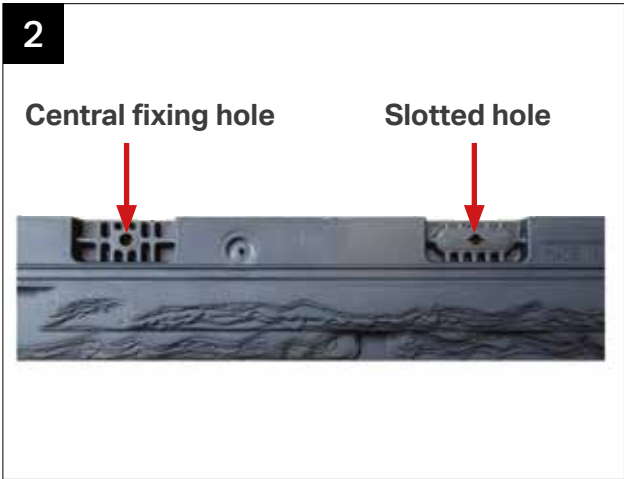


If a roof contains no rectangular glass panels and is classed as 'solid' then starter strips must be set out from the hip spine.

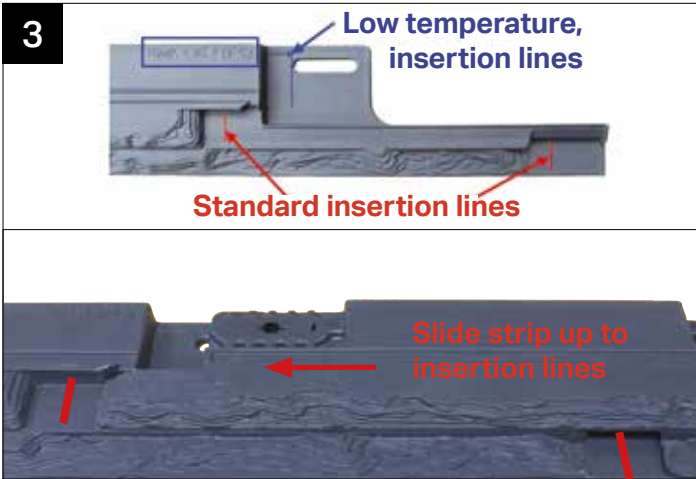
**KEY**  
Fitting order is labelled 1 to 3  
Direction of starter strip fitting →



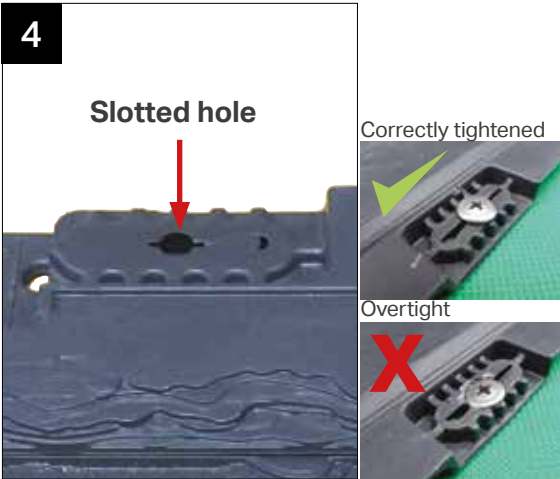
Place starter tile strip on starter tile support, make sure strip is a tight fit up against support.



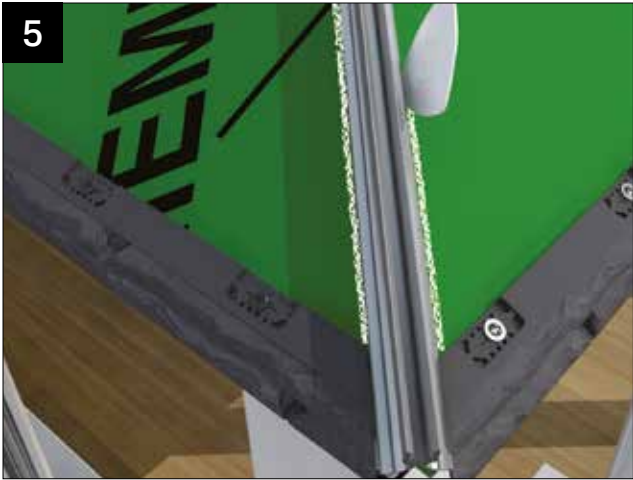
Fix through the central fixing hole for temporary fitting. **(DO NOT FIX THROUGH SLOTTED HOLES UNTIL ALL STARTER STRIPS ARE IN PLACE)**



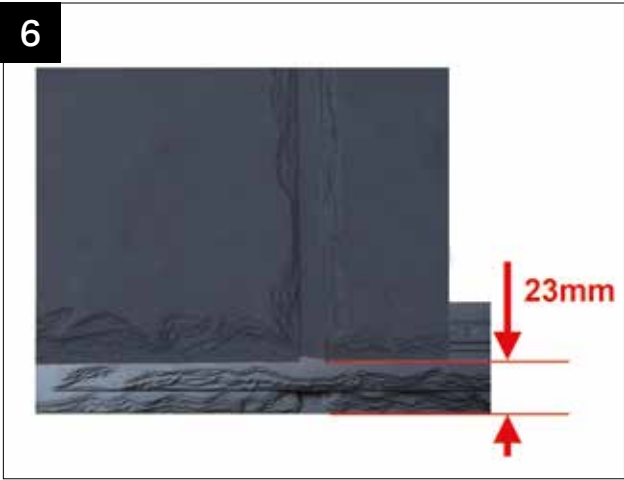
Following the direction stated in the fitting guide (see p29). Align next starter tile strip with the standard insertion lines. **NOTE: IF AIR TEMPERATURE IS BELOW 5°C, ALIGN WITH THE LOW TEMPERATURE LOCATION MARK (TOP RIGHT OF STRIP)**



Repeat steps 3&4 following the fitting order guide until all starter strips are in place and are correctly fitted. Once correct, fully fix through slotted holes along the starter strips for permanent fix.

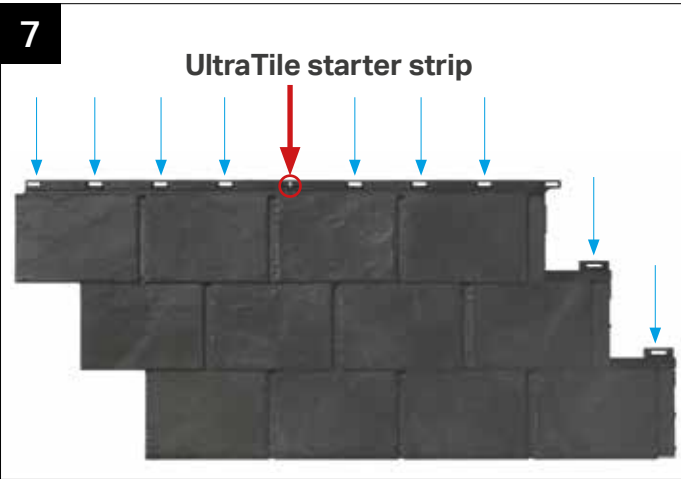


This image shows the starter tile strips being fitted to the already marked hip spine lines (the hip spine will have been removed, see steps 83-84, page 30).

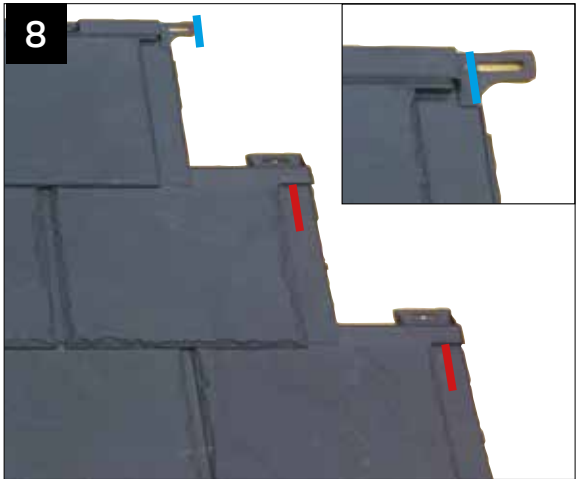


Using the tile location plan provided, locate position of first tile panel (labelled aa1), slide down onto the starter strip leaving 23mm from the starter strip edge. This allows expansion of the tiles in warm temperatures.

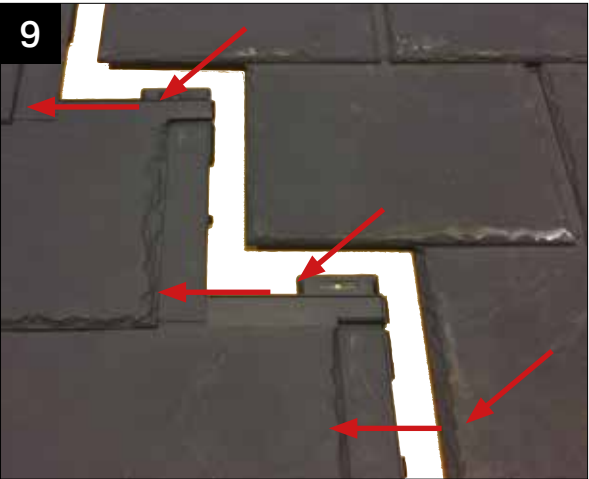
INSTALLATION - SOLID ROOF - HIP SPINES / ULTRATILE



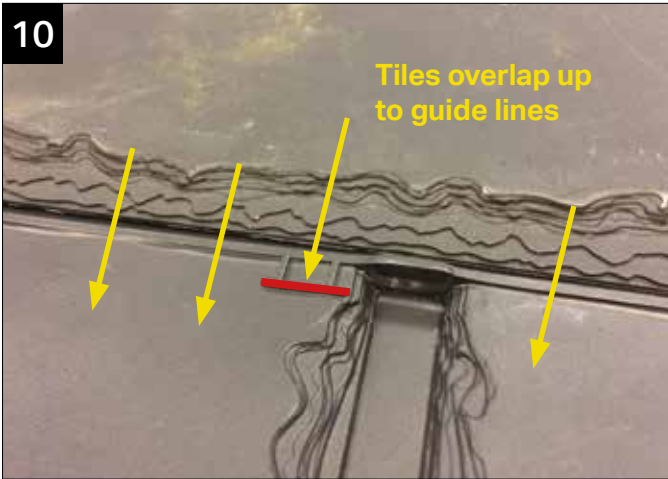
**STEP 1** – fix through central non adjustable fixing hole  
**STEP 2** – fix through remaining slotted holes (10 holes)  
Any residue from the label will require cleaning off whilst installing the tiles.



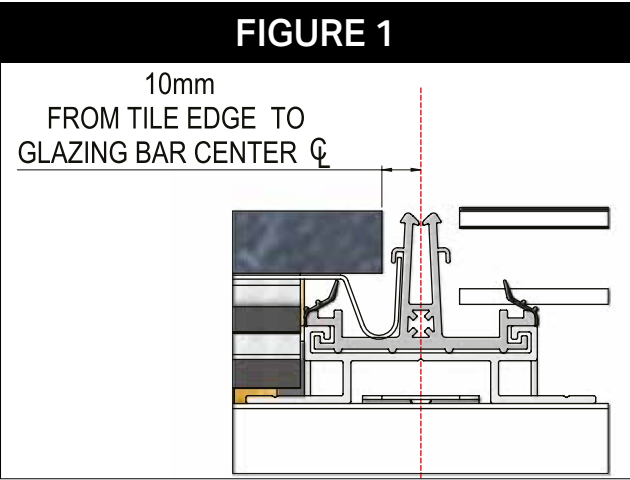
At normal temperatures, of around 15°C, use the insertion lines indicated red in the image. For low temperature installations, below 5°C, use the single insertion line indicated blue, at the top right of the tile.



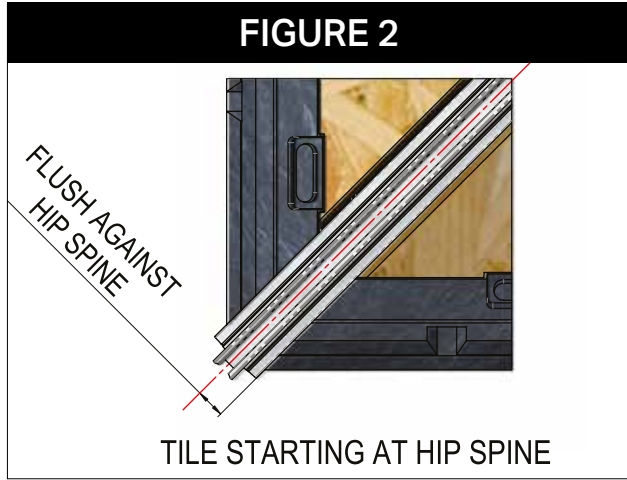
To slot the tiles together, a down and left action is used in one movement. Make sure all tabs have interlocked. Tiles are fitted to the roof from left to right bottom to top. Repeat steps 7,8 and 9 for entire layer.



When inserting next layer, overlay tiles in line with insertion lines (marked in red above) on the tile. Repeat steps 8, 9 and 10 until the roof is fully tiled. See tile finishing references on back for accurate fit and best results.



If the roof contains full rectangular glass panels, the starter strips MUST be fitted from the glazing bar.



If the roof contains no rectangular glass panels, then the starter strips MUST be fitted at the hip spines first.

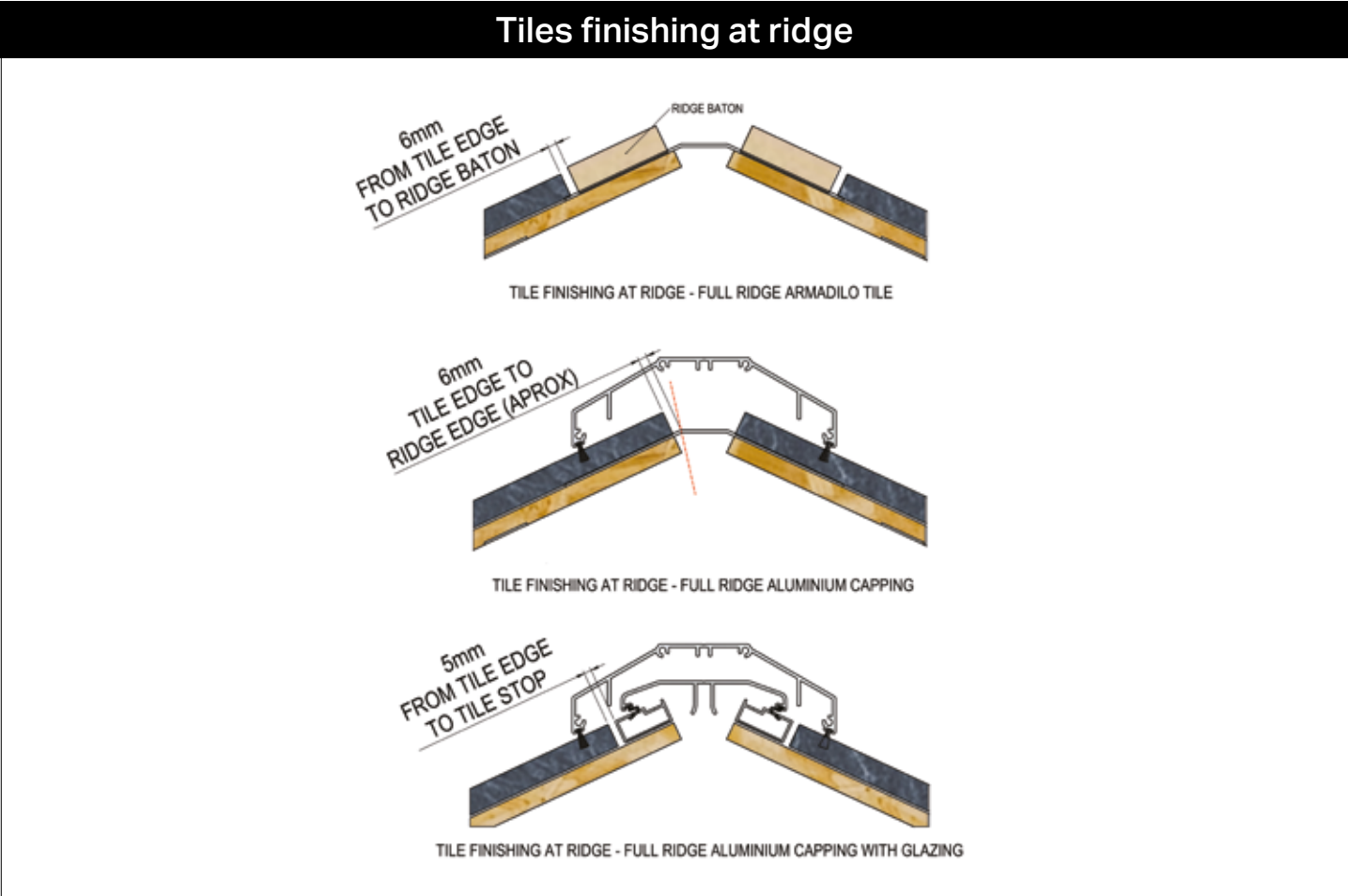
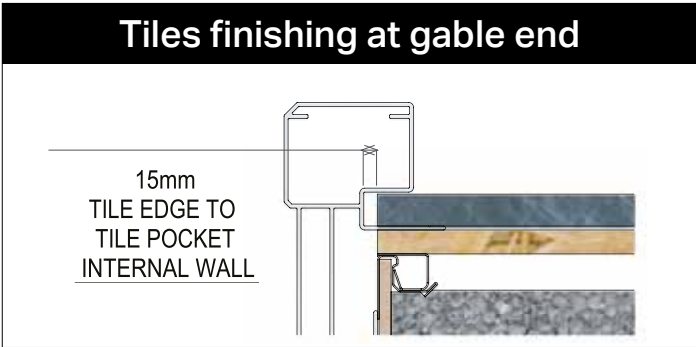
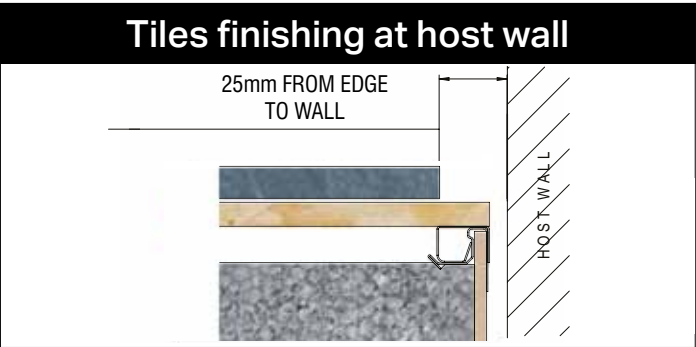
INSTALLATION - TILE FINISHING REFERENCES



Distance from bottom tile edge to tile overlap insertion lines.

This is the amount of tile that should be visible on each layer of the roof. This is a good check to see if the tiles are in the correct position with correct spacing allowances for heat expansion.

**REFERENCE DIMENSIONS ONLY - NOT SET OUT DIMENSIONS**  
- site conditions may cause these dimensions to vary.





INSTALLATION - TILE FINISHING REFERENCES



Using the tile location plan provided, locate position of first tile panel (labelled aa1), slide down onto the starter strip leaving 23mm from starter strip edge (page 30 step 6). This allows expansion of the tiles in warm temperatures.



Continue tiling the roof as above, working anti-clockwise around the roof. Each set of tiles are pushed down, then slid to the left to engage.



**NRTF 050**  
4.2 x 25 wafer head  
piercing point screw



Fully tiled roof. Ensure the 30mm spacing is maintained between tiles on adjacent facets to accommodate the hip spine. Fit the hip spine on completion of the tiling.



Once tiled, re-fit the hip spine. The hip spine is set 10mm out beyond the mitred lower hip point. Secure the spine at 500mm centres using 4.2 x 25 wafer head self drilling screws (NRTS050) provided.

**IMPORTANT**

IF TILES ARE REPLACED OR RE-POSITIONED SEAL ANY HOLES LEFT BY REDUNDANT SCREW POSITIONS.

IF MANY TILES ARE REPLACED IT WILL BE NECESSARY TO REPLACE THE MEMBRANE.



**NRTS 050**  
4.2 x 25 wafer head  
self drilling screws  
(2 each).

INSTALLATION - SOLID ROOF - CAPPINGS



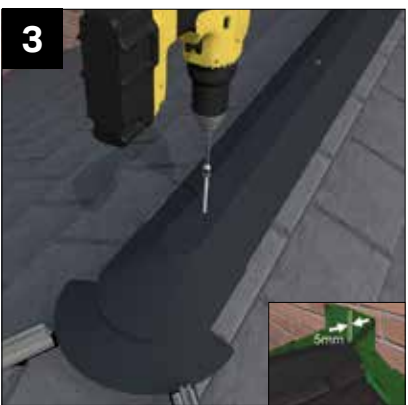
Pre-drill ridge cap at max 750 centres, 6mm holes.



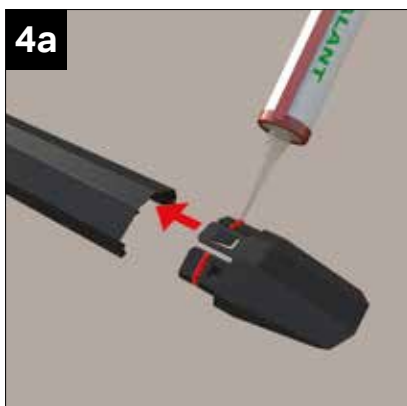
**NRRSA 005BL** 5.5 x 90mm hex washer head self drilling tek screw (with G16 stainless steel sealing washer)



Dry fit the ridge cap with radius end cover and position radius end flashing to create a consistent apron off set. Mark the position before removing the ridge cap. Peel off the self adhesive backing. Mould and adhere in position on top of the tiles as shown.



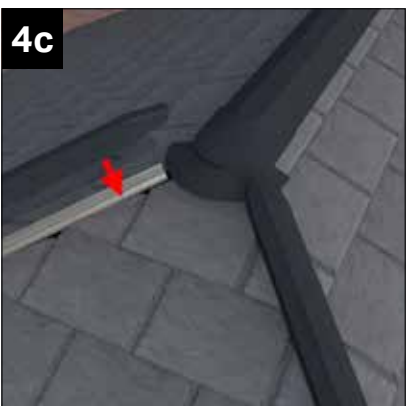
Centralise ridge top cap over apex. Position 5mm away from host wall. Foam fill void, prior to dress leading. Fix ridge top capping using 5.5mm x 90mm (NRRSA 005BL) provided.



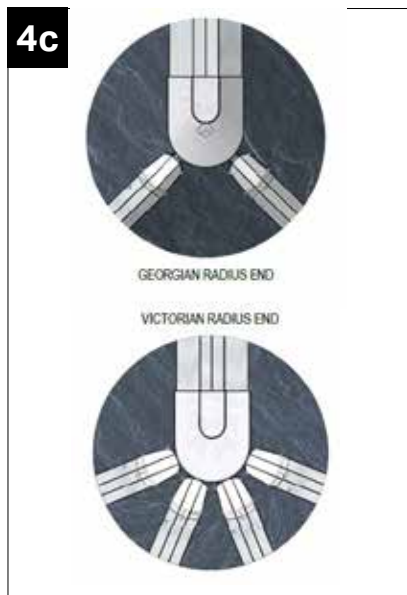
The hip bar top cappings at the radius end require (LMEC004) fitting, these require a bead of silicone applying prior to push fitting onto the end of each bar.



Clip fit hip capping, ensure fixing clips are set at 500 centres (pre - fitted clips).



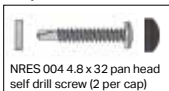
Position hip bar top cappings as shown. Ensure the lower end of the capping is inline with the hip spine prior to fitting end cap.



**4c**



Fit hip spine end caps. NOTE: (NRES 004) end cap fixing screw comes complete with 2 part coloured screw cap cover.



**NRES 004** 4.8 x 32 pan head self drill screw (2 per cap)



**NRHB002** Aluminium hip spine end plate



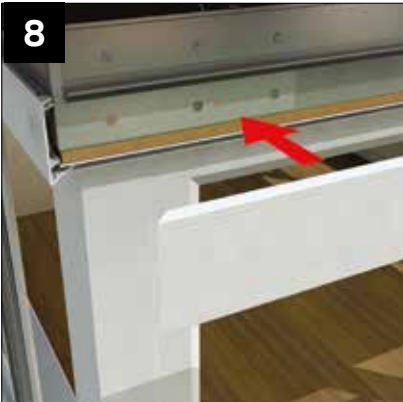
If using existing flashing, dress down over the roof and ridge area then finish as normal. Flashing may need trimming to fit neatly. Apply patination oil to lead for peace of mind (Avoids unsightly lead sulphate run off). Alternatively install new code 4 lead.



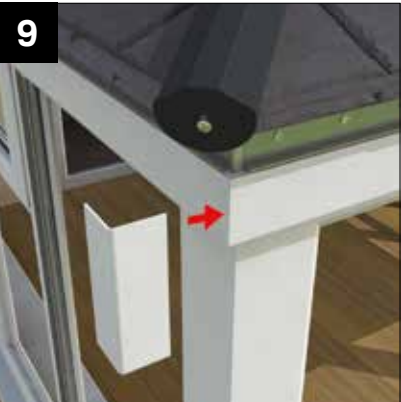
INSTALLATION - SOLID ROOF - FASCIA SOFFIT AND GUTTERING



Screw fix PVCu soffit channel into head of window frame or base of OSB board (screws not provided).



