

Guardian Warm Roof Installation Guide

As the original conservatory warm roof replacement in the UK, this is the most advanced and energy efficient home improvement system available

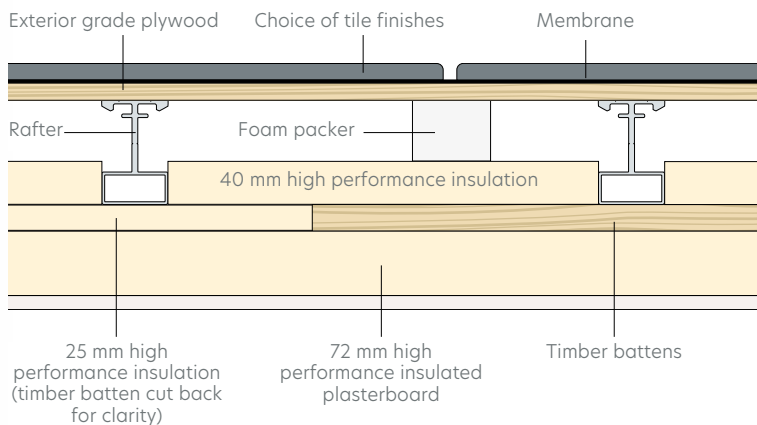


Introduction

Things to note

- Your solid roof will require building regs approval etc.
- Update your local Building Control with a start date.
- LABC documentation will help guide you.
- Spot checks may be required to inspect accuracy of installation as part of Team Guardian compliance.

Guardian warm roof construction



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Solid Roof System

Roof layout plan

Please refer to the roof layout plan prior to commencing installation. It is very important that the roof fits the window layouts and that all the windows are fully reinforced. All components are numbered to match the roof layout plan for ease of installation.

Paperwork included:

- Overall roof plan
- OSB Plan
- Internal 40 mm insulation
- Internal 25 mm insulation
- Boxed Items
- Pack List



You will receive a plan with every roof - consult this at ALL times.

Tools required

Cordless drill



Angle grinder



Silicone gun



Foam gun



Tape measure



Hand saw



10 mm spanner and
10 mm nut spanner



10 mm ratchet



Snips



Staple gun



Screwdriver



Spirit level



Angle finder



Putty knife



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Components



107320
Ringbeam

107531
Wallplate

107316
Ridge beam

115170
Rafter

115154
Edwardian hip

115155
Victorian hip

AL59246M
175 mm box
gutter

CEN0345MILL6M
222 mm box
gutter



CP205708D
Spider bracket



MS2RSF00400032
Spider fixing pin



CP205708E
Large spider arm



CP205708C
Small spider arm



PML08L/HS
Jack rafter left
hand bracket



112169
90° ringbeam
cleat



PML06
Splay right
hand bracket



PML08R/HS
Jack rafter right
hand bracket



112197a
135° ringbeam
cleat



PML11
Rafter cleat



PML02
Edwardian left
hand bracket



PML01
Guardian
aluminium bracket



PML05
Splay left
hand bracket



PML03
Edwardian right
hand bracket



PML04
Victorian
bracket



Timber packer



Membrane



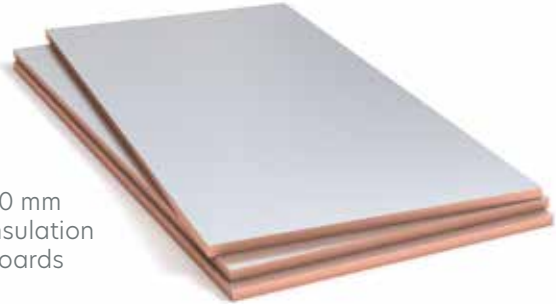
Timber battens



25 mm insulation boards



Plywood / OSB



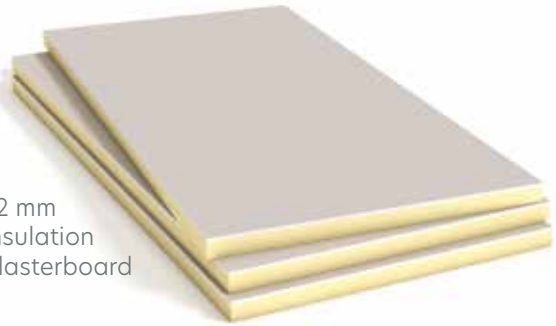
40 mm insulation boards



Insulated foam tape



Polystyrene packer



72 mm insulation plasterboard



Gutter, gutter clips and downpipe



75 mm insulated foil tape

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Overview



- 1 Roof tile
- 2 Ridge beam
- 3 Spider
- 4 Spider arm
- 5 Rafter
- 6 Hip
- 7 Ringbeam