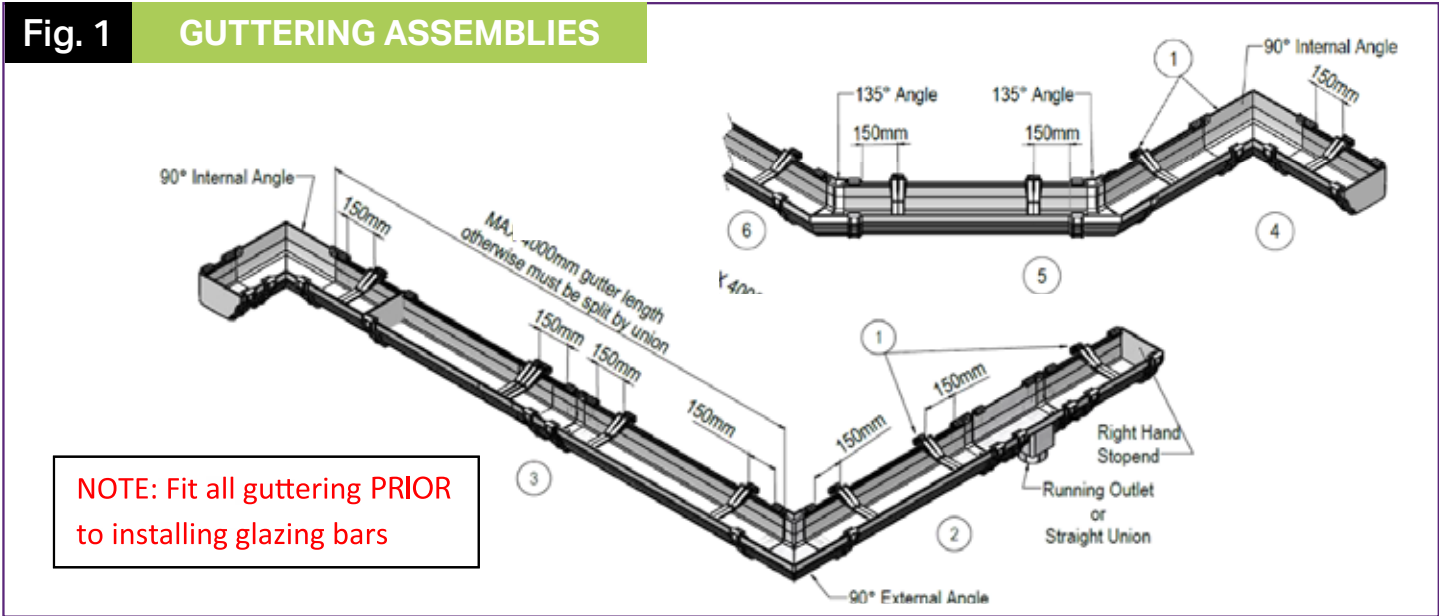
Clip fit PVCu fascia board locating upper leg to lower leg of aluminium gutter channel (see cross section detail on page 11).



Fit PVCu fascia corners with silicone.

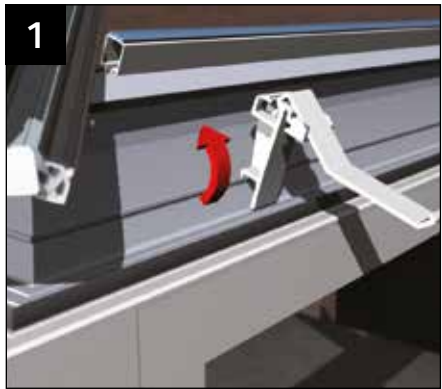
GUTTER INSTALLATION

Fig. 1 GUTTERING ASSEMBLIES



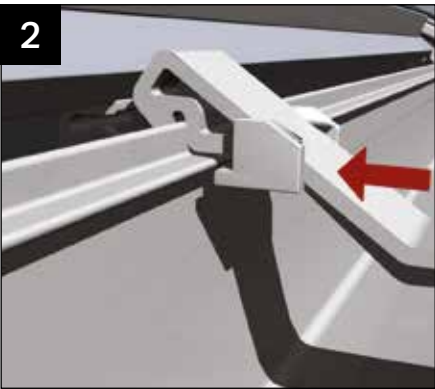
NOTE: Fit all guttering PRIOR to installing glazing bars

**IMPORTANT:**  
NOTE: DO NOT push fit any union onto gutter as this can result in leaks.  
Ensure all lengths of gutter fit to the marked insertion line seen in all unions and box gutter adaptors. (See Fig. 2)  
Ensure to lubricate all rubber seals prior to inserting the gutter.  
Must not slide gutter into union must always roll and lock.  
DO NOT Silicone Seal, this would prevent expansion/contraction.  
If the gutter is not allowed to freely expand, distortion can occur.

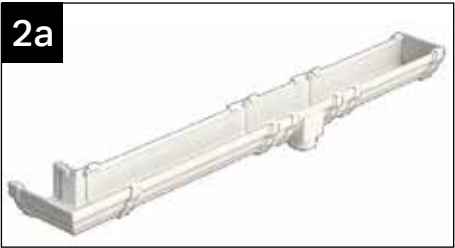


Gutter brackets

Measure & fit all gutter brackets supplied with the kit at maximum 750mm centres and maximum 150mm from Unions and all stop ends. (See Fig. 1)  
Position valley 90° internal angle if required. (See Fig. 1 general finished assembly)  
NOTE: It is difficult to fit valley 90° Internal if the valley is already installed.



INSTALLATION - GUTTERING



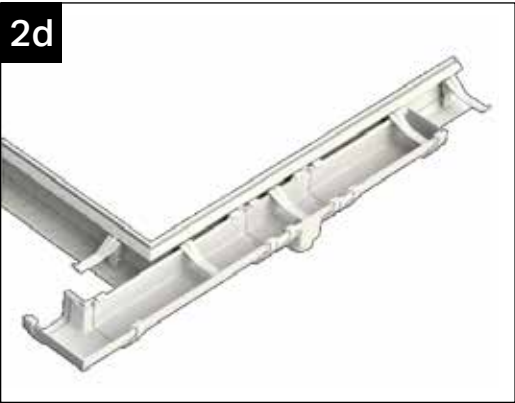
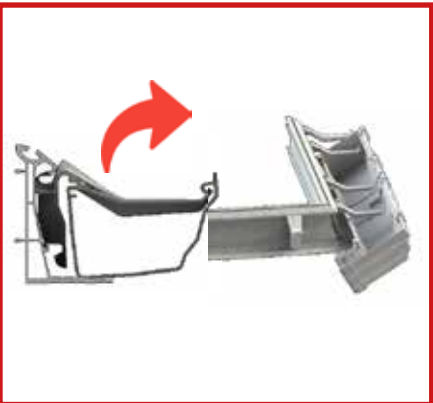
**Pre build up gutter assembly**  
Position the external 90° gutter angle onto the eaves beam followed by any union/outlet. Then measure between the insertion lines (clearly marked on the union/outlets) and cut the gutters to length. **Ensure to lubricate all rubber seals prior to inserting the gutter into position** then snap the integral clips fitted to the unions/outlets over the gutter.



Insert gutter assembly and roll into position, critical to locate the back edge of each section of gutter into the slot in the gutter bracket first.  
NOTE: DO NOT push fit any union onto gutter as this can result in leaks.



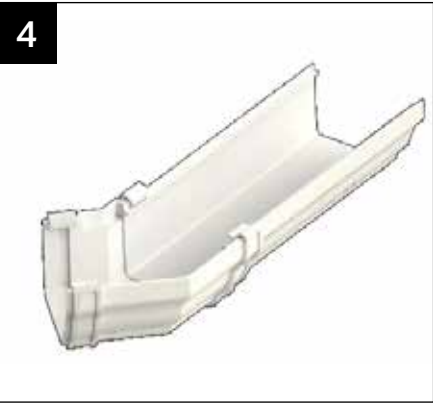
Insert gutter assembly and roll into position, critical to locate the back edge of each section of gutter into the slot in the gutter bracket first. Then clip the front of the bracket into the lip of the gutter. Finally, slide the fixing block into place to lock out the gutter.  
NOTE: DO NOT push fit any union onto gutter as this can result in leaks.



90° angle to overhang and then slide the gutter assembly towards the host wall until flush.



Assemble & cut gutter to size - If over 4000mm span then the gutter must be split by a straight union. Insert gutter assembly and rotate into position (see Step 2). DO NOT slide gutter into union must always roll and lock.  
NOTE: Sliding can result in damage to the seal



Build up gutter assembly; gutter & 135° union. Snap the integral clips on the unions over the gutter and repeat similarly to step 2b & 2c.  
NOTE: Remember to work to the insertion lines.



Build up gutter assembly; gutter & 135° union. Snap the integral clips on the unions over the gutter.  
Insert gutter assembly into brackets using "step 2b" assembly methods. 135° angle to overhang then.  
135° angle to overhang. Slide gutter assembly towards 90° union and then snap the integral clips on the unions (Similar to step 2c).  
NOTE: DO NOT slide gutter into union must always roll and lock.



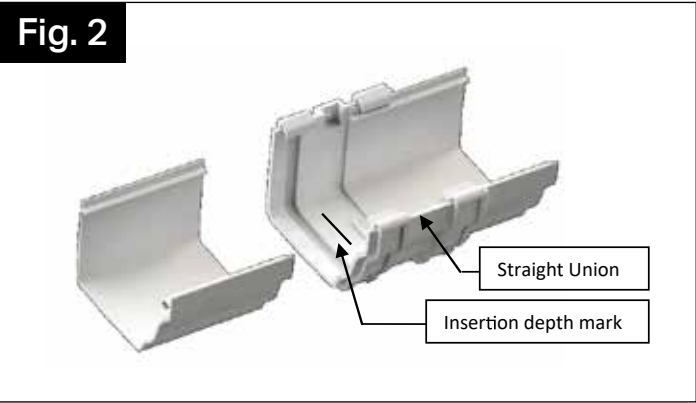
INSTALLATION - GUTTERING



This should be the final step in the gutter system installation for a Georgian or Victorian, as the opposing side will be repeated by the previous steps within this guide. The gutter will essentially meet up at this step.

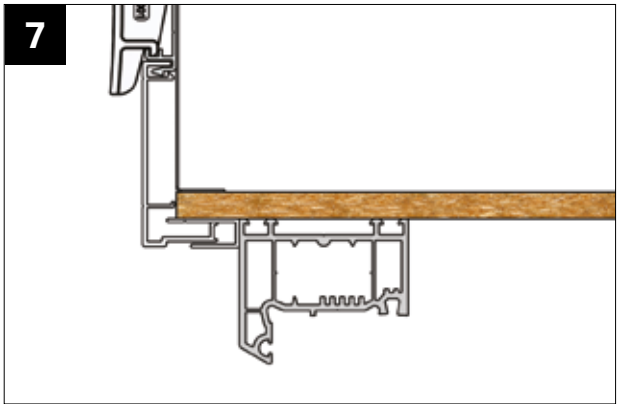
Cut gutter to length and insert gutter assembly into brackets using "step 2b" assembly methods.

NOTE: DO NOT slide gutter into union must always roll and lock.

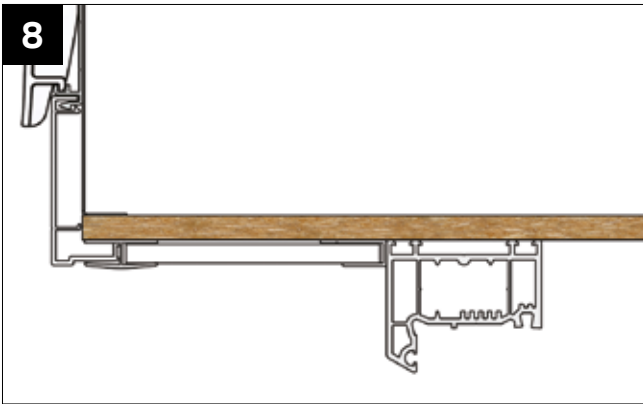


Insert gutter assembly and roll into position, critical to locate the back edge of each section of gutter into the slot in the gutter bracket first.

NOTE: DO NOT push fit any union onto gutter as this can result in leaks.



Standard soffit in detail. Silicone seal 'U' channel to retain lower edge of fascia.

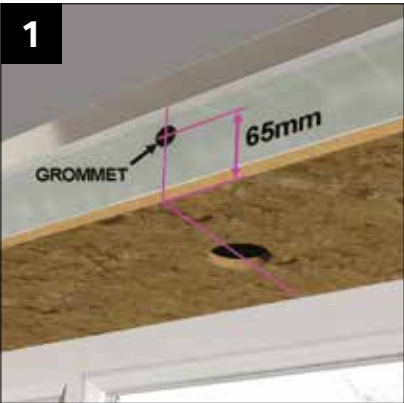


Extended soffit in detail (must be used above super-insulated columns). Silicone seal to retain fascia into 'H' section and soffit into 'U' channel.

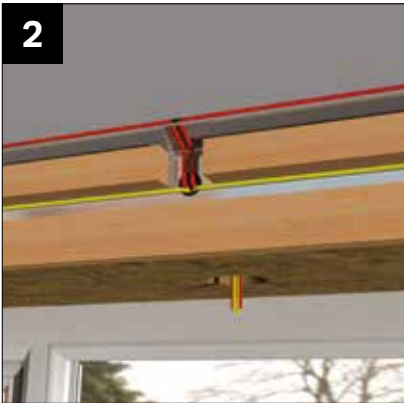
DOWN LIGHT INSTALLATION IN SOFFIT / BOX BEAM

THE ULTRAROOF BEAM IS NOW INSULATED WITH MINERAL WOOL

This page shows our recommendations when installing internal down lights in the Ultraroom beam. All electrical work must be carried out by a qualified electrician and tested in accordance with current BS7671 IEE wiring. Downlighters must be LED IC (insulation contact) Fire Rated.



Cut a hole in the base of the pelmet for your light fitting. Cut a corresponding 20mm dia. hole in the vertical face and fit a rubber grommet.



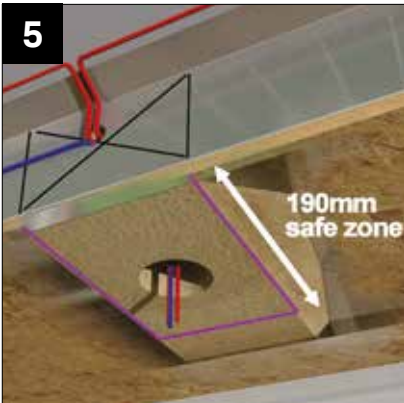
The cables can be passed through the grommet and chased above or between the internal battens as shown. Internally, the wiring should be passed beneath the mineral wool insulation (see inset diagram).



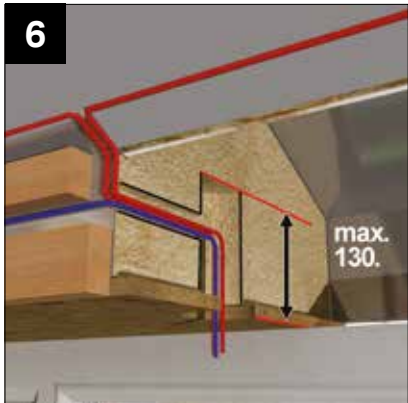
At lower pitches, when only one batten is fitted, the hole (and grommet) are positioned lower on the vertical face and the batten split to allow cable access.



At pitches lower than 17 degrees there is insufficient space on the vertical face to fit the 20mm grommet. Drill 2 holes either side of the light fixing to allow installation of the wires as shown. A 'channel' can be created using 2 narrow strips of plasterboard covered with a top panel.



If the light is coincident with one of the internal foam fillets (defined by the marking on the vertical face) it must be positioned in the 190mm safe zone.



Drill through the OSB and vertical face creating the wiring access. The size of the fitting may require additional space.

NOTE: The cavity should not exceed 130mm from the underside of the beam face

THE ULTRAROOF BEAM IS NOW INSULATED WITH MINERAL WOOL



# SPOTLIGHT INSTALLATION

All electrical work must be carried out by a qualified electrician and tested in accordance with current BS7671 IEE wiring. It is the responsibility of the installing Company / Electrician to obtain the correct downlighters for installing into the vaulted part of the ceiling.

It is important that a lighting plan is drawn up before starting to install any downlights, the downlight centres must not be closer than 130mm from the panel edges.

Where the installation is in proximity to a humid environment (humidity class 4 or above to BS EN ISO 13788 ANNEX A), we recommend an extra Vapour Control Layer as shown below (blue line). In normal conditions this extra layer is not required however, installing downlights into a ceiling also increases the risk of moisture ingress so if in doubt use additional VCL.

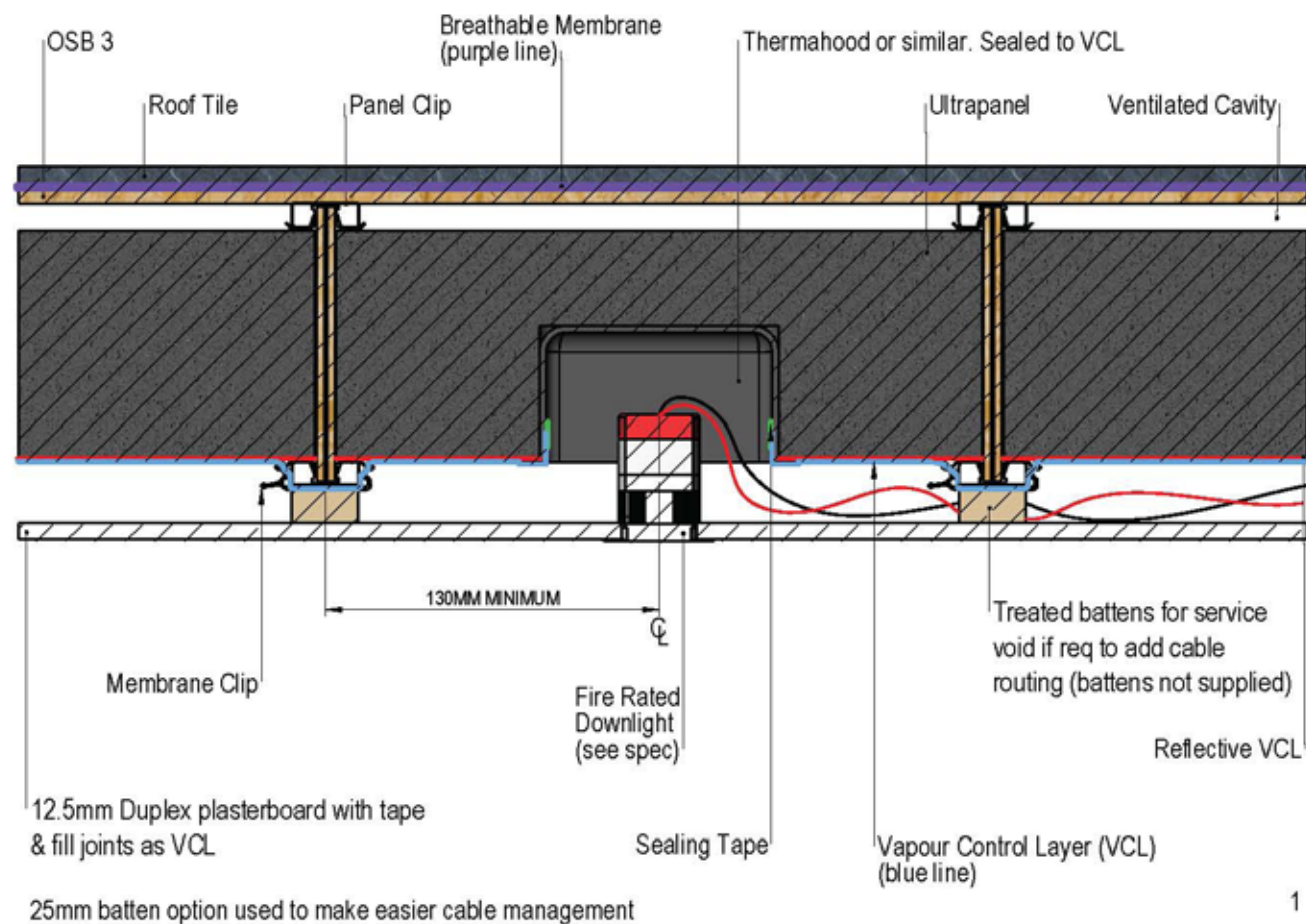
Creating a service void by battening off the internal clips aids the routing of electrical cables between panels if lighting is to be installed in the ceiling vaulted area.

All downlights used must be LED's and have a Fire Rating for a minimum of 30 minutes, have an IP65 Rating and be Insulation Coverable safe (IC). Please note: Certain IC downlighters can not be placed near combustible material like EPS. When examining the downlighter if this label is on the downlighter it is not to be positioned near combustible material.

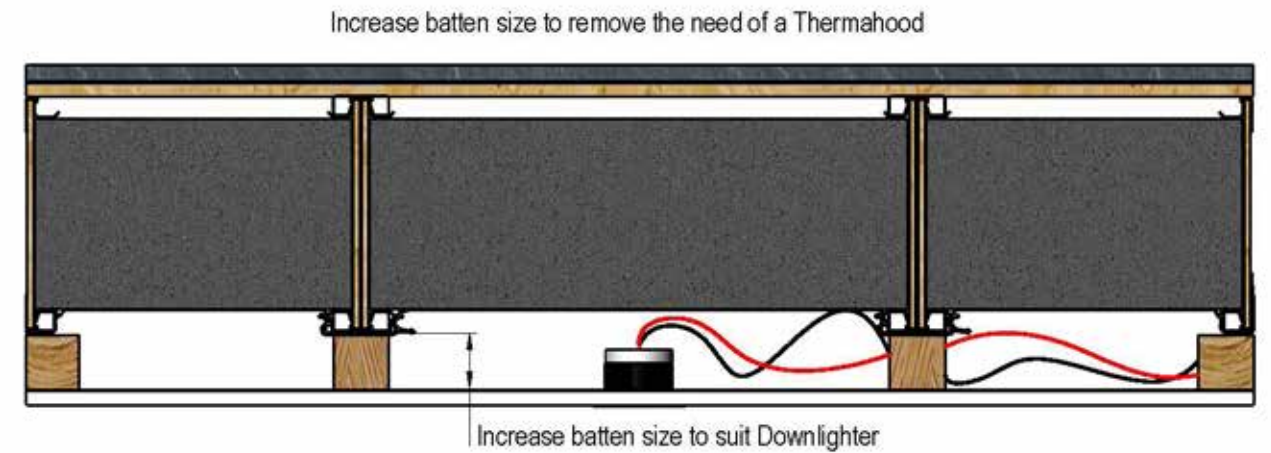
Care must be taken to ensure PVC coated electrical cables do not encounter EPS. If there is a risk of this wiring should be placed through conduit.

Always read the lighting manufacturer guidelines, depending on the type/size of downlighter. It may be possible to increase the batten size to remove the need of the Thermahood.

## Installing Thermahood +VCL



1



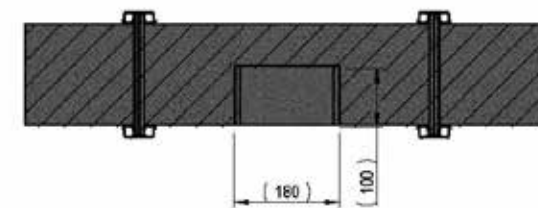
### 1. Recommended Downlight Fitting

All dimensions in this guide have been calculated using Aurora mPRO Downlight, when using other downlighters always refer to manufacturer guidelines. Check page 4 for our alternative recommendations Downlight hood is also recommended.



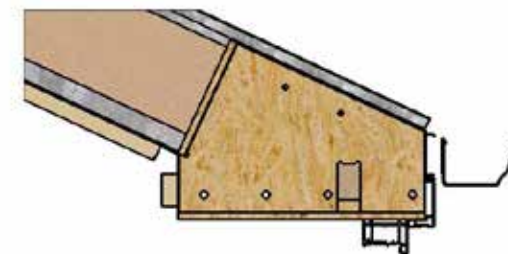
### 3. EPS Cutting

Using a hole saw attachment on your drill, repeatedly gouge out the membrane and eps in the square you have drawn 100mm deep until you create a pocket for the downlight hood to sit in. Do not drill through all the EPS as this will affect the thermal performance.



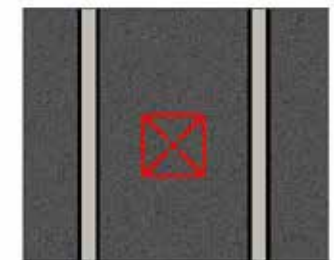
### 5. Battening

We recommend battening off from each clip and along the internal length of the box beam to create a service void if required (see page 2) for channeling wiring across the ceiling area.



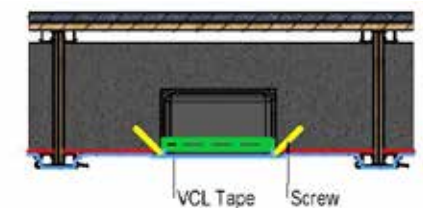
### 2. Marking Up

Once you have worked out where the downlights will be placed, mark downlight centres and downlight hood outline onto the reflective membrane. This shape should be cut out of the reflective membrane prior to EPS cutting.



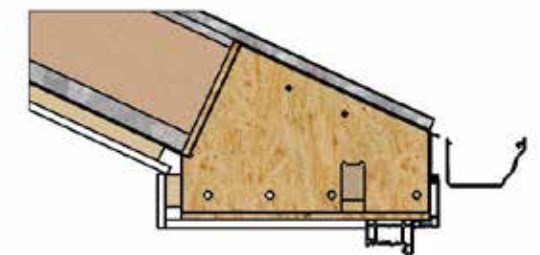
### 4. Thermahood Installation

Fit Thermahood into precut hole, hold into position using 100mm screws as shown (yellow line). Seal the Thermahood to the reflective membrane (red line) using foil tape. If using additional VCL, apply a layer of VCL (blue line) over the Thermahood securing it using Membrane Clips. Cut hole for the Thermahood & seal against the inside face of the Thermahood using foil tape (green line).



### 6. Plastering

Plasterboard and plaster as normal.





Humidity ratings - Class 4 + above = VCL required

Humidity class	Building Type	Relative humidity at internal temperature		
		15 °C	20 °C	25 °C
1	Storage areas	< 50	< 35	< 25
2	Offices, shops	50-65	35-50	25-35
3	Dwellings with low occupancy	65-80	50-60	35-45
4	Dwellings with high occupancy, sports halls, kitchens, canteens, buildings heated with unflued gas heaters	80-95	60-70	45-55
5	Special buildings, e.g. laundry, brewery, swimming pool.	> 95	> 70	> 55

SOURCE: BS 5250:2011 Code of practice for control of condensation in buildings

Daily activities moisture production examples;

A person could perspire and exhale 40 g of water vapour per hour when sleeping, 70 g/h when seated and 90 g/h when standing or doing housework. Theoretically, if the occupants didn't leave the dwelling, slept for seven hours, sat for ten hours and stood or did housework for seven hours each could generate 1.6 Kg of moisture purely due to metabolic moisture generation.

- Dishwashing releases 400 grams of moisture per day
- Cooking using gas produces 3kg of moisture per day
- Cooking using electricity produces 2kg of moisture per day
- Washing clothes generates 500 grams of moisture per day
- Drying clothes indoors produces 1.5kg of moisture per day
- A 15-minute shower produces 500 grams of moisture per shower

H2 LITE 500 CSP

FULL DETAILS ON: <https://www.collingwoodlighting.com>



Recommended Downlights

Please note: Certain IC downlighters can not be placed near combustible material like EPS. When examining the downlighter if this label is on the downlighter it is not to be positioned near combustible material. It is the responsibility of the installer/electrician to find a compatible Downlight



OVIA INCEPTOR OMNI TRI-COLOUR FIRE RATED DIMMABLE LED DOWNLIGHT

FULL DETAILS ON: <https://www.electrical2go.co.uk>



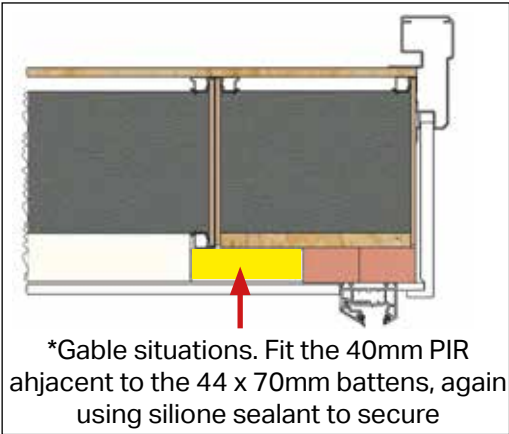
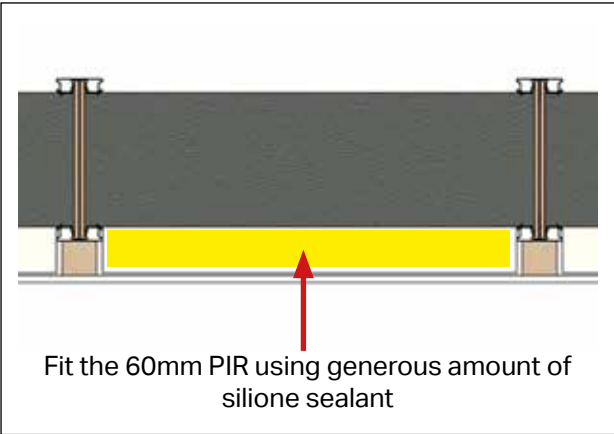
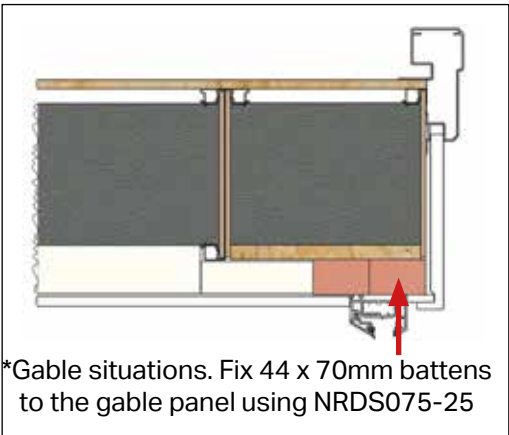
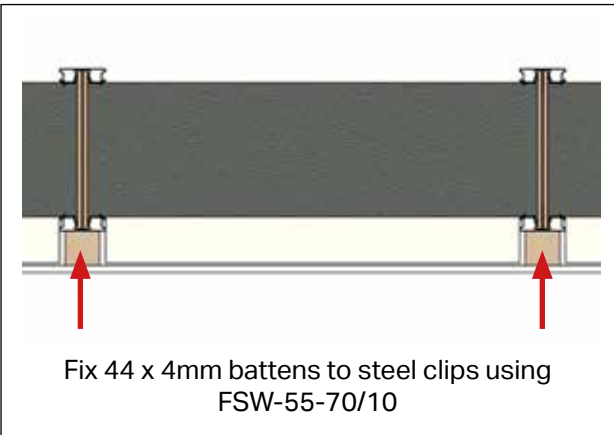
mPRO™ FIXED IP65 DIMMABLE FIRE RATED DOWNLIGHT

FULL DETAILS ON: <https://auroralighting.com>



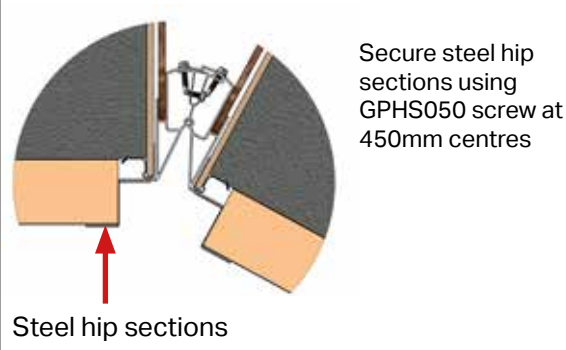
HOW TO ACHIEVE 0.12 U-VALUE

Additional Parts Supplied. \*Gable situations Supplied battens shown on location plan.



Foil backed plaster-board may then be fitted to the timber battens in the normal way. When fixing battens, please refer to the location plan.

Hip Cross Section



PLASTERBOARD GUIDELINES

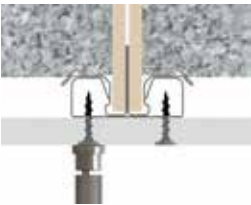
We recommend plaster boarding vertically, attaching the plaster board directly to the internal panel clips.

Horizontal butt joints need supporting with a 20mm thick timber batten (not provided) placed between the internal panel clips.

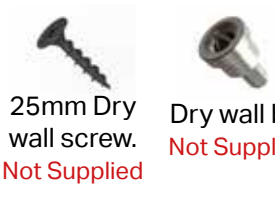
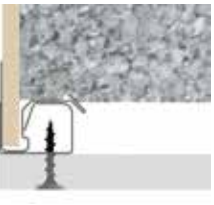
A bead of silicone will hold the batten into position before securing. Fixing of the plaster board is the responsibility of the plastering team in line with manufacturing recommendations.



Dry wall bit assembly



Full Clip Section

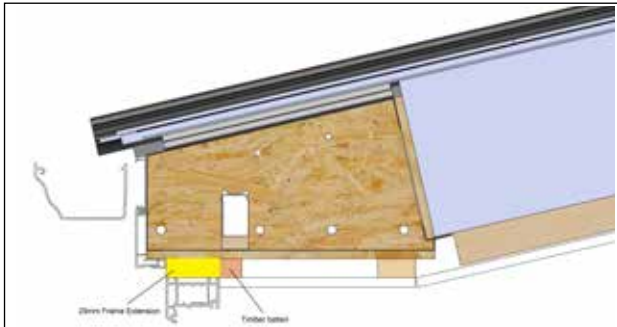


25mm Dry wall screw. Not Supplied

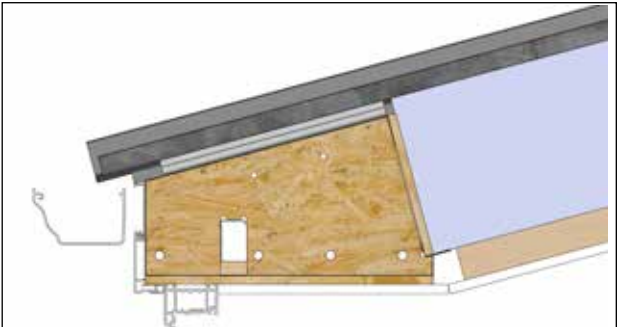
Dry wall bit. Not Supplied



PLASTERBOARD GUIDELINES (TO ACHIEVE 0.12 U-VALUE)



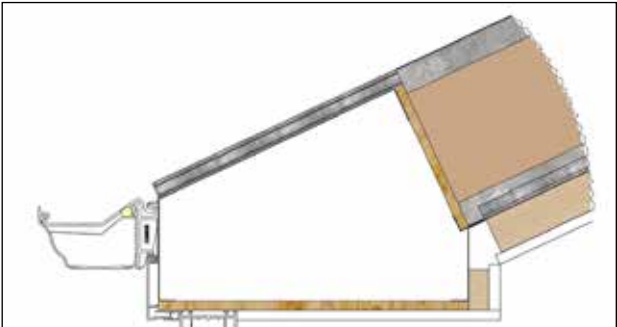
This image is the plaster line detail when at 12.5° using 25mm frame extensions.



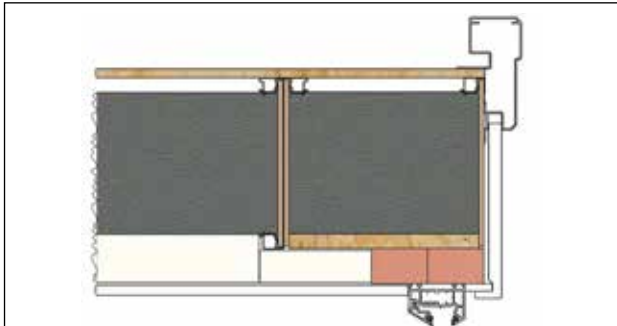
This image is the plaster line detail when at 15°



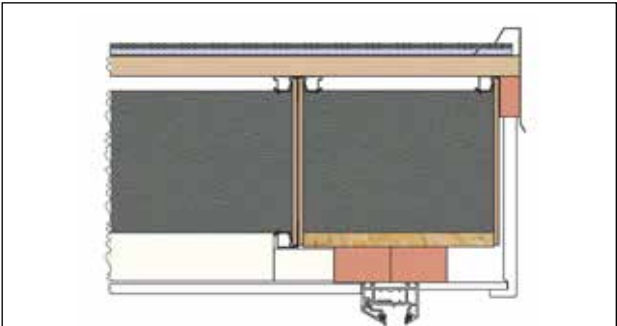
This image is showing the plaster line at 12.5° to 15° using 100 x 25mm timber packer (not supplied)



This image is the plaster line detail when at 25°

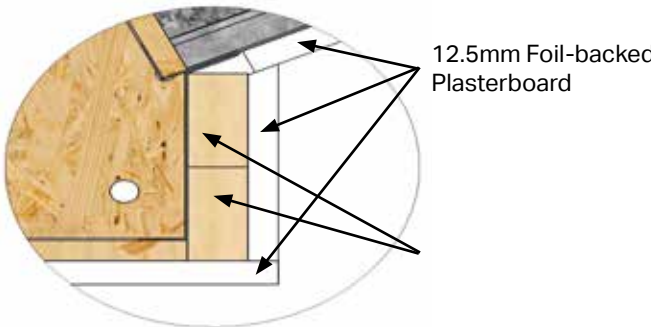


This image is showing the plaster line detail for an standard gable front. 44 x 70mm timber required above the gable frame.



This image is showing the plaster line detail for an extended gable front. 44 x 70mm timber required above the gable frame.

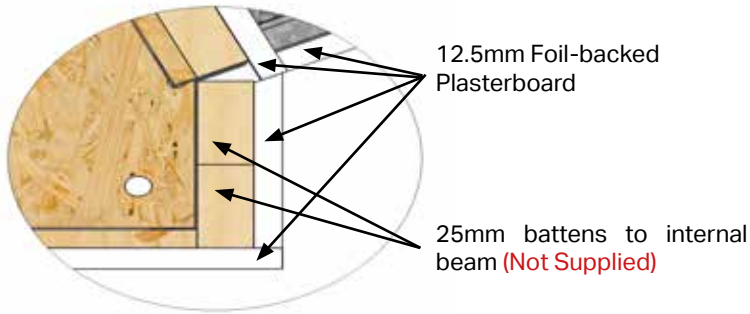
Solid Roof



NOTE: Please see page 74 for roofs with variable pitch.

PLASTERBOARD GUIDELINES

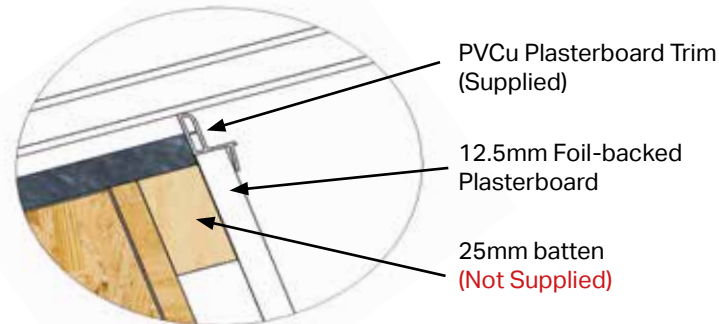
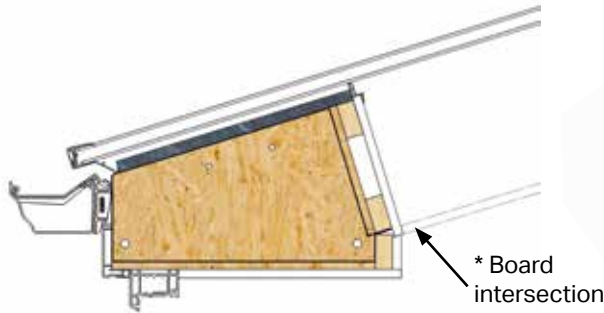
Glazed Roof



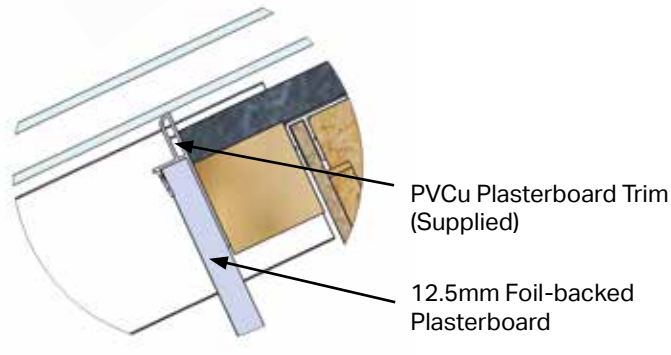
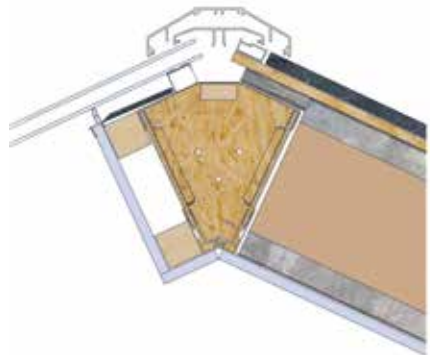
Internal Pelmet Height Calculator

Pitch	15	20	25	30	35	40
'A' Solid Roof	25	59	92	127	163	202
'A' Glazed Roof	29	63	98	134	172	212

Eaves Glazed Zone

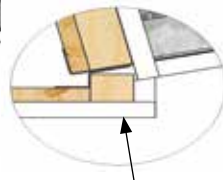


Ridge Glazed Zone



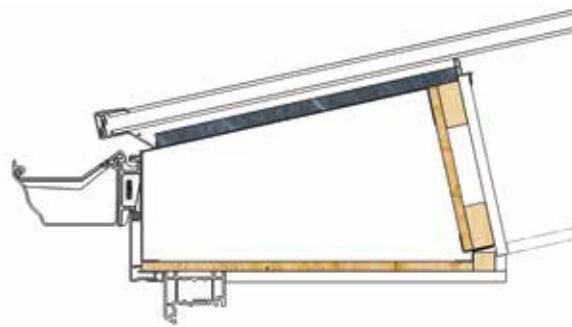
Lean-to at 12.5 Degrees

Solid Roof



Align boards to form a single seam at internal corner of beam

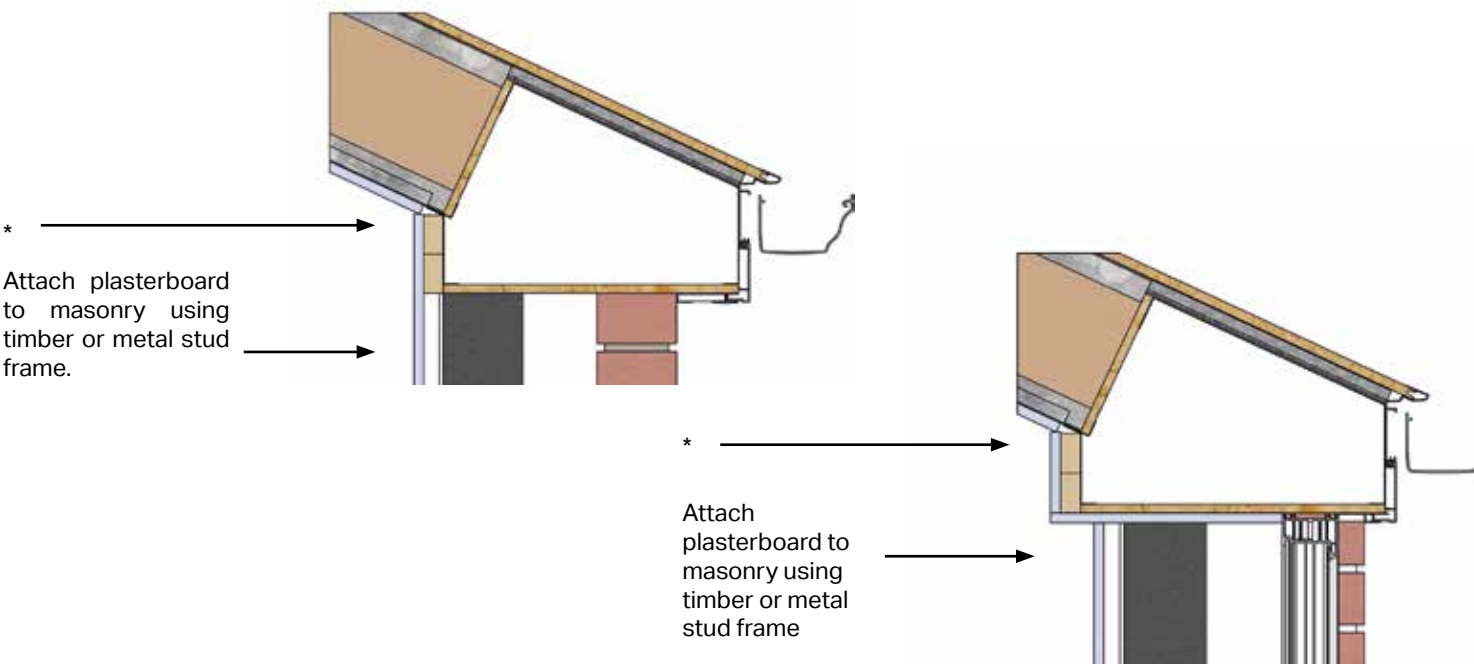
Glazed Roof



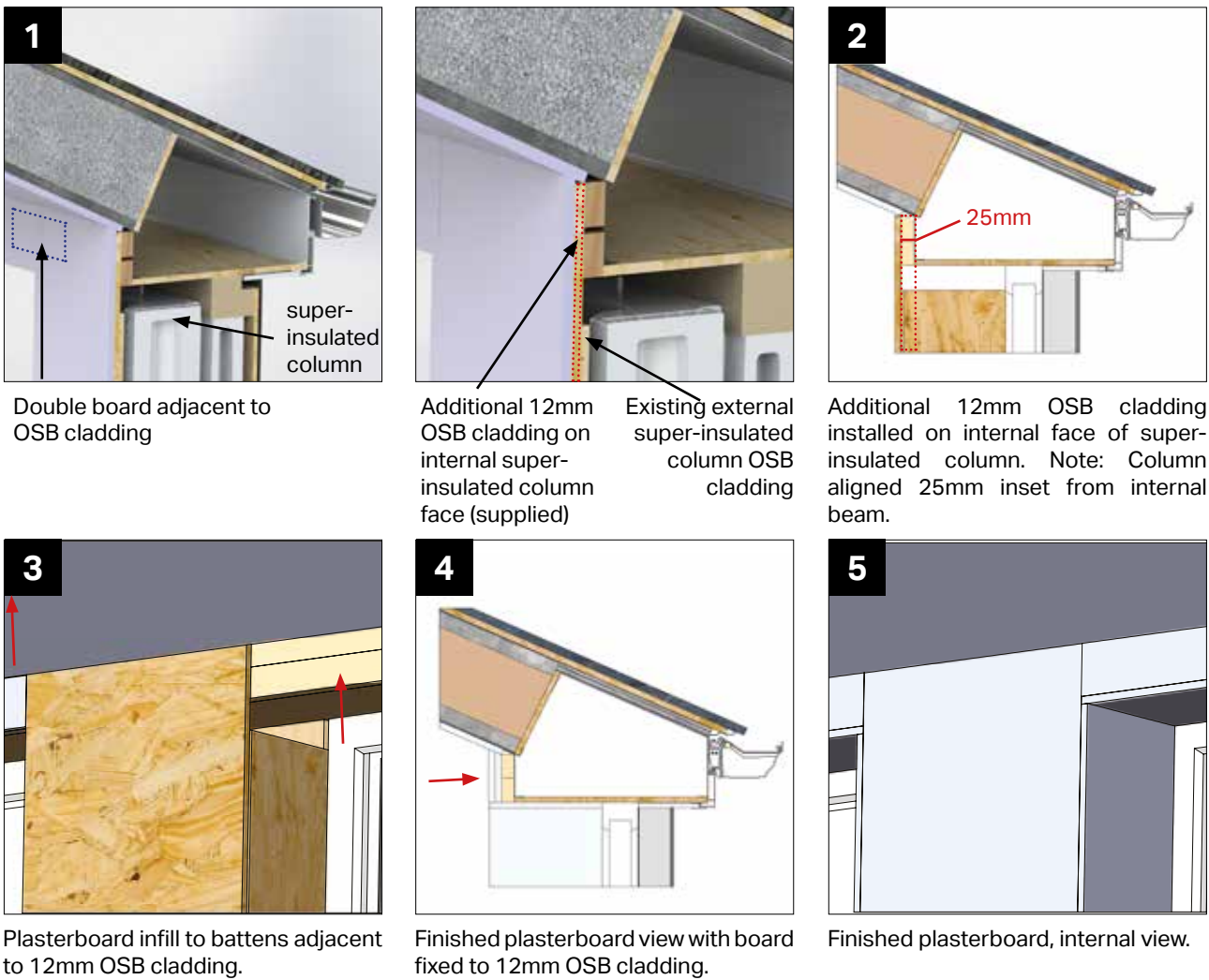


PLASTERBOARD GUIDELINES

Variations on Brickwork

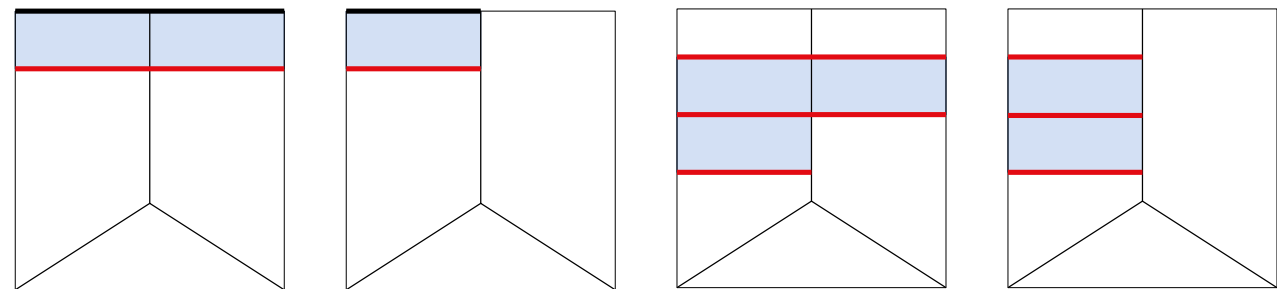


PLASTERBOARD GUIDELINES (SUPER-INSULATED COLUMNS)

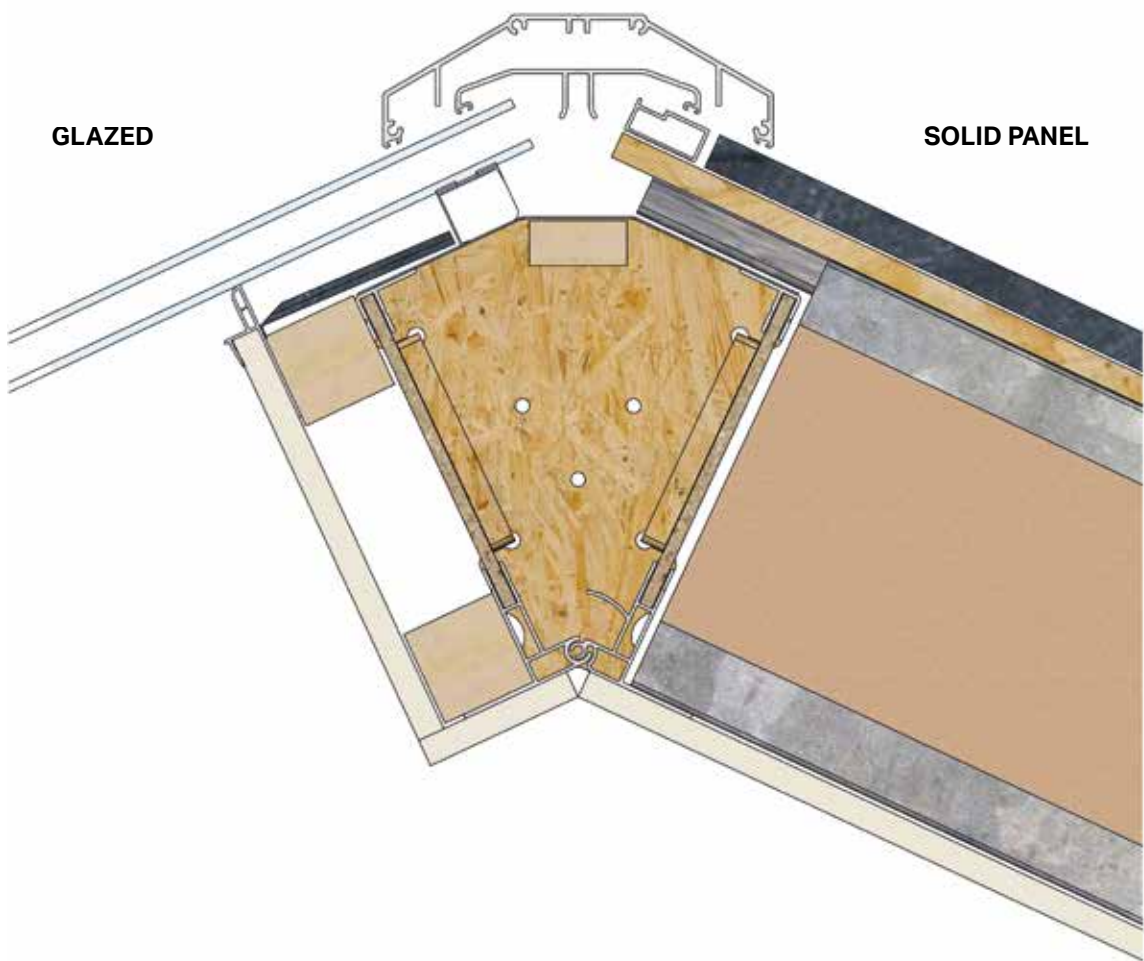
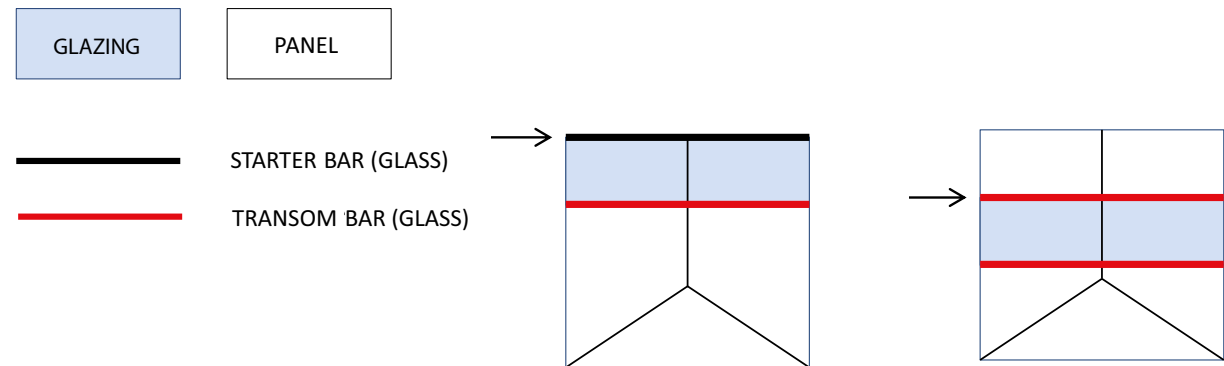


INSTALLATION - FITTING ROOF GLAZING

FOLLOW MAIN GUIDE UP TO PAGE 23, STEP 40 THEN FOLLOW THIS SECTION

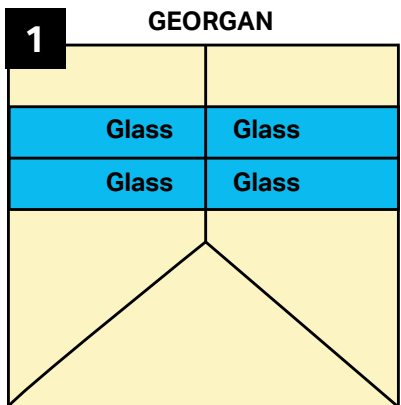


KEY





INSTALLATION - FITTING ROOF GLAZING



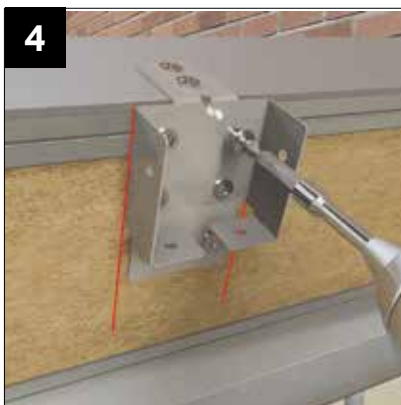
THE MAIN GLAZING GUIDE IS BASED ON THIS DESIGN



When installing 24mm double glazed units, the box beam OSB face will be marked with the V notch which indicate glazing bar centres. On the marked lines, locate to the top edge of the box beam the appropriate box beam shoes (NRBE 001 or NRBE 002) supplied. Fix to the beam using 8 x 4.2mm x 25mm wafer head self drill screws (NRTS 050) provided.



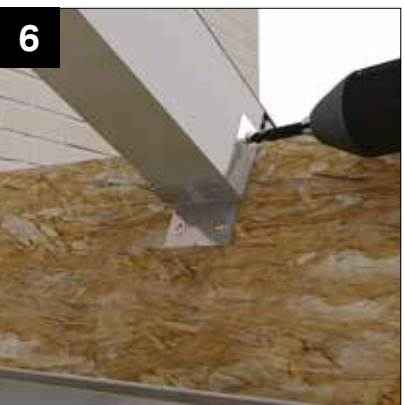
Place glazing bar into the box beam shoe positioned and fitted at step 2. Ensure the glazing bar is at 90 degrees to the box beam. The mark with a pencil each side of the bar at the ridge. Remove the bar.



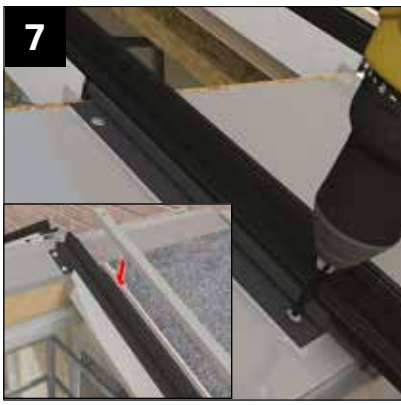
Between the marked lines fit the upper ridge side glazing bar shoe. Fix to the ridge using 8 x NRTS050 screws provided.



Lower the glazing bars into the shoes. Check diagonals of the glazing apertures are equal. Ensure when fitting the glazing bar that the silver insulation attached to one side of bar, abuts the adjacent roof panel.



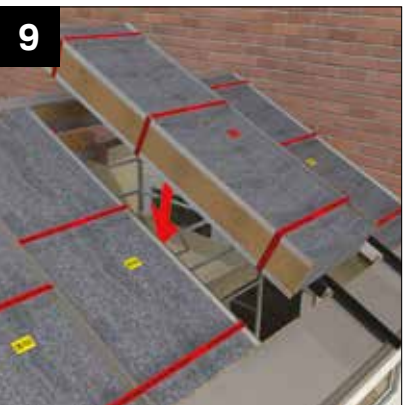
Fix all glazing bars into ridge and box beam shoes, using 8 (4 ridge shoes, 4 box beam shoes) with NRTS050 screws provided.



Finally secure glazingt bars to external face of ridge and box beam using 6 (4 Into box beam, 4 into ridge) NRTS050 screws provided.



Lower into position all yellow labelled panels working from hip bar towards glazed panel. Do not snip binding cords.



Then lower into position the red labelled expandable cords. Now snip all binding cords.

INSTALLATION - FITTING ROOF GLAZING



Reaching through the glazed panel opening fit the host wall external panel half clip, followed by the glazing bar half clip (see steps 43 to 46 pages 24 and 25) using WPCS020 4.8 x 38mm screws provided.



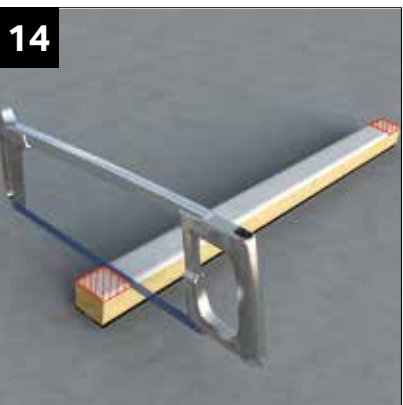
To secure the glazing bar offer the upper 'U' channel section. Screw up through into the bar within 200mm of the wall plate and box beam. Then at 500 centres. Using NRTS050 4.2 X 25mm screws provided. Then fix horizontally into OSB at similar centres.



Then fix the lower 'U' channel.



At the ridge fix the upper and lower plaster board timber battens (45 x 45mm) with screws (not provided) one fixing either end. The upper timber finishes flush with top of ridge. (See ridge cross section on page 40).



Cut to length the upper glazing support trim. Then, notch out the underside at each end to allow support to ride over glazing bar flanges.



Position glazing support trim, upper edge in-line with fold on ridge body (see rdge cross section on page 40). Secure using WPDS020 3.5 X 50mm screws provided.



Slide into position above the upper timber batten onto the top surface of the ridge the upper tile screen. This will be trapped by the upper plasterboard PVCu trim once glazed.



The trim shown in position, once glazed (see ridge cross section on page 40). Fasten the plasterboard PVCu trim with a fixing at either end of the upper 45 x 45mm timber batten (provided).



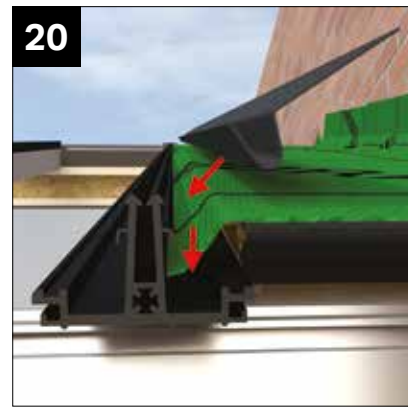
At the box beam end of the glazing panel, locate aluminium glazing support trim between glazing bars. See inset at step 19 for location point.



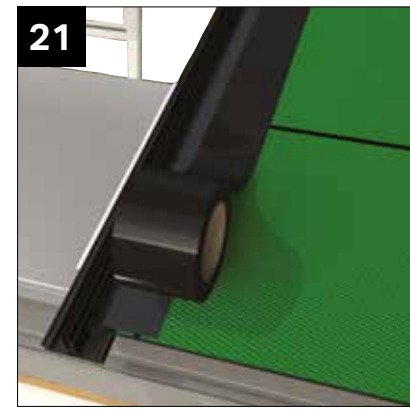
## INSTALLATION - FITTING ROOF GLAZING



Secure the glazing support section at 200mm ctrs using NRTS050 4.2 X 25mm screws provided.



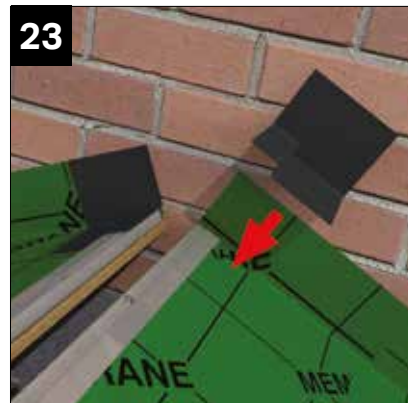
Where glazing is present, allow the membrane to overlap into the glazing bar as shown. The drainage channel can then be installed to clamp the membrane in place.



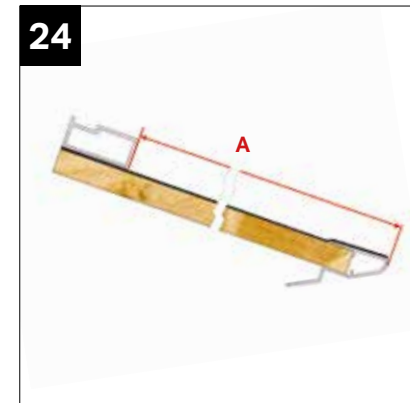
Tape the joint between the breather membrane and drainage channel as shown using weathering tape (supplied).



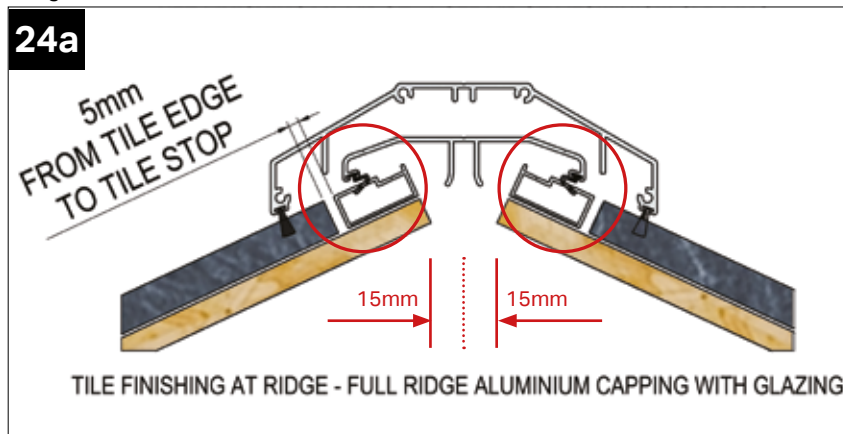
At each side of the glazing area, an aluminium upper tile stop is fitted. The lower edge of the tile stop is positioned a set distance from the edge of the bottom tile starter support. See critical dimension sheet for dimension A, see step 29. The tile stop is bedded down with clear low modulus silicone, then screwed at 300mm centres using (NRSF012) 4.8 x 38 pan head screws provided. Finally seal lower edge of the tile stop to underlayer again using clear low modulus silicone.



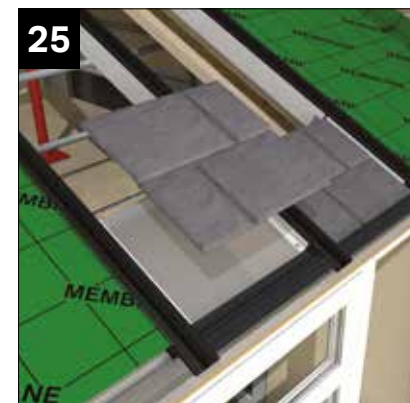
Fit the glazed ridge panel flashing trim to left and right side of ridge, (NRR1 011R right shown). These are bedded down using clear low modulus silicone.



Dimension A given on critical dimension sheet. This gives distance from face of tile stop to outer edge of tile starter support.



**NOTE: CHECK FOR 30MM SPACE BETWEEN OSB BOARDS. THIS WILL ENSURE INNER TOP CAP SEALS ARE POSITIONED CORRECTLY ON THE TILES STOPS.**



Position the box beam tile screens. Place in-line with adjacent tiling (not covering ventilation mesh) and secure with a single 4.2 x 25mm screw top centre (NRTS 050) provided.

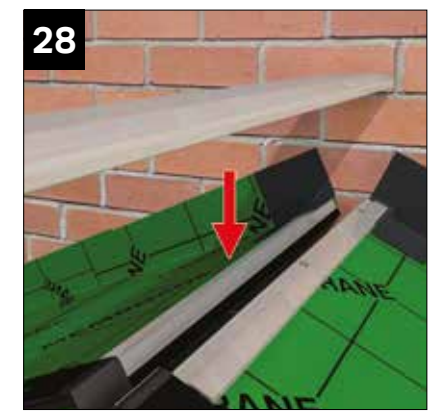
## INSTALLATION - FITTING ROOF GLAZING



Lay carefully into position the 24mm thick double glazed unit tight to the upstand provided detail if fitting roof vent.



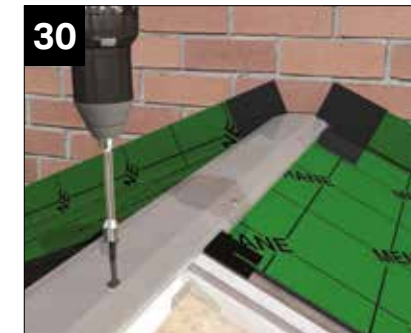
Prior to fitting the pre-notched glazing end profile, run a bead of silicone, low modulus (for none coated glass) or MS Polymer (self clean glass) immediately behind the co-extruded gasket before tapping down into position. Then seal each end to protect the seal.



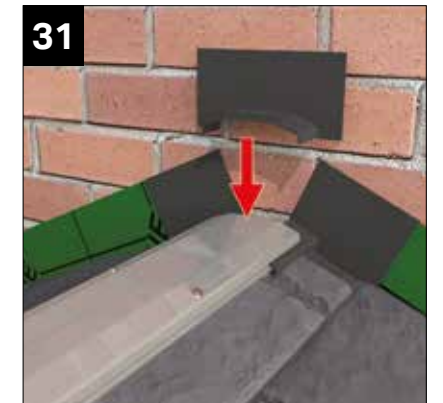
Lay aluminium ridge flashing cap. It is positioned 10mm away from the host wall. Then pre-drill the capping to suit steps 29 and 30.



Over solid panel area screw down either side of the capping at 500mm ctrs into the upper tile stop using (NRTS 050) screws provided.



Over glazed area, also at 500mm centres, screw down through the ridge capping centre line using the longer 5.5mm x 90mm (NRRSA 005BL) screws fitted with G16 stainless steel sealing washer. **Run a continuous bead of silicone, low modulus (for non coated glass) or MS polymer (self clean glass) along the head of the unit tight to the Q LON gasket.**



Seal and fit the rear host wall pre-formed flashing saddle (NRR1010). Using clear low modulus silicone.



Seal and fit the front radius end flashing kit using 250 x 250 square butyl sealing tape (supplied). Heat the sealing tape with a heat gun and position the tape over the ridge end (100mm from ridge end). Press firmly into place over the capping then make 2 slits (as indicated) before forming the final position.



When fitting the glazing top cappings **ensure you have the brush seal gasket covering the tiles and the QLon gasket on the glass**, prior to knocking the capping down.



Attach the transom end cap plate to the end of each glazing bar using

- Top screw - 1 x NRES004
- Bottom screw - 1 x RRX025

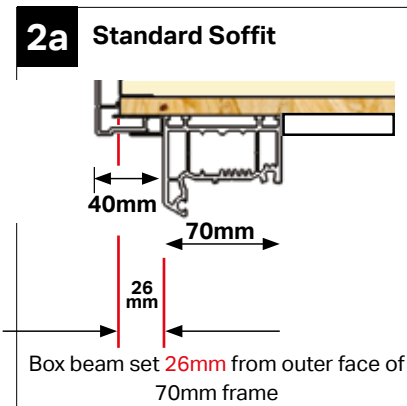
Screws are provided and each screw has 2-part coloured cap cover.



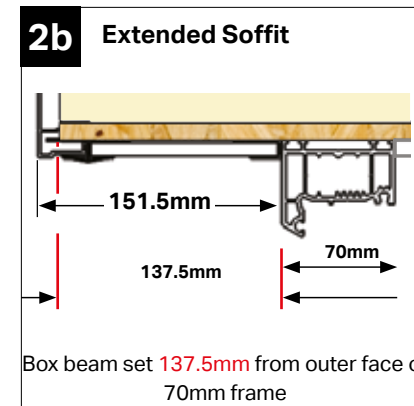
## INSTALLATION - LEAN TO - SOLID



ONLY IF GABLE FRAME STIFFENERS SPECIFIED: Fix the aluminium gable beam fixing plate to the underside of the box beam using 6 x RRR 025 screws. **NOTE: ALIGN PLATE 'V' NOTCH GROOVES WITH EDGE OF BEAM.**



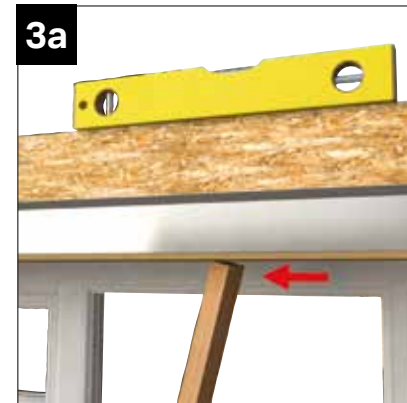
Lean-To set out projection as shown above (standard soffit) ensure to centralise box beam along the front frame to achieve equal soffit overhang.



Lean-To set out projection as shown above (extended soffit).



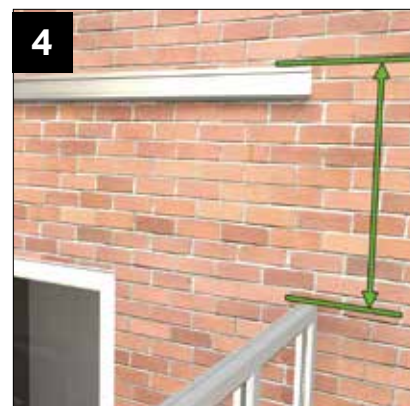
Apply low modulus silicone to the head of frames local to beam area before lifting the box beam into position. Temporarily fix the box beam in position.



Check the beam is level. Pack off top of frames if necessary. Insert a support prop under the beam. Adjust the height of the prop to ensure the beam is level side to side as well as in length.



Fix a prop into the steel section of the beam face as shown above. Props should be at max 2000mm centres within 250mm from each corner (prop fixings NOT SUPPLIED) 75x50 timbers props NOT SUPPLIED.



Fix the half-ridge (cut to internal frame) at the height given in the critical dimensions sheet, ensuring the ridge is level. Adjust the half ridge height if necessary. **NOTE: DIMENSION IS FROM UNDERSIDE OF BOX BEAM TO TOP EDGE OF HALF RIDGE (SEE CROSS SECTION ON PAGE 50).**



ONLY IF GABLE FRAME STIFFENERS SPECIFIED: Silicone the head of the frames. Place the aluminium gable frame stiffener with V-groove uppermost.

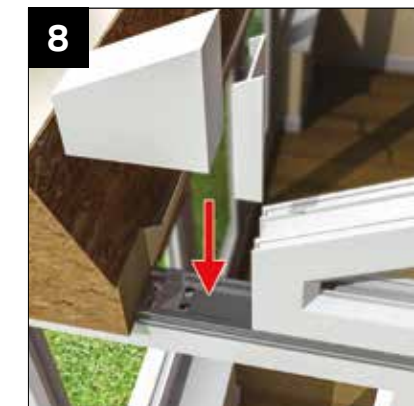


Fix the gable frame stiffener to the aluminium beam fixing plate using 4 x RRR025. Secure along the length of the stiffener at 500mm centres into frames (fixings not supplied).

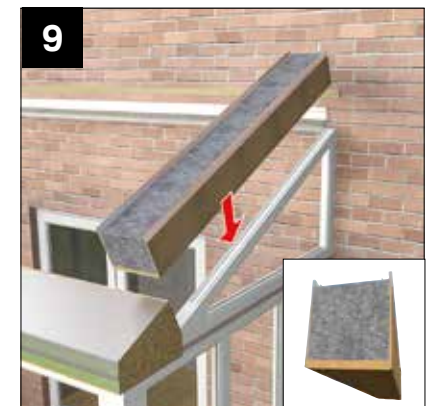
## INSTALLATION - LEAN TO - SOLID



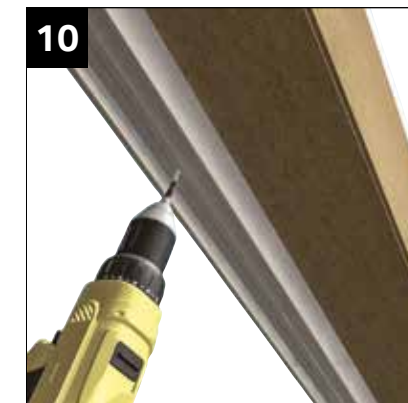
The 4 fixing positions.



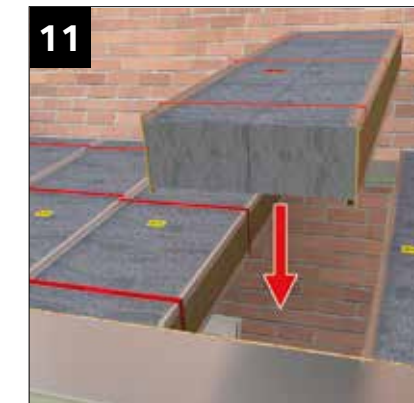
Apply silicone to the gable frame stiffener and fix the gable frame. Trial fit the infill wedge and coupler prior to final fixing.



Locate end panel (s) onto the rear wall plate shelf and box beam shelf. Ensure OSB boarding on end of gable panels are flush with the end of the beam. Note: if there is glazing against a return wall see page 25. Marked with a yellow label, all gable end panels are supplied with OSB (timber panels) to the inside face. **DO NOT SNIP RETAINING STRAPS.**



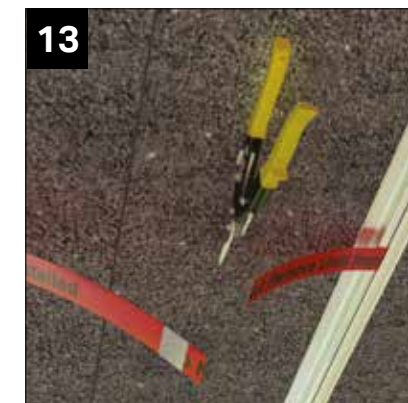
After checking the correct overhang secure the gable panels by screwing up through the head of the frames. Fixings need to be within 200mm of each corner (dependant on access) and at 450mm centres using for example, 4.8mm x 80mm screws; not supplied.



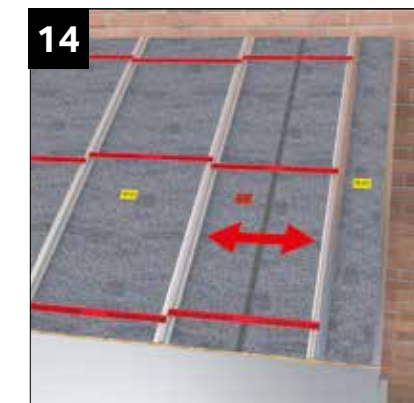
Working from LEFT to RIGHT, continue to install yellow labelled panels one at a time. Finally, lower into position the expandable roof panel (marked up with a red label). **DO NOT SNIP RETAINING STRAPS.**



The red labelled panels are always installed last. **DO NOT SNIP RETAINING STRAPS.**



With the expandable panel in position, snip all the retaining straps.



The expandable panel will expand sideways to take up any remaining gap.



When aligned (ensure external panel clip butts up to aluminium gutter channel, see red arrow) use a robust mallet to knock down the external panel locking clips (use a short length of timber to protect the clip from indentations).



INSTALLATION - LEAN TO - SOLID



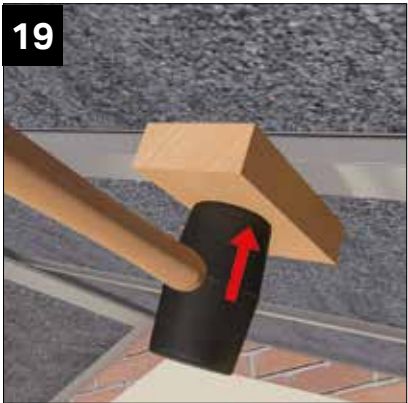
Finally secure the external clips using WPCS020 4.8mm x 38mm self drilling screws provided. **NOTE: do not stand on the panels to secure the external clips.** Tip: on greater projections secure the clip to the beam (as step 16). Then fit the first row of OSB boarding, this will allow easier access to secure the panel clips further up the roof.



When all external panel clips are installed, fix (at 1 metre centres) using the supplied gable tie-plates WPPC002 using 4 x NRTS050 screws provided.



Secure the gable end panel (s) only by screwing up through the box beam shelf and the upper half ridge shelf using 1 x NRTS050 screws provided.



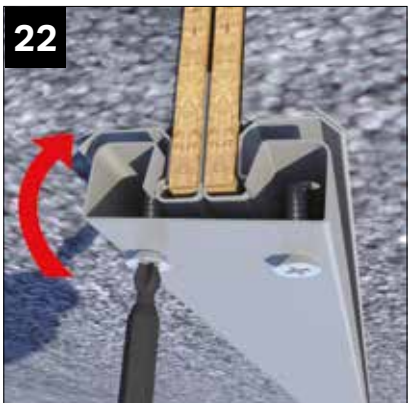
Now offer into position the pre-drilled internal panel clips. Again, use timber packer to prevent indentations to the internal clip. **NOTE:** short lengths, tap into position. Longer lengths, follow sequence steps 22-24.



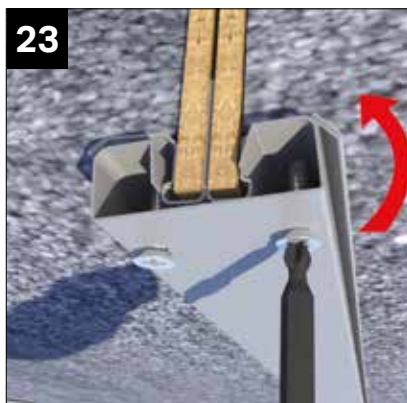
Firstly secure into the panel (at the ridge end) using dry wall fixing screws WPDS020 **NOTE: See method of alternate tightening as shown 22 to 24.**



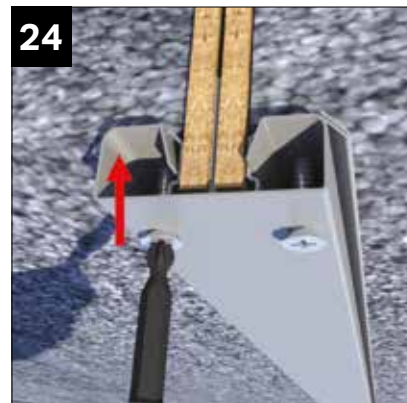
Secure into the panel (at box beam end) as previous image. **Again, note method of alternate tightening sequence 22 to 24.**



Loosely tighten alternative screws to enable easy clamping of internal clips.



One side then the other.



Fully clipped into position.

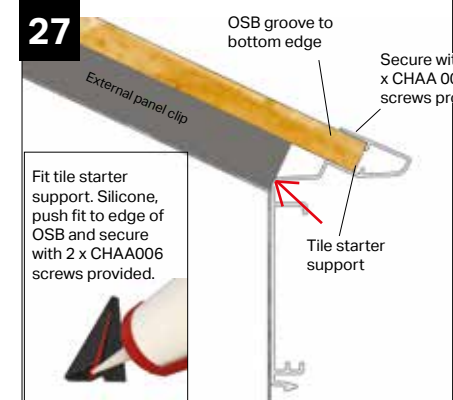
INSTALLATION - LEAN TO - SOLID



Secure to the half ridge body, the upper attachment plate using 2 x CHAA 006 fixings.



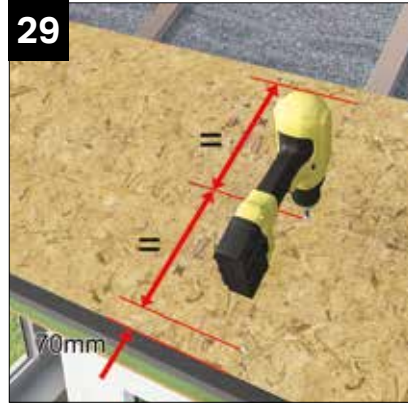
Finally secure to box beam support shelf the lower attachment plate using 2 x CHAA 006 fixings.



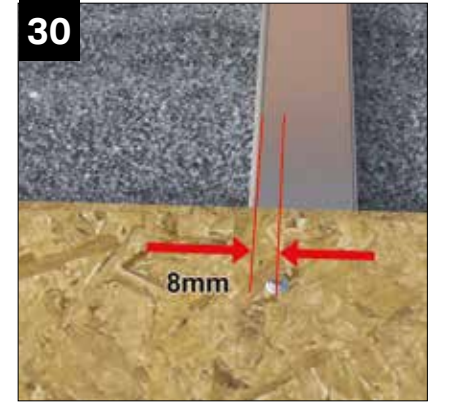
Having silicone sealed the tile starter support onto end of OSB, place tight up to the end of the external panel clip (see red arrow).



Following location plan, locate first row of OSB panels around the roof using tile starter support section to position. Ensure OSB sheets are the right way up, orientation.



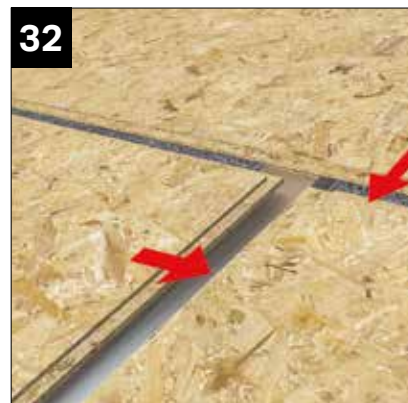
With OSB in position fix board 70mm up from tile starter support and 70mm down from upper edge followed by 1 x central fixing. **NOTE:** Fixing position at step 30.



All boards to be secured 8mm in from either edge. 3 fixings per clip position using NRPS050 4mm x 25mm screws, provided.



Where required support OSB board at butt joints using timber battens supplied. Battens are 65 x 19 x 700mm long (NRPB010). Only required over box beam. All OSB board edges are tongue and grooved to allow positive location. Continue to board from bottom to top (box beam to wall plate).



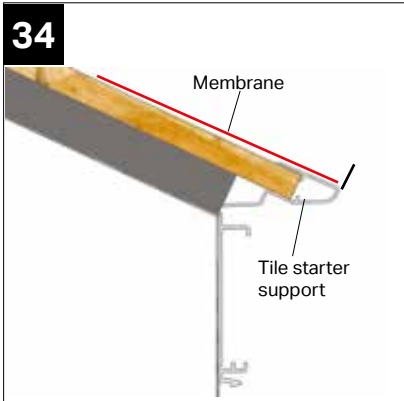
A timber support batten needs to be fixed to the host wall to support the OSB, see image on page 13. **NOTE: before fitting last row of OSB at the half ridge, ensure to fully insulate with supplied mineral wool between top of panels and host wall. See image page 13.**



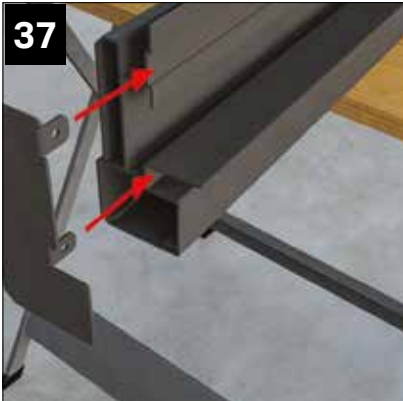
Cut the breathable membrane underlayer to the width of the roof deck plus 50mm over hanging the OSB barge-board at each end and 150mm up the host wall.



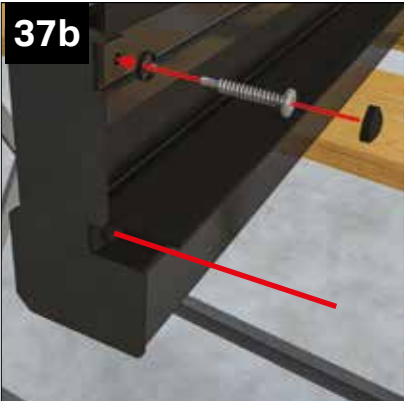
INSTALLATION - LEAN TO - SOLID



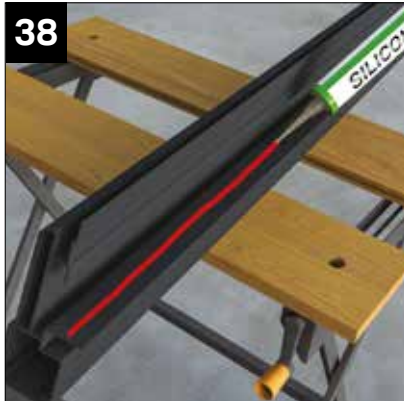
The breathable membrane is aligned to the front edge of the tile starter support.



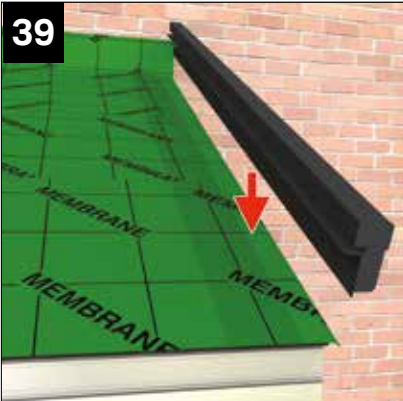
Insert the aluminium dry verge end cap into a square cut end. The end adjacent to the house will be angled to run parallel with the house wall.



Fix the end cap in place using 2 x NRES 004 4.8 x 32 pan head screws with cover caps.



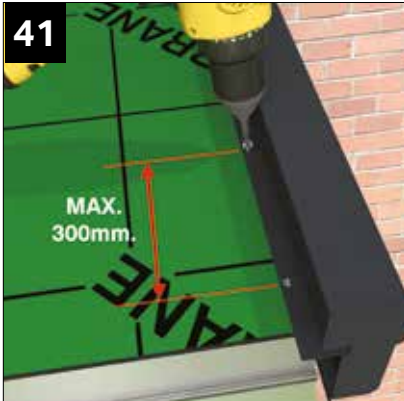
Apply a bead of clear low modulus silicone to the underside of the dry verge.



Position the dry verge on the top edge of the bargeboard, with the membrane folded down the face of the barge board.



Fix the dry verge to the OSB using NRTS 050 screws at 300mm centres. Ensure membrane overlaps into dry verge for drainage.



Fix the dry verge to the roof deck with NTR 050 screws, max 300mm centres.



See separate tiling guide for details on tiling method.



If obstructed on the RHS, remove 15mm from the clips to allow fitting.

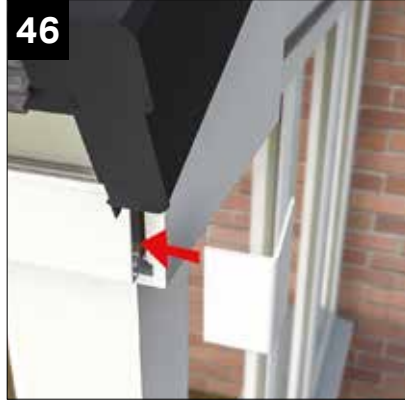
INSTALLATION - LEAN TO - SOLID



Fit soffit trims to underside of barge boards.



Fit pvc barge board box ends and barge board



Fit 90° external corner cover trims



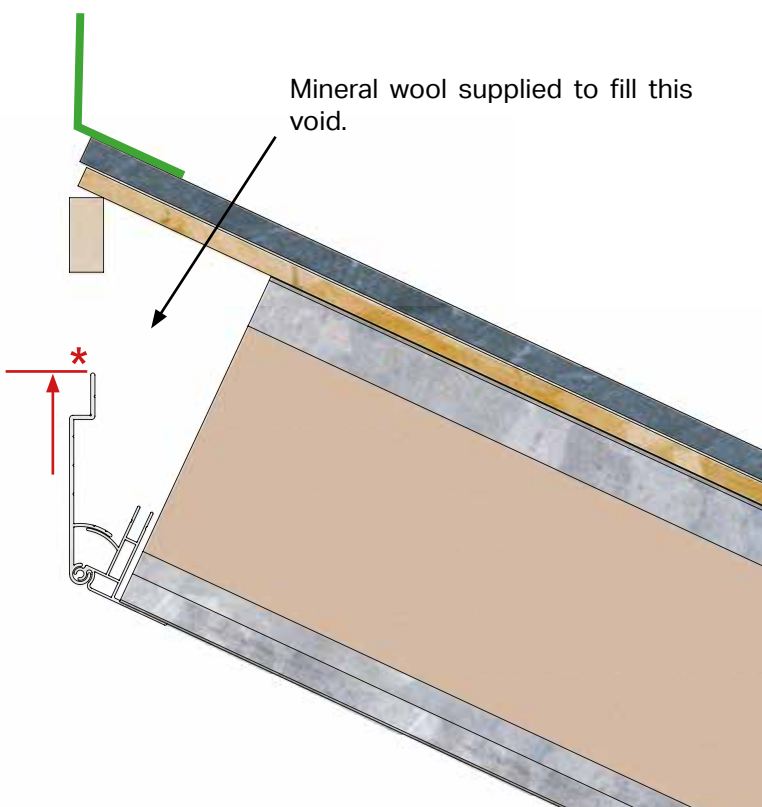
Fit internal and external gable stiffener claddings (if ordered). **NOTE:** Aluminium stiffer and cladding may need notching/ routing for frame drainage.



Lead flash to exiting host wall.

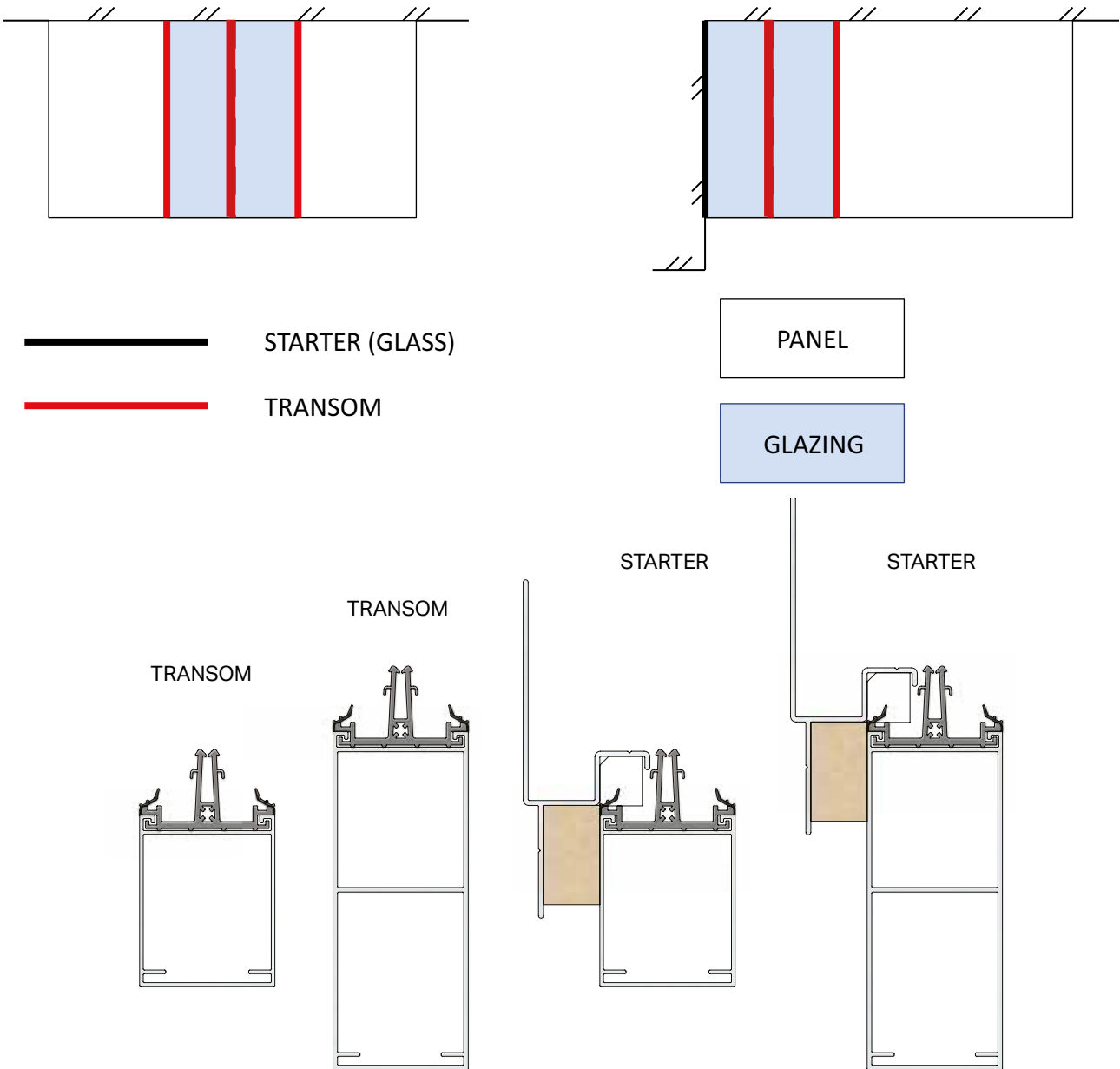
LEAN TO - SOLID ROOF - HALF RIDGE CROSS SECTION

\*Set out height given on critical dimension sheet

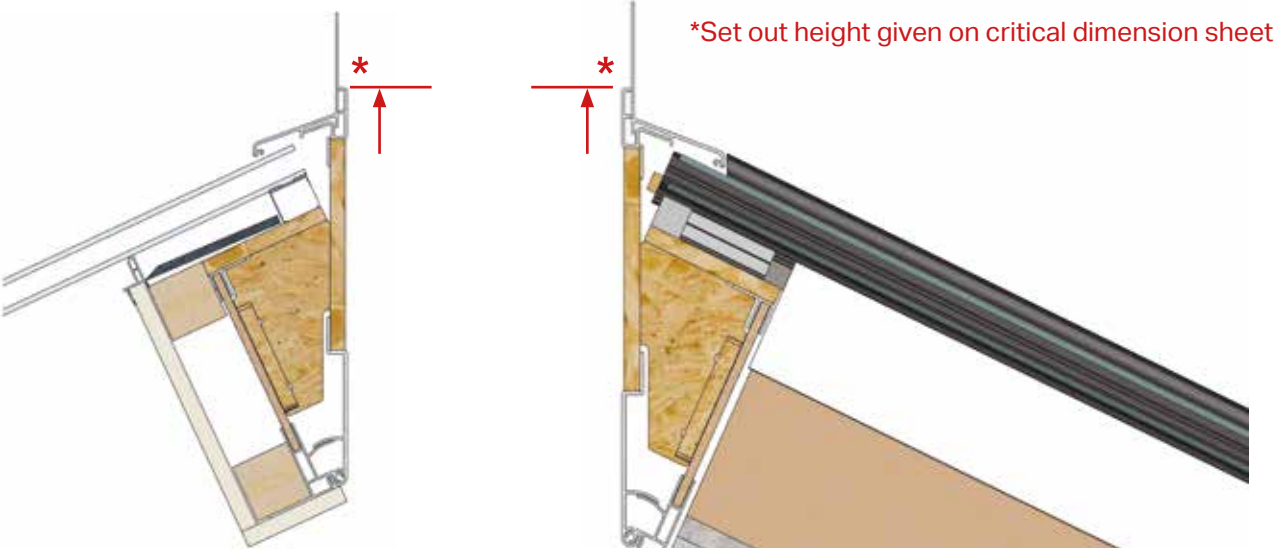




INSTALLATION - LEAN TO - GLAZED



LEAN TO - GLASS ROOF -  
HALF RIDGE CROSS SECTION



INSTALLATION - LEAN TO - GLAZED

**1**

**2**

\* Check this dimension from the **critical dimensions sheet** supplied. Fitters tip: cutting a length of timber to this length will enable you to set the panels correctly. NOTE: pack the half ridge off the host wall if not flat.

**3**

When installing 24mm double glazed units, the box beam OSB face will be marked with the vertical lines which indicate glazing bar centres. On the marked lines, locate to the top edge of the box beam the appropriate box beam shoes (NRBE 001 or NRBE 002) supplied. Fix to the beam using 8 x 4.2mm x 25mm wafer head self drill screws (NRTS 050) provided.

**4**

Place the glazing bar into the box beam shoe (fitted at step 3) ensure the glazing bar is at 90° to the box beam and half ridge.

**5**

With the glazing bar at 90° to the box beam. Mark the rear wallplate as shown.

**6**

Remove the glazing bar. Offer to the marked vertical line the wall plate glazing bar shoe. Position and secure using 6 x NRTS050 4.2 X 25mm screws provided.

**7**

Lower into position all glazing bars. Check diagonals of the glazing apertures are equal before proceeding with step 8.

**8**

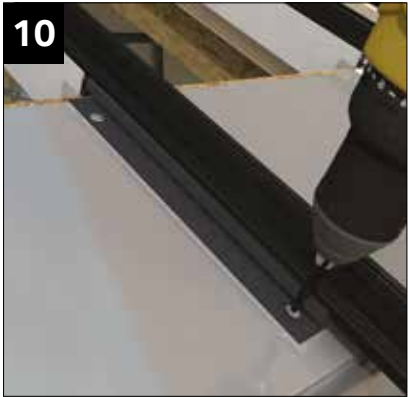
Secure at the wall plate using 4 x NRTS050 4.2 X 25mm screws provided.

**9**

Secure at the box beam using NRTS050 4.2 X 25mm screws provided.



INSTALLATION - LEAN TO - GLAZED



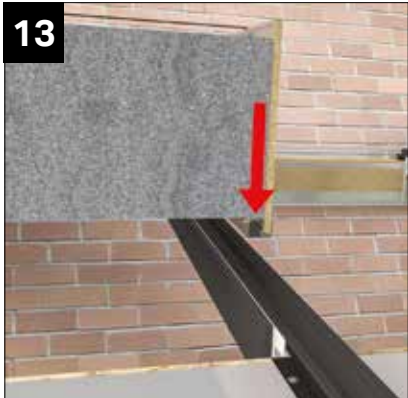
Secure glazing bar to wallplate and box beam, again using 2 at top and 4 into box beam using NRTS050 4.2 X 25mm screws provided.



Turn the upper wall plate glazing support trim upside down and cut small notch into each end to allow support trim to sit flat onto the OSB board and tight into the bars. Secure the upper wall plate glazing support trim using 2 x WPDS 020 3.5 x 50mm screws provided.



Having installed each gable end panel ensuring each side of the panel is flush with the end of the box beam, continue to install standard (yellow labelled) panels before fitting expandable (red labelled) panels.



Note: each panel that abuts a glazing bar will be fitted with a half-clip. Remember to fit the external full and half clips as you install each panel. This will negate the need to stand on the roof.



The external half clip being installed (see solid roof section for fitting of external and internal panel clips).



To secure the glazing bar offer the upper 'U' channel section. Screw up through into the bar within 200mm of the wall plate and box beam. Then at 500 centres. Using NRTS050 4.2 X 25mm screws provided. Then fix horizontally into OSB at similar centres.



Then fix the lower 'U' channel.



At the wall plate fix the upper and lower plaster board timber battens (45 x 45mm) with screws (not provided) one fixing either end. The upper timber finishes flush with OSB board.

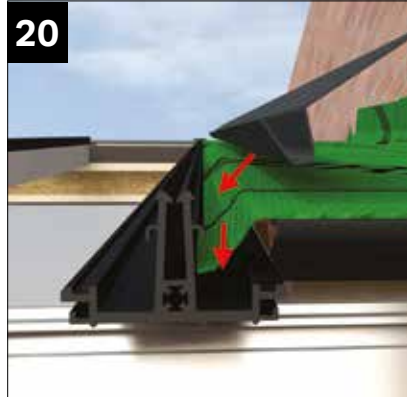


At the box beam end of the glazing panel, locate aluminium glazing support trim between glazing bars. See inset at step 19 for location point.

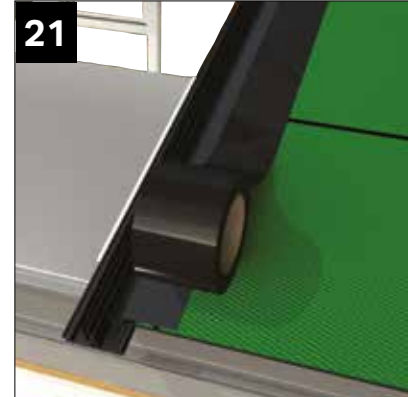
INSTALLATION - LEAN TO - GLAZED



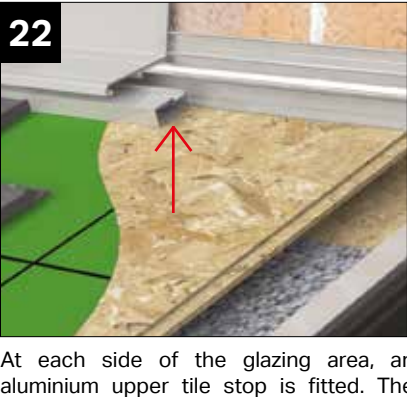
Secure the glazing support section at 200mm ctrs using NRTS050 4.2 X 25mm screws provided.



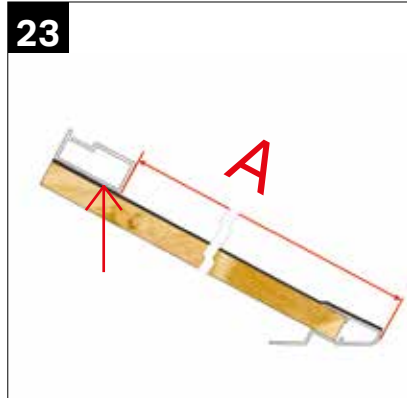
Where glazing is present, allow the membrane to overlap into the glazing bar as shown. The PVCu drainage channel can then be installed to clamp the membrane in place.



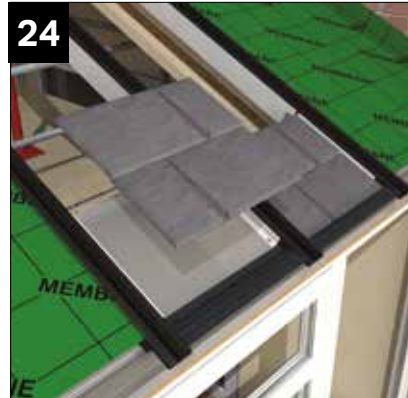
Tape the joint between the breather membrane and drainage channel as shown using weathering tape (supplied).



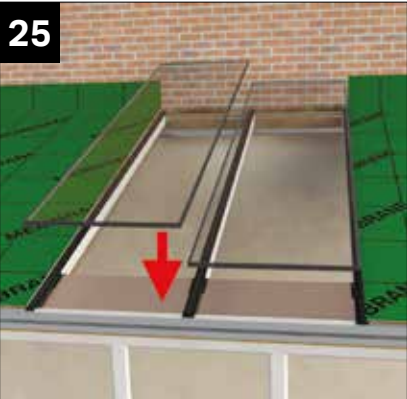
At each side of the glazing area, an aluminium upper tile stop is fitted. The lower edge of the tile stop is positioned a set distance from the edge of the bottom tile starter support. See critical dimension sheet for dimension A, see step 23. The tile stop is bedded down with clear low modulus silicone, then screwed at 300mm ctrs using (NRSF012) 4.8 x 38 pan head screws provided. Finally seal lower edge of the tile stop to underlayer again using clear low modulus silicone.



Dimension A given on critical dimension sheet. This gives distance from face of tile stop to outer edge of tile starter support.



Position the box beam tile screens. Place in-line with adjacent tiling (not covering ventilation mesh) and secure with single 4.2 x 25mm screw top centre (NRTS 050) provided.



Lay carefully into position the 24mm thick double glazing unit, leaving sufficient clearance at the bottom edge to allow fixing of glazing end profile (fitted at 27). NOTE: Image showing duo pitch roof.



Slide into position the half ridge tile screen. This will be trapped into position when plaster boarded. See separate tiling guide for details of tiling method.



Prior to fitting the pre-notched glazing end profile, run a bead of silicone, low modulus (for non coated glass) or MS polymer (self cleaning glass) immediately behind, the co-extruded gasket before tapping down into position. Then seal each end to protect the seal.



INSTALLATION - LEAN TO - GLAZED



Centralise and fit the half ridge aluminium top capping. Secure using 4.0 x 13 CHAA06 screws provided at 500mm ctrs. **Beware: longer screws may penetrate glass.**



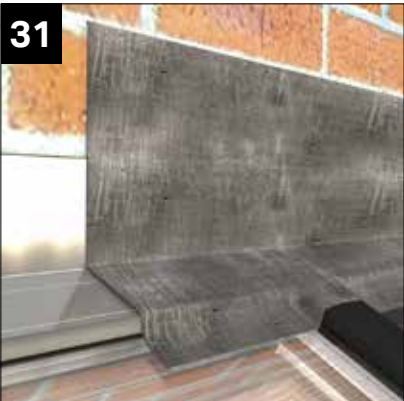
Finally knock on the aluminium glazing bar top capping. NOTE: Ensure to check the brush seal runs down tiles and Q-lon gasket runs down the glass. Angled end of capping to half ridge, square end at box beam end.



Attach the transom end cap plate to the end of each glazing bar using

- Top screw - 1 x NRES004
- Bottom screw - 1 x RRX025

Screws are provided and each screw has 2-part coloured cap cover.



1200mm lengths of CODE4 lead overlapping 150mm and protruding 50mm, beyond nose of top capping to be used. Coat with patination oil to avoid oxidation run off.

IMPORTANT - Please read if your roof features glazing at the host wall



Once ridge is set and level, drill through brackets into host wall, THEN REMOVE SETOUT COMPONENTS.



Reposition ridge and secure to the host wall using resin anchors suitable for substrate (NOT PROVIDED).



Finally secure the rear ridge fixing bracket using 8xNRTF050 (PROVIDED) one bracket on each side of the ridge.

INSTALLATION - LEAN TO - GLAZED TO ADJACENT WALL



Set the half ridge (wallplate) 5mm away from the host wall. The height (as step 6 page 47). Upper end of starter bar positioned so that glazing gasket aligns with glazing support trim. Secure to host wall within 200mm of half ridge and box beam plus at least one more equidistant between the two. Use resin anchors suitable to substrate - not provided.



Starter bar rides over the front box beam and drops into box beam shoe. Secure the shoe with 2 x (NRTS 050) screws.



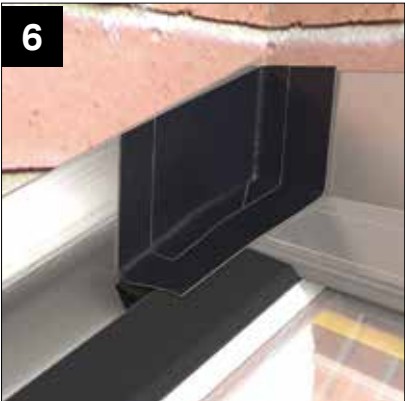
Seal top edge of starter bar bung (NRTA002). Place the bung tight into the junction of the host wall and starter bar. Then seal with clear low modulus silicone.



Silicone the edge of the bung against the starter bar.



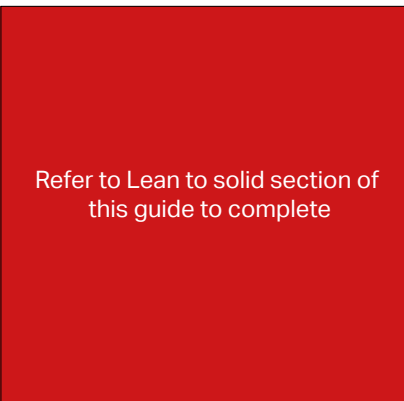
Secure the half ridge top capping into starter using (CHAA006) screws provided.



Using butyl tape supplied, ensure adequate seal between top capping and starter bar upstand.



Finally, manipulate code 4 lead over the glazing bar top capping and half ridge capping with overlaps as step 31 page 55.





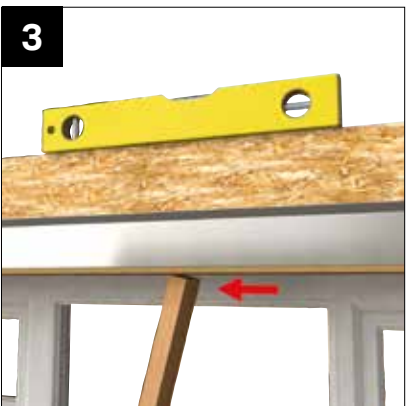
INSTALLATION - GABLE END - GLAZED



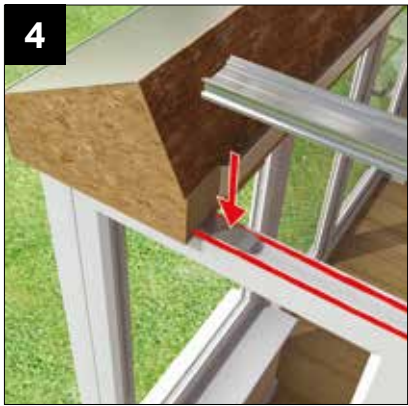
Fix the aluminium gable beam fixing plate to the underside of the box beam using 6 x RRR 025 screws. **NOTE: ALIGN PLATE 'V' NOTCH GROOVES WITH EDGE OF BEAM.**



Apply low modulus silicone to the head of frames local to beam area before lifting the box beam into position. Temporarily fix the box beam in position.



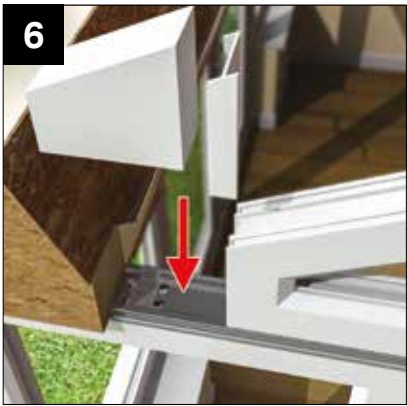
For box beam/support and levelling see page 19 steps 8 to 11.



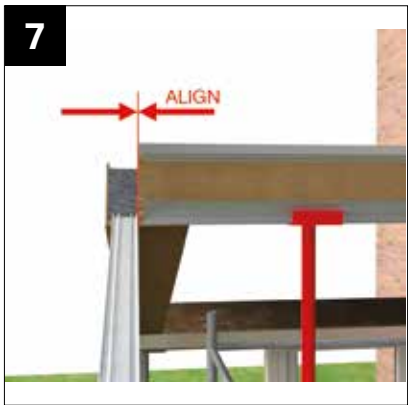
Silicone the head of the frames. Place the aluminium gable frame stiffener with V-groove uppermost.



Fix the gable frame stiffener to the aluminium beam fixing plate using 4 x RRR025. Secure along the length of the stiffener at 500mm centres into frames (fixings not supplied). Set out image 7 page 46.



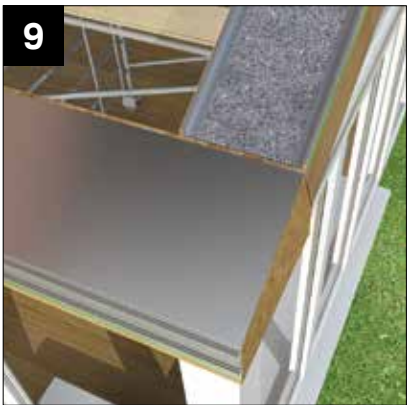
Apply silicone to the gable support extrusion and fix the gable frame. Trial fit the infill wedge and coupler prior to final fixing.  
Note: Please see step 47 on page 50 re-drainage of stiffener cladding.



After installing the ridge as detailed on pages 22 and 23, images 25 to 35, check that the end of the ridge is in line with the gable end internal frame line.



Referring to the panel layout sheet, fit the first panels at the gable end as shown in images 9 and 10 on page 46.

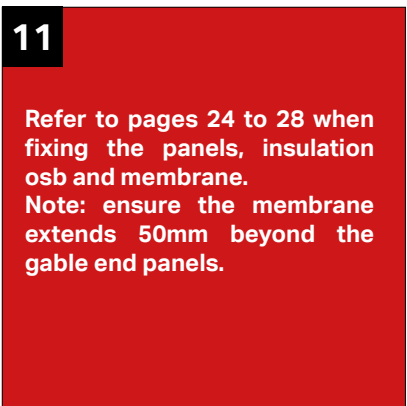


Check that the panel is in line with the end face of the beam and parallel to the gable frame.

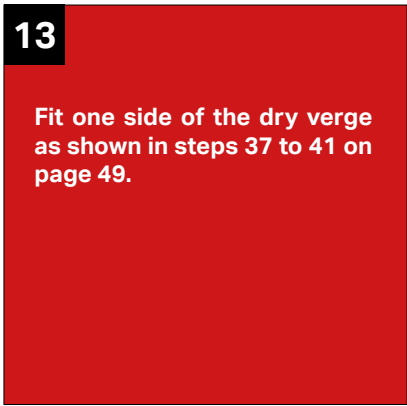
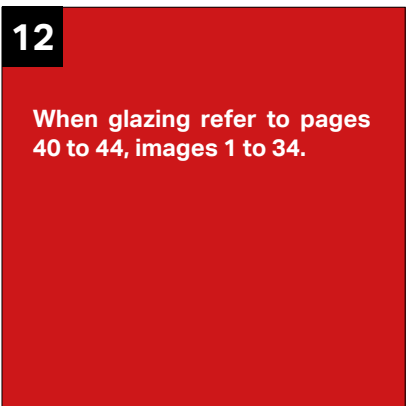
INSTALLATION - GABLE END - GLAZED



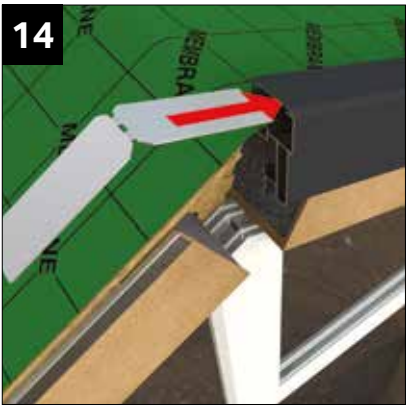
Continue fitting the panels from the host wall.



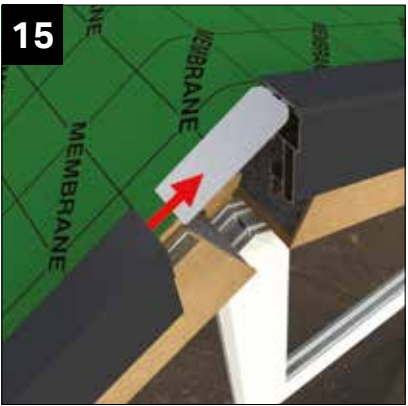
**DO NOT SNIP RETAINING STRAPS.**



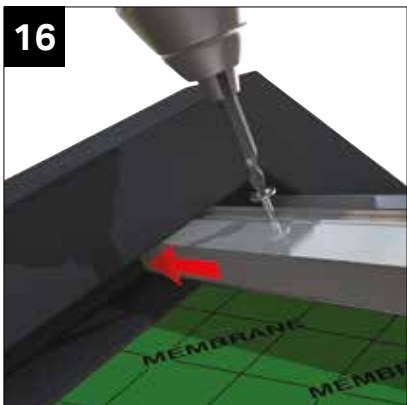
Fit one side of the dry verge as shown in steps 37 to 41 on page 49.



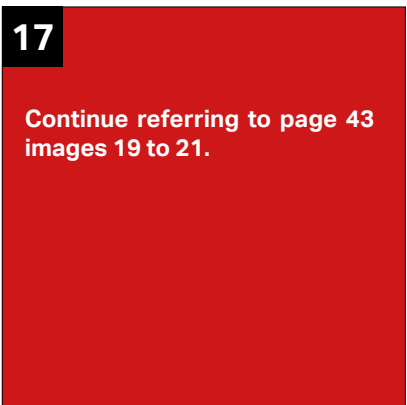
Fit gable cladding alignment strip into the aluminium dry verge.



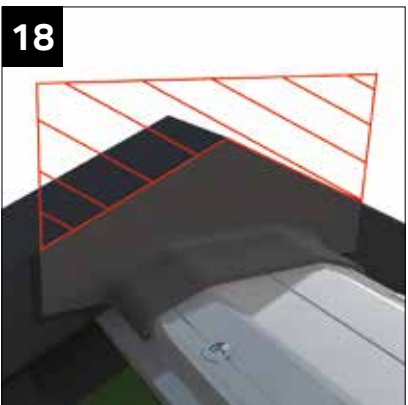
Fit opposite aluminium dry verge and point joints on upper and inner edges.



Slide tile stop under dry verge and fixed in place. See page 43 images 22 to 24 for details.



Continue referring to page 43 images 19 to 21.



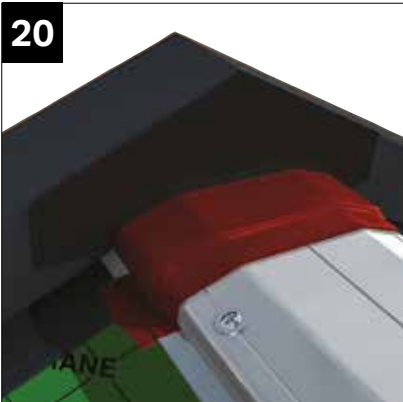
Fit the gable flashing. Mark and trim to fit the dry verge.



INSTALLATION - GABLE END - GLAZED



Apply clear low modulus silicone to the faces shown and refit.



Fit first 200mm Butyl tape strip sealing the gable flashing to the ridge flashing cap.



Fit second 200mm Butyl tape sealing the dry verge to the gable flashing. Cut the tape to allow it to be folded as shown in the following two images



Fold down and press firmly into position.



Finally cover joint with a third layer.



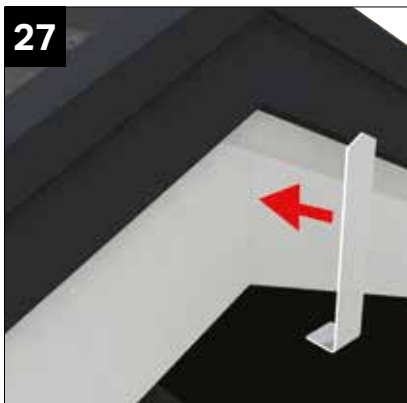
Fit the ridge top capping using the NRRSA 005BL supplied.



Apply clear low modulus silicone to the joint between the ridge top cap and the dry verge.

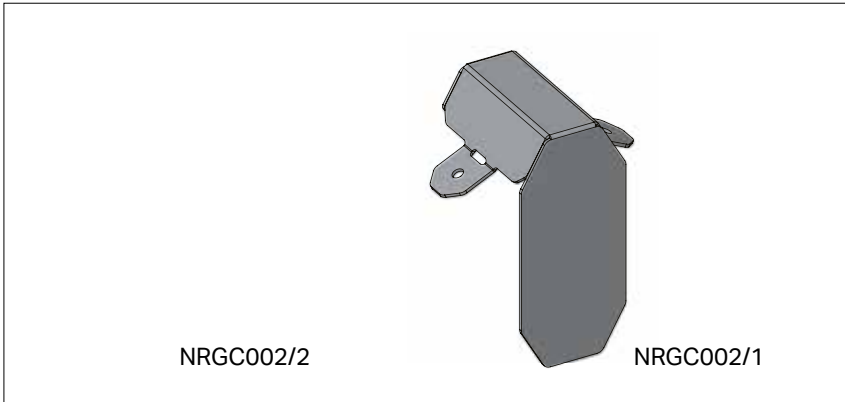


Fit the pre-cut fascia and eaves trims. See page 50, images 44 to 47 for more detail.

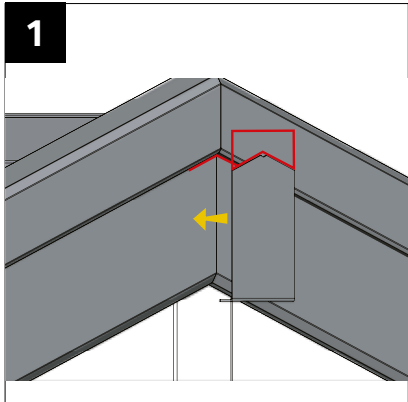


Fit the fascia ridge trim, modifying where necessary ensuring a neat finish.

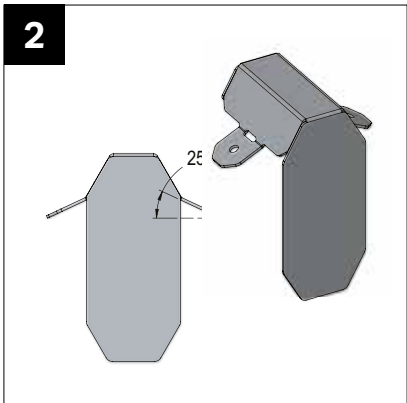
INSTALLATION - GABLE APEX COVER



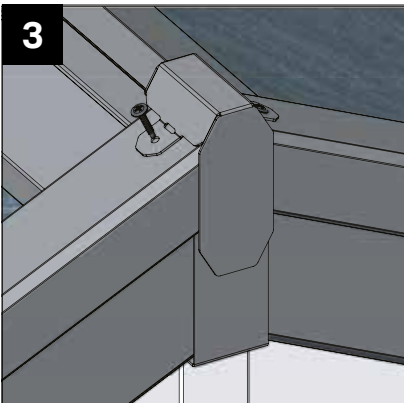
The gable apex cover is a product for an improved finish at the exterior apex of a duo-pitched gable roof. This new 2-part product is used to cloak the joint between two adjoining dry verge claddings.



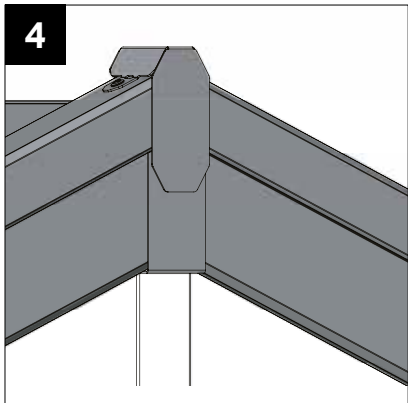
Scribe the lower part to fit beneath the step in the aluminium dry verge cladding as shown. Fix using a suitable silicone adhesive.



Bend the wings of the upper part to match the desired roof pitch – by default they are set to 25 degrees.



Position as shown and fix using 2 x NRTS 4.2 x 25 self drilling wafer head screws (supplied).

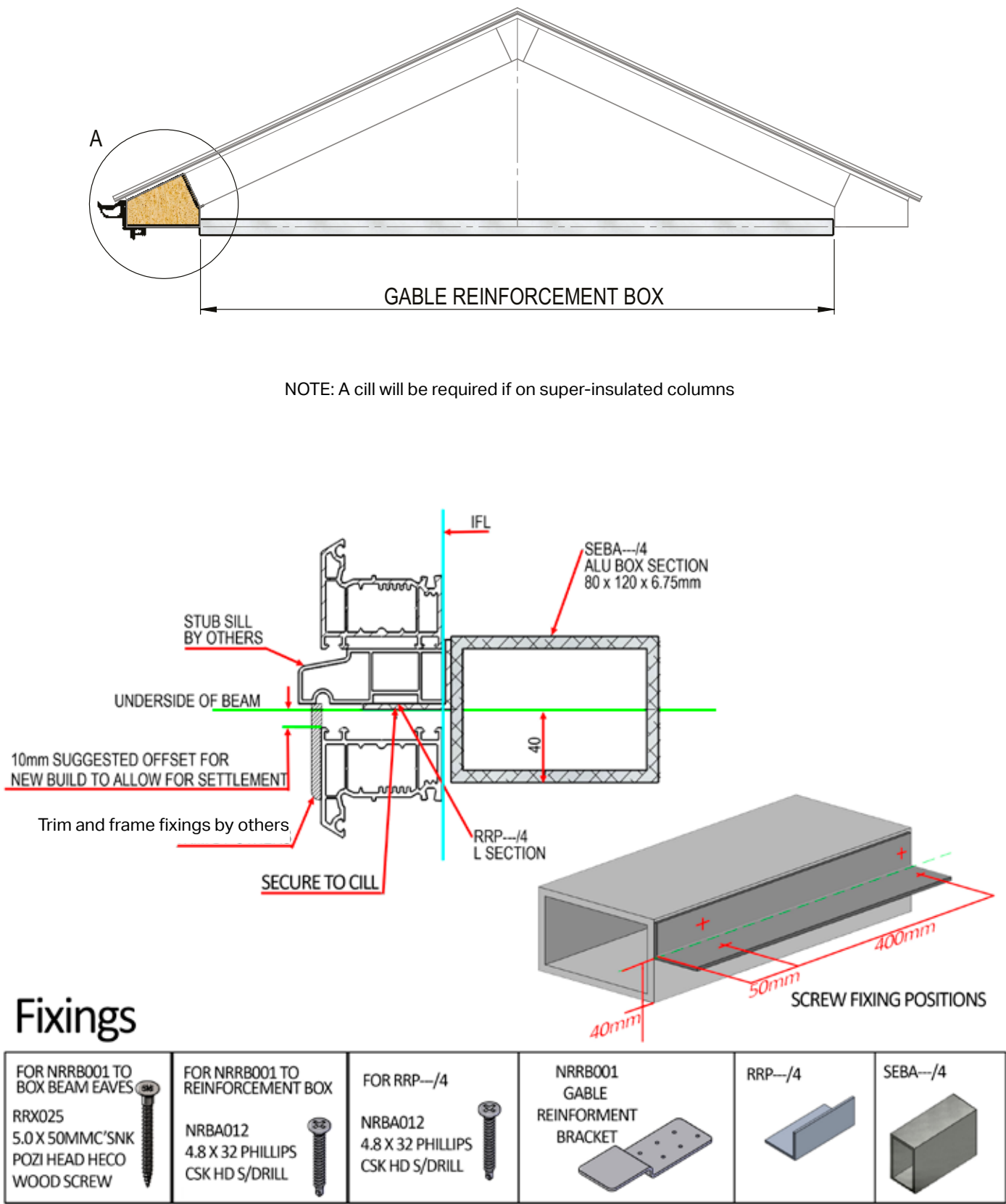


Finished installation shown above.

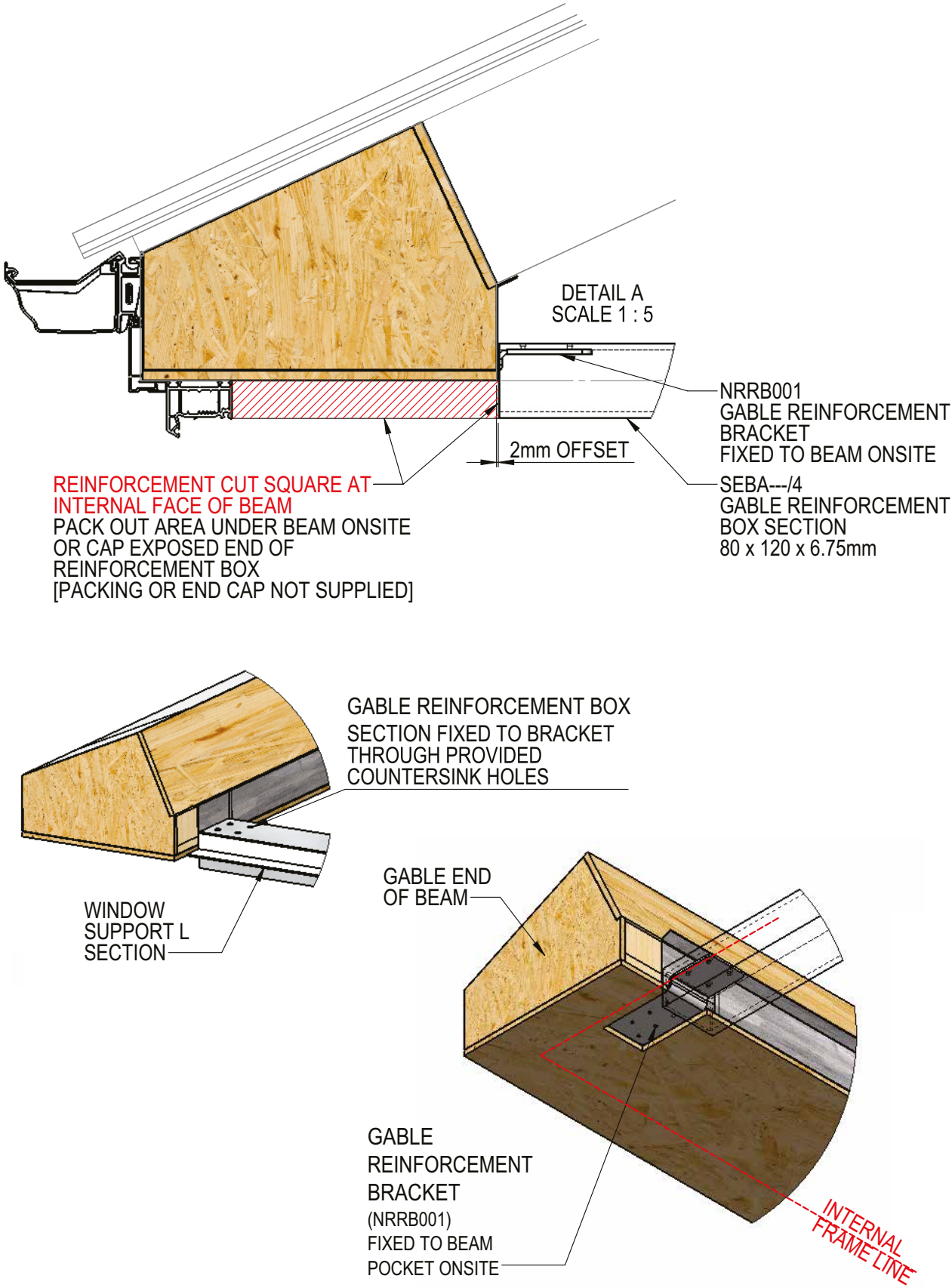


INSTALLATION - GABLE REINFORCEMENT BOX DETAIL

Detail may vary if fitting on brickwork.  
Refer to brickwork section.

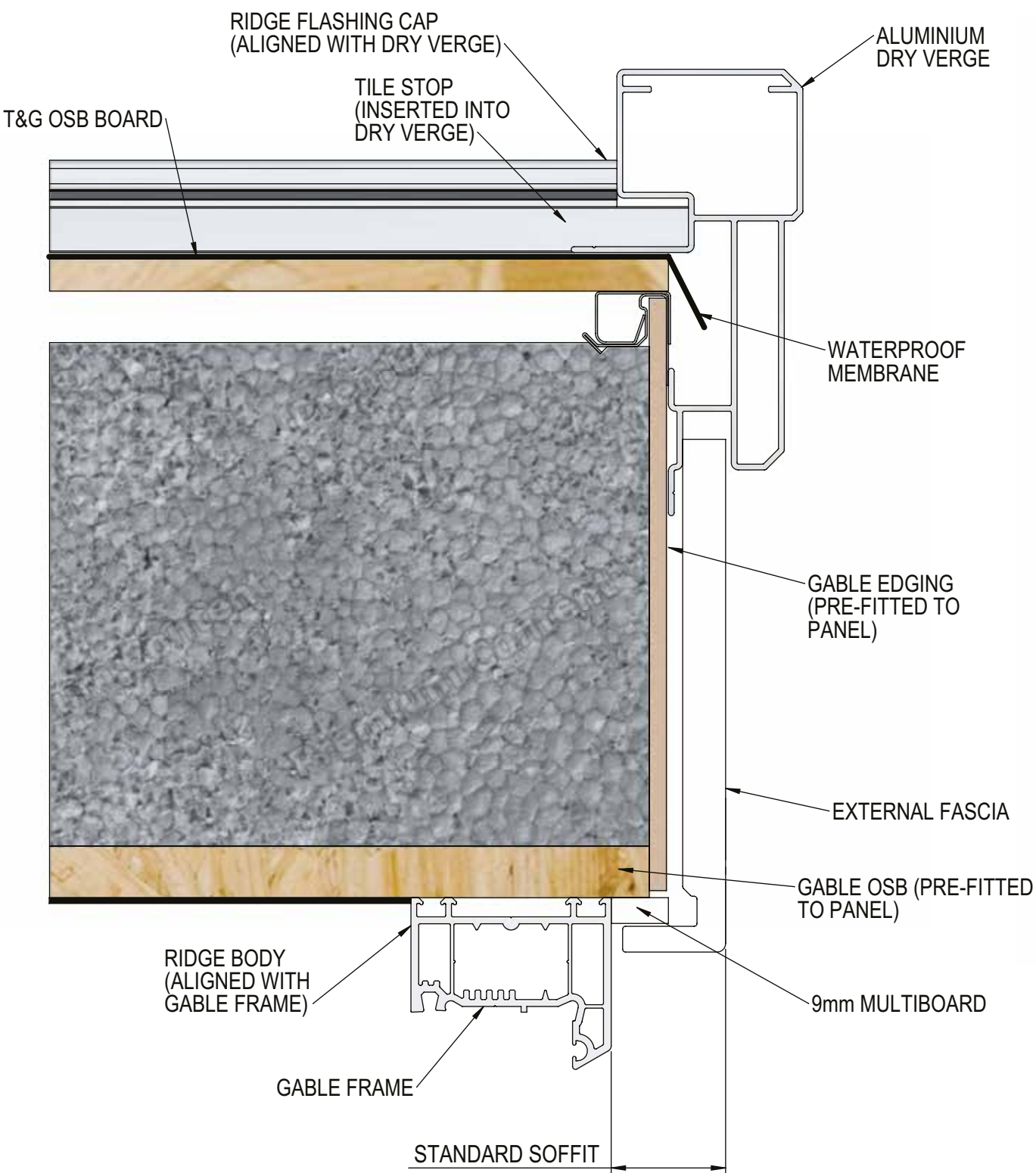


INSTALLATION - GABLE REINFORCEMENT BOX DETAIL

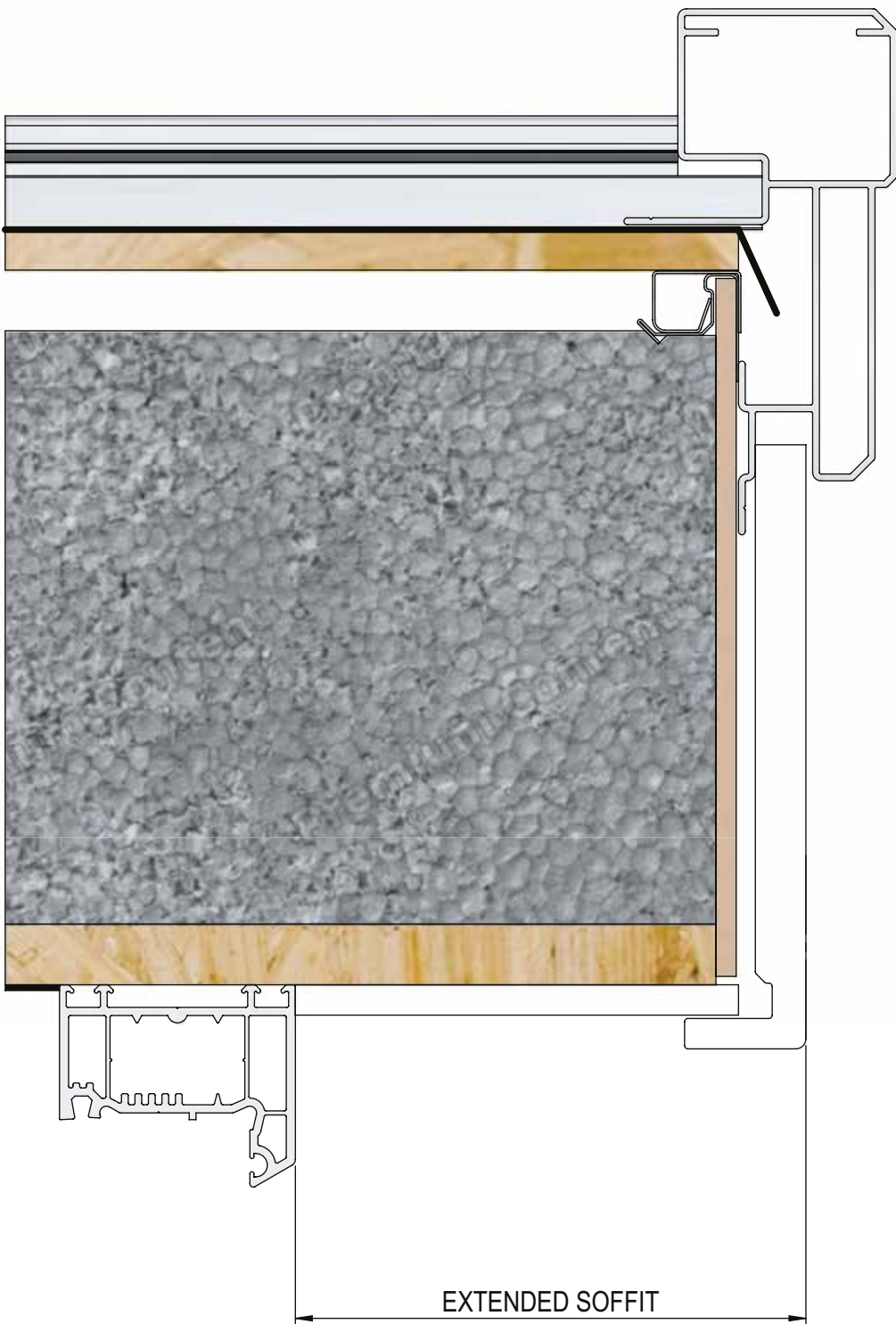




GABLE SYSTEM OVERVIEW  
- SECTION THROUGH STANDARD SOFFIT

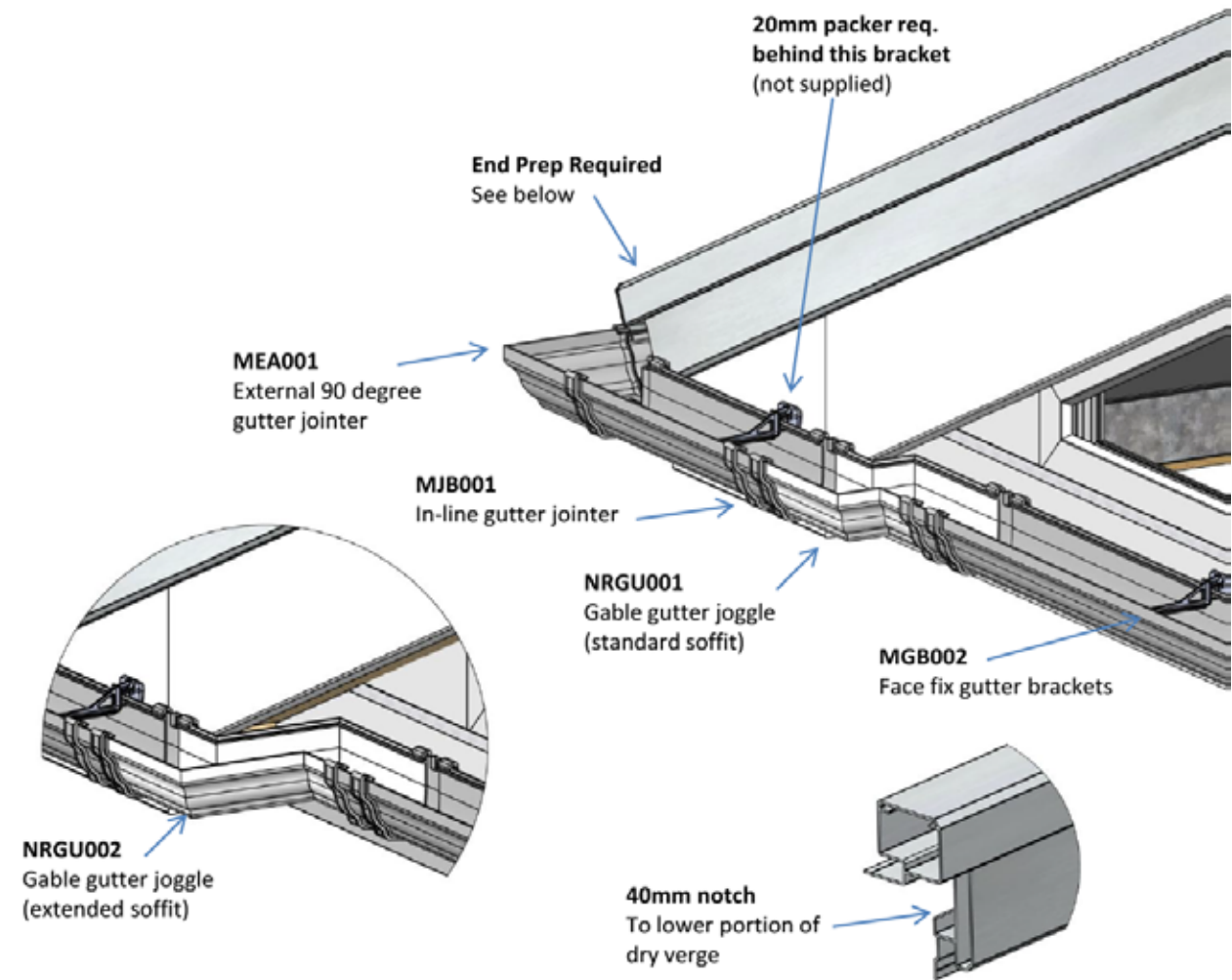


GABLE SYSTEM OVERVIEW  
- SECTION THROUGH EXTENDED SOFFIT

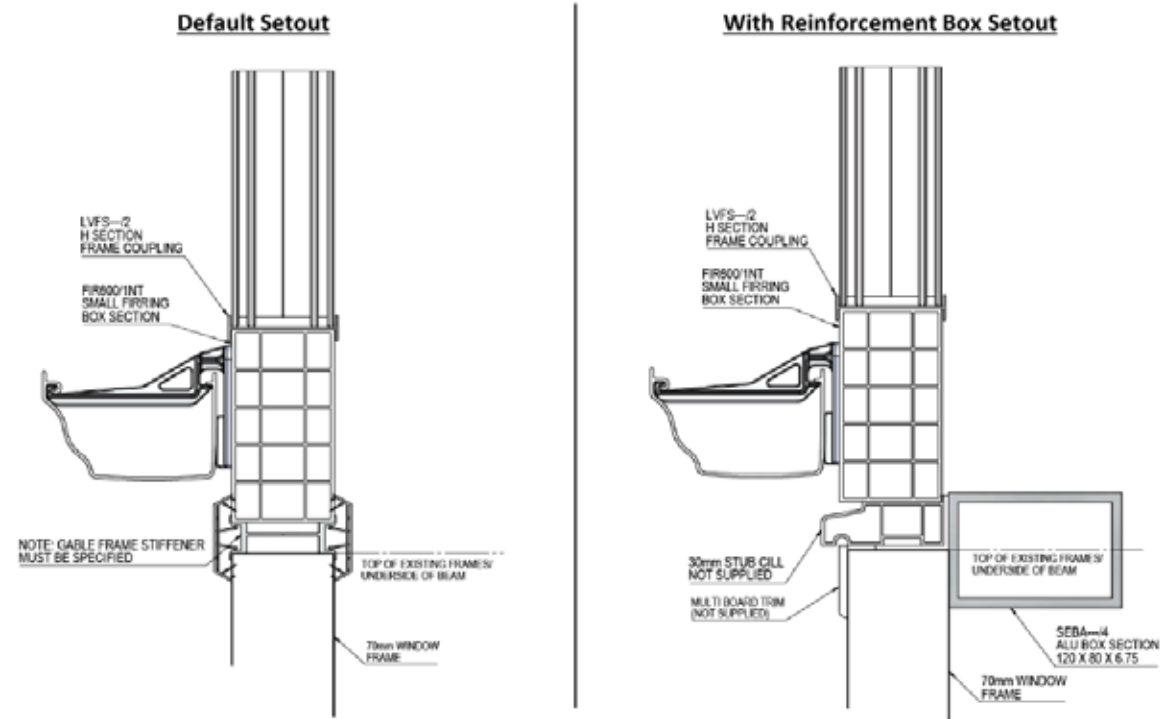




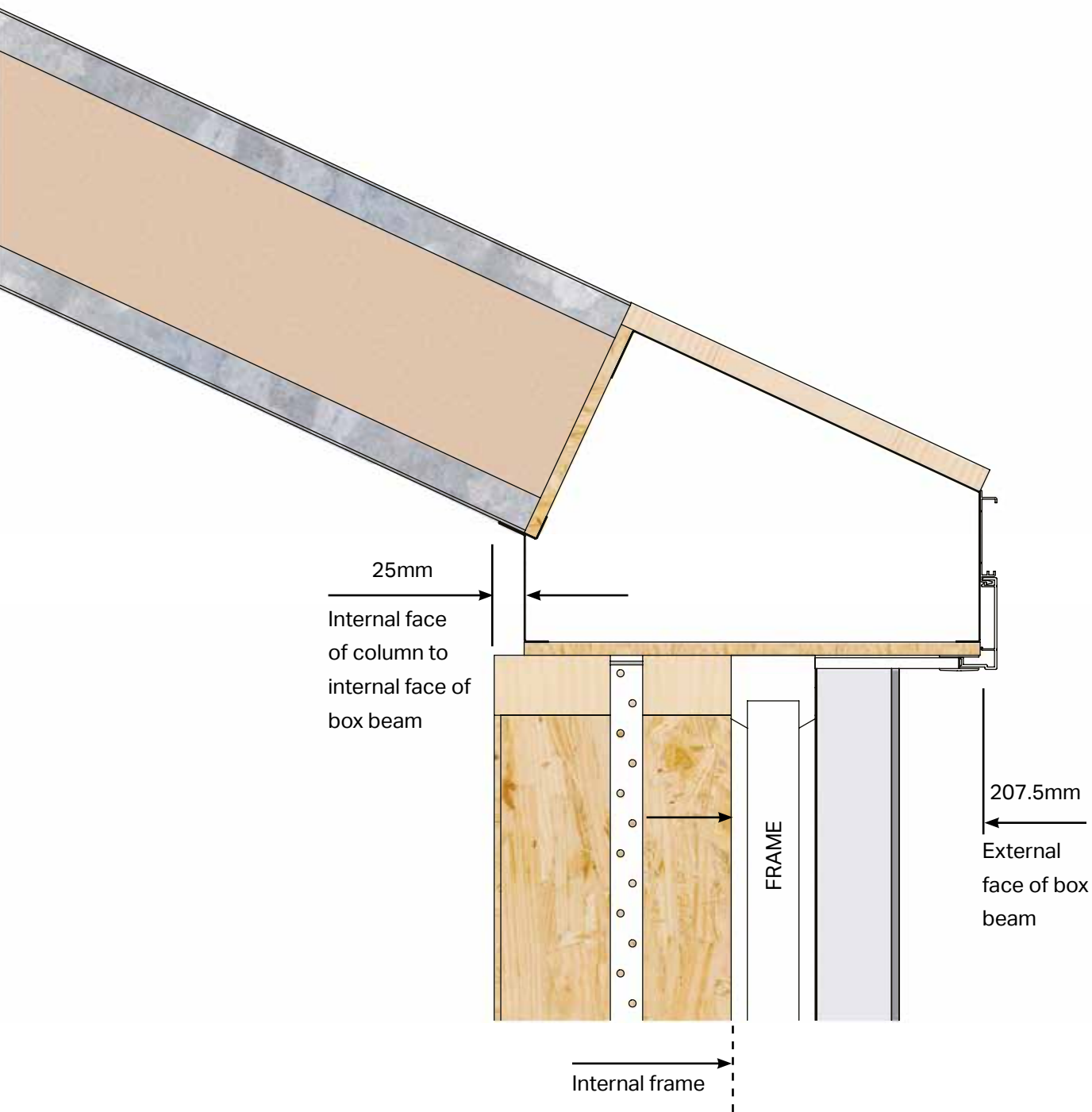
# GABLE GUTTER ACROSS GABLE INSTALLATION



If gable frame features glass... additional components will be supplied to raise the level of the glazing above that of the gutter, and should be installed as shown below.



# BOX BEAM ON SUPER-INSULATED COLUMN



If your installation contains a super-insulated column, then it is possible to support the box beam on the column providing that the beam is installed with the following details.



INSTALLATION - INTERNAL/EXTERNAL FINISH - TUDOR



1  
NO MATERIALS SUPPLIED FOR THIS FINISH. Attach corner beam support shelf



2  
Batten out to suit plasterboard fixing.



3  
Attach additional battens.



4  
Slide into position additional external OSB board.



5  
Fix into position.



6  
Plasterboard the roof.



7  
Fabricate 70 x 45mm triangular studding framework to suit.



8  
Fix into place.



9  
Attach additional mating timber battens.

INSTALLATION - INTERNAL/EXTERNAL FINISH - TUDOR



10  
Insulate void with mineral wool.



11  
Plasterboard face of gable



12  
Fit external soffit channeling.



13  
Fit external ship lap cladding edge channel.



14  
External ship lap cladding edge channel detail.



15  
Cut and fit ship lap to suit.



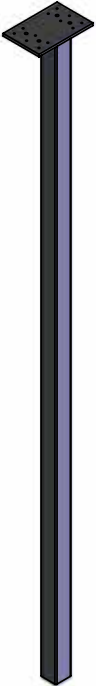
INSTALLATION - BEAM JOINING POST

This document shows how to join two Ultraroom Beams that are over 7m+ onto a stanchion post.

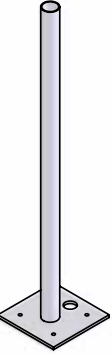
PLEASE READ BEFORE FITTING

SUPPLIED COMPONENTS

Below shows the various components that should be supplied as a beam joining on post kit.




**NRSP001**  
2500mm Post Sleeve  
with beam joining plate  
**X1**




**RRF004**  
Post base plate  
with spigot  
**X1**


**NRSK001**  
Fixing Kit




**BEAM FIXING SCREW**  
5.0 x 50 C'SNK pozi heco fix  
wood screw  
**X12**



**WASHER**  
**X2**

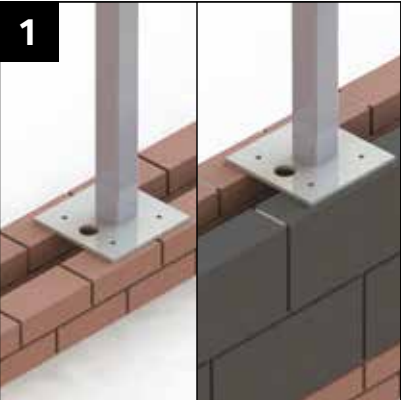


**NUT**  
**X2**



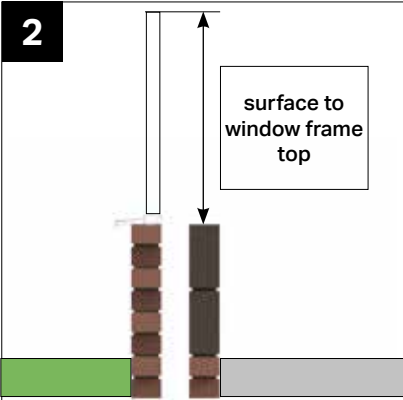
**POST COUPLING BOLT**  
M12 x 110 SOCKET CSK SCREW  
**X2**

FITTING THE POST



**1**

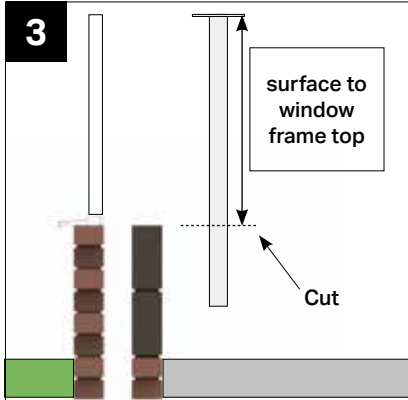
**NOTE:**  
The post can be placed either at floor level or on top of a dwarf wall. Guide will show instruction from dwarf wall level.



**2**

surface to window frame top

Measure from the surface the post will sit on to the top of the window frames, this will drive the length of the post sleeve (NRSP001)



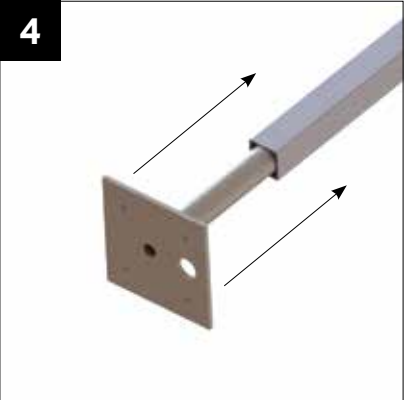
**3**

surface to window frame top

Cut

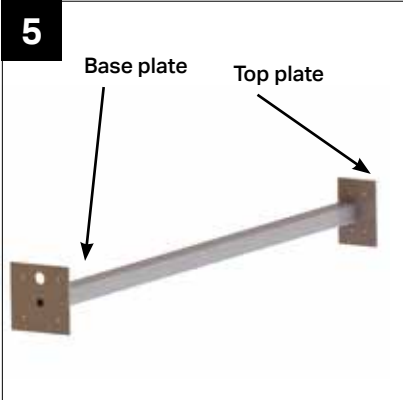
Cut the post sleeve (NRSP001) to the length measured in step 1

INSTALLATION - BEAM JOINING POST



**4**

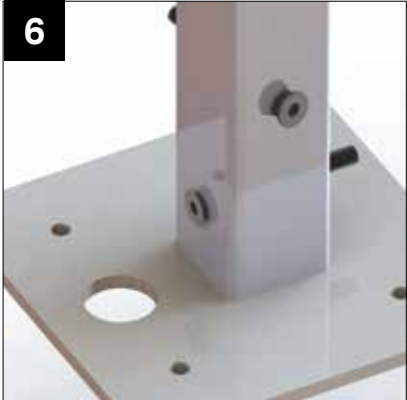
Slide the base plate (RRF004) all the way into the cut post sleeve.



**5**

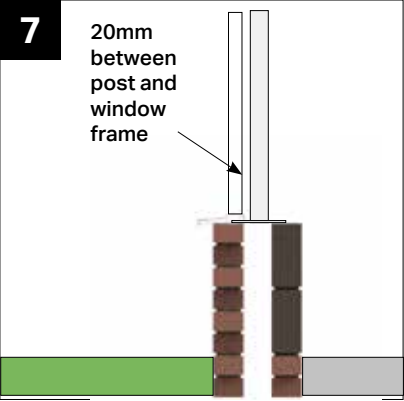
Base plate      Top plate

Align the two sections as shown in the image above.



**6**

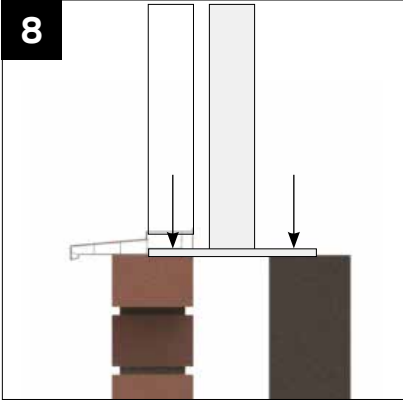
Secure the two sections together using the fixing bolts provided. Drill a 13mm hole through both sections and counter sink, secure with nuts provided.



**7**

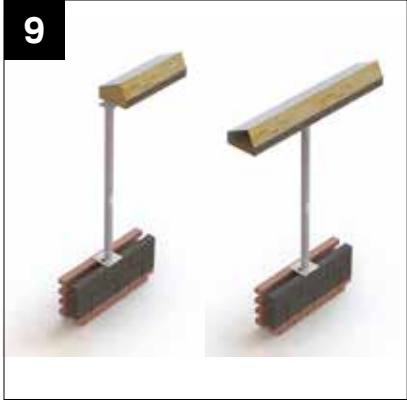
20mm between post and window frame

Offer up the post onto the brickwork; maintain a 20mm gap between the post and the external brick internal/window frame. Make sure the post is in the correct orientation. (SEE STEP 1)




**8**

Fix the post into the brick (FIXING NOT SUPPLIED)  
**NOTE: CILL MAY REQUIRE NOTCHING**



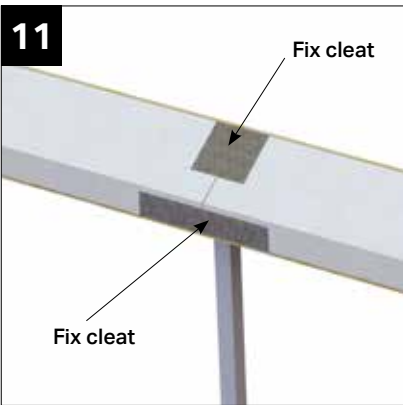
**9**

Once secured, place the first box beam onto the post followed by the second beam.



**10**

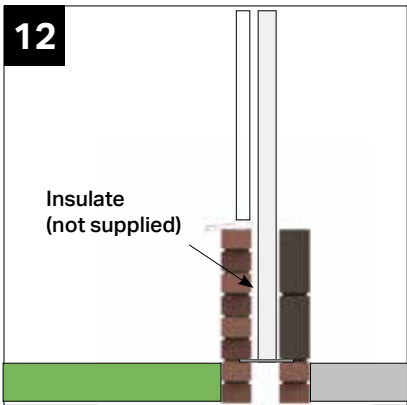
Once both beams are in place, secure the post into the beams. (Fix through the 12 counter sunk holes using the screws provided.)



**11**

Fix cleat      Fix cleat

Use the extra cleats provided to secure through the metal sections of the box beam. (see above image)



**12**

Insulate (not supplied)

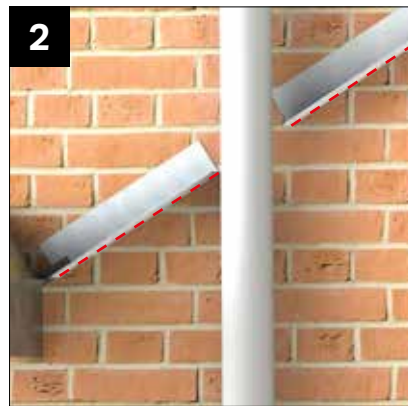
Insulate between the post and the external brick when post is set within the cavity wall.



## INSTALLATION - SOIL PIPES / FLUTES



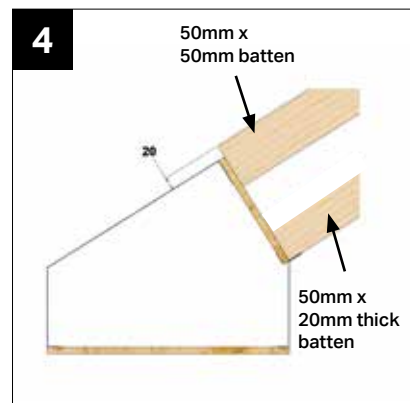
It is possible to modify our new panel on site to overcome obstructions at the host wall such as existing soil pipes.



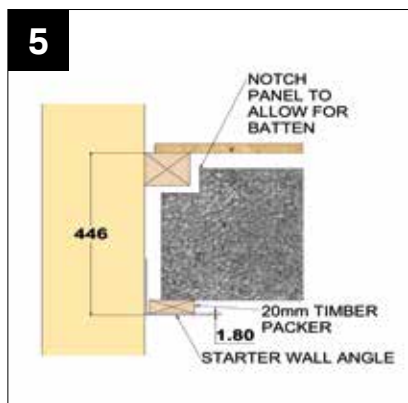
The ridge support starter bar must be split around the obstruction as shown in the example above.



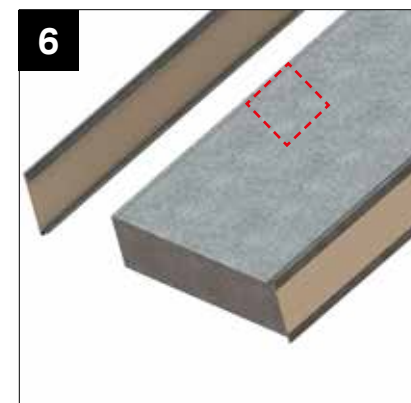
A 20mm thick timber packer should then be placed onto the starter bar to support the panel. A 50 x 50 timber batten positioned correctly and screwed to the host wall will offer support to the OSB roof covering (see diagram in next step).



This diagram shows the positions of the required timber battens. Please note that the panel will require notching to accommodate the upper OSB support batten.



NOTE: The top face of the timber batten set 446mm from the lower face of the starter bar timber batten.



After releasing the retaining straps, remove one panel side and dispose of appropriately. Cut a slot through the panel to accommodate the obstruction.



Fit the first panel as shown and continue to fit all remaining panels as usual.

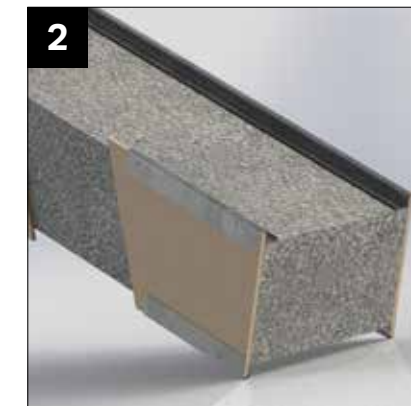


This view shows the Panel being properly supported at the host wall and the timber correctly positioned to support the OSB.

## DUO PITCH - SOIL PIPES / FLUTES



If a soil pipe was specified with U-design at the point of order, the panel to accommodate this at the host wall will be prepped in our factory.



The panel side adjacent to the wall will be split around the pipe requiring only the PS to be cut on site to allow it to pass through the roof.



OSB should be cut on site as shown before installing the breather membrane.



If the tile sheets naturally split across the soil pipe apron (not supplied) as shown, install the lower tile sheet beneath the apron.



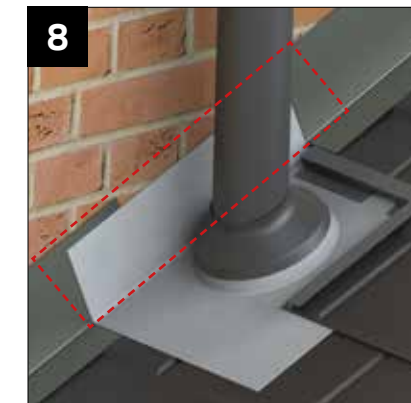
Next, install the upper tile sheet over the apron to allow proper shedding of water and cut around the pipe as shown.



If alternatively a whole tile sheet extends above and below the apron, cut the tile as shown to allow the apron to flow above the lower tiles.



Finish the edges of the cut tiles with the supplied powder coated frames.



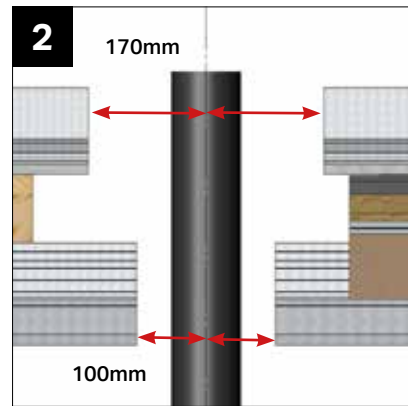
Structure the leadwork against the host wall as illustrated to allow proper shedding of water and install additional lead flashing behind the pipe (shown dotted) to finish



## LEAN-TO - SOIL PIPES / FLUTES



1  
If a soil pipe was specified in U-Design at the point of order, your half ridge assembly will be split as shown.



2  
These should be installed in the usual manner paying attention to the setout dimensions as illustrated above



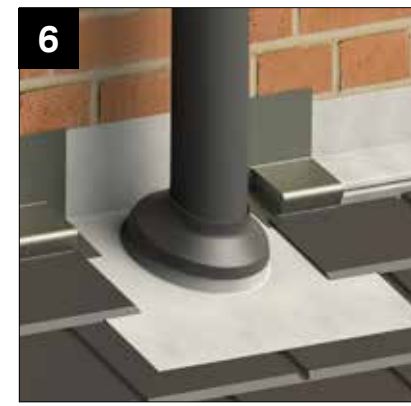
3  
The "pipe" panel is cut on site to accommodate the pipe passing through the roof, and the OSB also requires an aperture cut (see inset image).



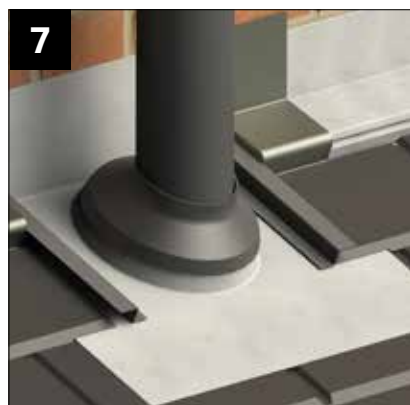
4  
Install soil pipe flashing apron (not supplied) over the breather membrane. If your roof features glazing install the tile stop and aluminium flashing cap at this stage at 170mm from pipe centreline.



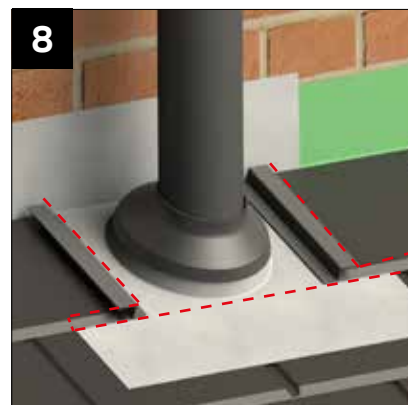
5  
If your roof features glazing, flash ends of aluminium flashing caps with butyl patch (supplied) as shown. Cut the patch in half and mould carefully around the contours of the aluminium profiles to form a watertight seal



6  
Cut the adjacent tile sheet allowing the pipe flashing apron to flow above the lower tiles as shown – this ensures the correct flow of any shedding water above the tiles.

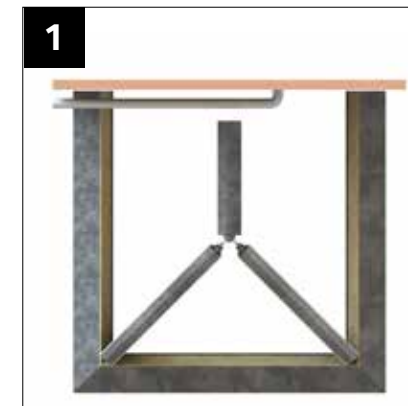


7  
Finish with the powder coated rails (supplied) to conceal the cut tile edges before completing the lead detail to finish



8  
A solid roof assembly will look as shown and lead detail comes down the wall directly on to the tiles. Tile cut shown in red.

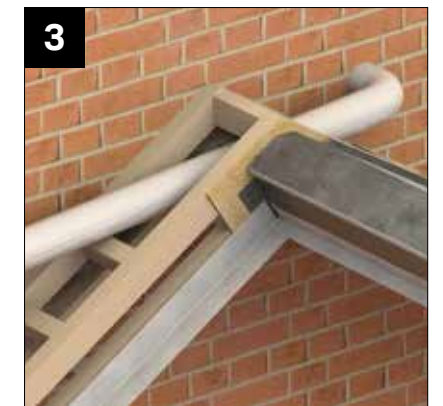
## INSTALLATION - WASTE PIPES



1  
In this example, the position of existing pipework means that the ridge cannot be anchored back to the host wall in the usual manner. In this case, a framework must be constructed on which to mount the ridge. This can be done in 2 different ways.



2  
The first option is to construct a truss to support the ridge away from the host wall which runs the full length of a panel.



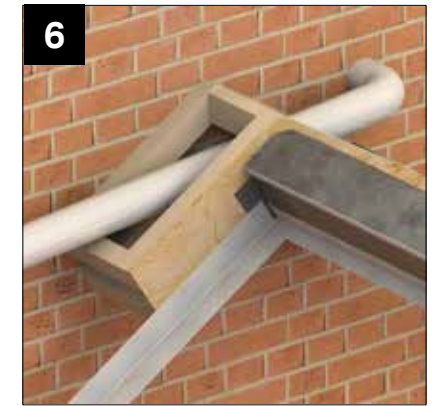
3  
The ridge support starter bar can still be used to set out the ridge, and panel installation is carried out in the usual manner forward of the truss.



4  
The fitter is responsible for insulating the cavity appropriately.



5  
The second option uses a smaller, more localised ridge support as shown.



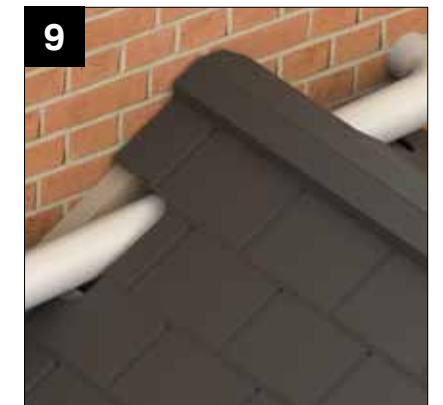
6  
The ridge support starter bar can still be used to set out the ridge. This can then be removed and cut down to support the panel at the host wall as shown in the next step. Please refer to diagram for setout dimensions.



7  
After releasing the banding, remove the panel side and dispose of appropriately. Cut out a portion of the panel to fit around the ridge support and install as shown.



8  
The fitter is responsible for insulating the cavity appropriately.

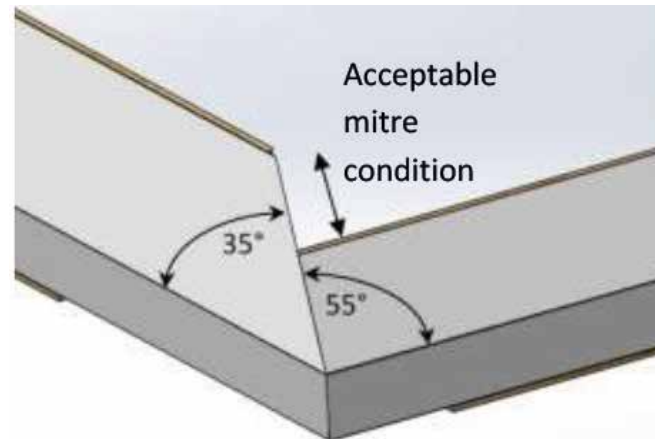


9  
The fitter is responsible for cutting the tiles and OSB around the obstruction and flashing appropriately.



## IMPROVED HIP ASSEMBLY - VARIABLE PITCHES

Your Ultrarof beams have been developed further and now allow for improved pitch difference capability. Roofs with this capability will incorporate beams that look different at the mitres. In some instances the difference compared with an equally pitched roof may be quite dramatic. This is perfectly normal and expected when your roof has different pitches at each beam.

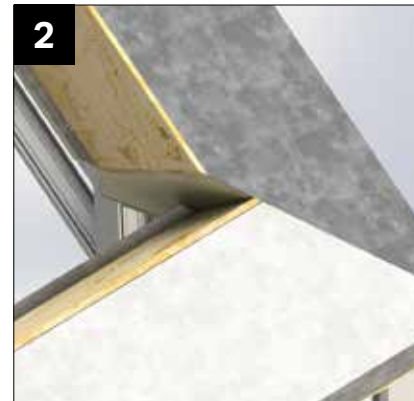


The image above shows an example of the final finish achieved internally for roofs with beams of the type shown on this page. **NOTE: the lowest pitch internal beam face will always require additional battening to bring inline with the steepest pitch beam face prior to plaster boarding.**

Viewed externally this graphic represents the jointing condition of two different pitch beams. The overall beam width is the same whilst the mitre lengths are different due to the mitre angle not being equal. **NOTE: the box beam, external mitre and upper face should always be inline.**



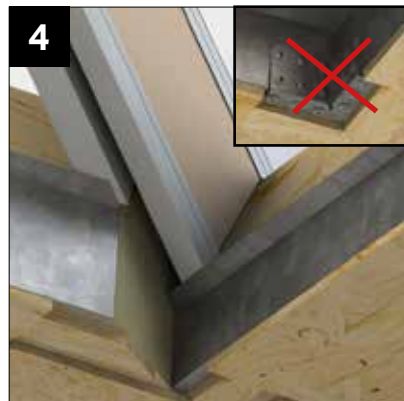
In variable pitch situations the beam setout shelf is asymmetric, with the longest side relating to the beam with the steepest pitch – see location plan.



The assembled varying pitch beams will look something like the example shown. **NOTE: variable pitched beams will always be staggered on the internal face.**



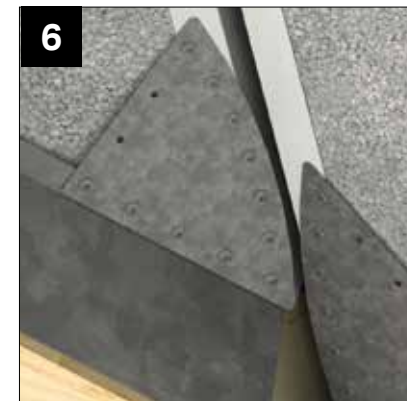
The hip assembly features a notched beam overhang and offset hip wings. The notch should be oriented towards the beam with the steeper pitch.



When in position, the offset hip wings should sit on the beam panel shelves as shown and be fixed as described in the main installation guide. **NOTE: INTERNAL BEAM CORNER CLEATS NOT SUPPLIED IN VARIABLE PITCH SITUATIONS.**



Fix the hip down into the beam through x 4 pre-drilled holes using WPCS020 (supplied). **NOTE: the external box beam cleat is still required.**

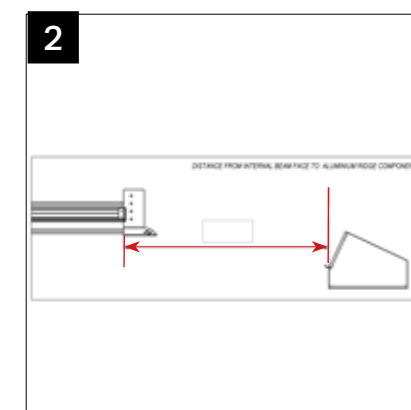


Position and fix the internal hip retaining plates using 18 x CHAA 006 screws provided. **NOTE: THE ORIENTATION OF THE PLATES CAN BE CHANGED TO ALLOW FOR OPTIMUM FIXING AS SHOWN.**

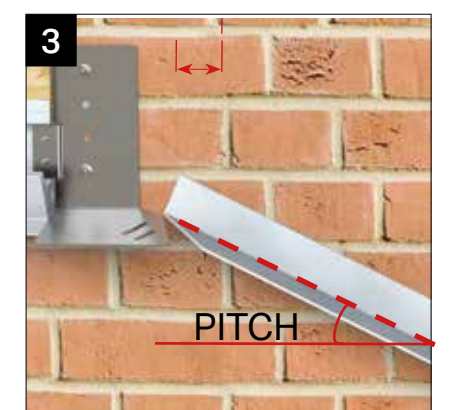
## LEAN-TO HIPPED ENDS



A hipped end ridge will be supplied with a hip support bracket pre-fitted as shown. **(Please note: the OSB and upper aluminium part will only be supplied if the roof is glazed).**



See critical dimensions sheet for correct positioning relative to adjacent beam.



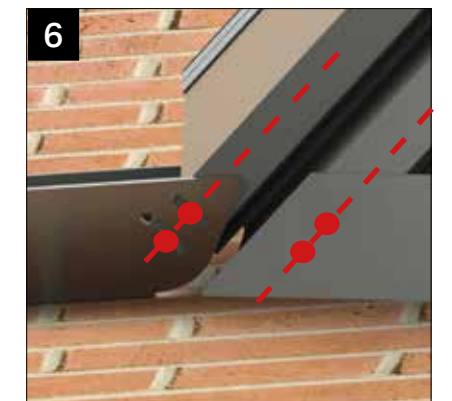
Install wall support angle by engaging beam bracket in the usual manner (see standard install guide), and set to facet pitch.



Install hip by resting its wings across the support bracket and wall support angle.



Internal view of hip position.



Drill 2 X 6.5mm holes per hip along the centreline of each wing as shown. Where support bracket is present, drill through pre existing slots.

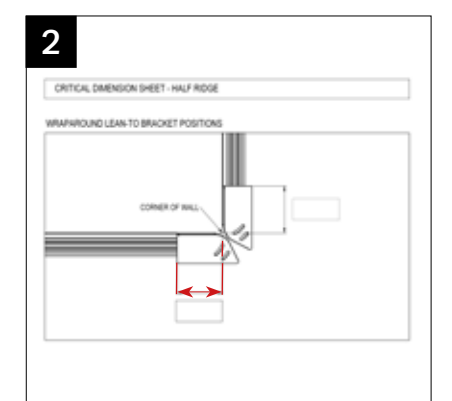
## WRAPAROUND RIDGE (EXTERNAL 90° CORNER)



Secure the hip using low profile bolts and flange nuts provided in the orientation shown.



In the case of a wraparound ridge, a handed pair of hip support brackets interact as shown. **(Please note: the OSB and upper aluminium part will only be supplied if the roof is glazed).**



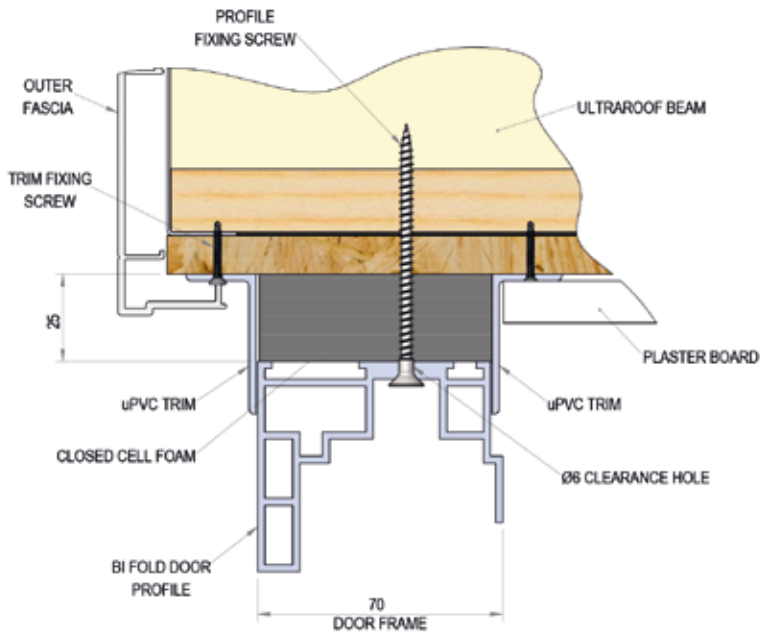
See critical dimensions sheet for correct positioning relative to corner of wall.



# HOW TO INSTALL WHEN LARGE DOORS ARE UNDERNEATH

## Adjusting Door Frame Heights

Ultraroom is capable of unsupported spans up to 4m in width. There is a slight natural deflection in the beam. The height of sliding or bi-fold doors that are positioned under the unsupported span should be smaller in height than the supporting structure. This will ensure the roof eaves beam does not cause the head of the door frame to bend and prevent the door from operating correctly. The height of the doors should be 15mm smaller than the masonry or frames supporting the roof. This will accommodate the worst case scenario for the deflection of the beam. You may wish to add another 10mm deduction in height to account for building tolerances and frame manufacture. Fixed glazing in sliding doors does not offer structural support, posts aligned with mullions should be used to support the roof if sliding doors exceed 4m in width (see next page).



Final fixing to the head of the door should be completed after building the roof, fixing the head of the frame to the roof underside of the box beam. You should ensure the roof box beam is not causing deflection in the door frame. An L shaped trim can be fixed to the underside of the roof box beam to allow slight movement whilst cloaking the gap between the roof box beam and the head of the door frame, see above.



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**Job No.: 4047 07/25 V11 WPIG003**

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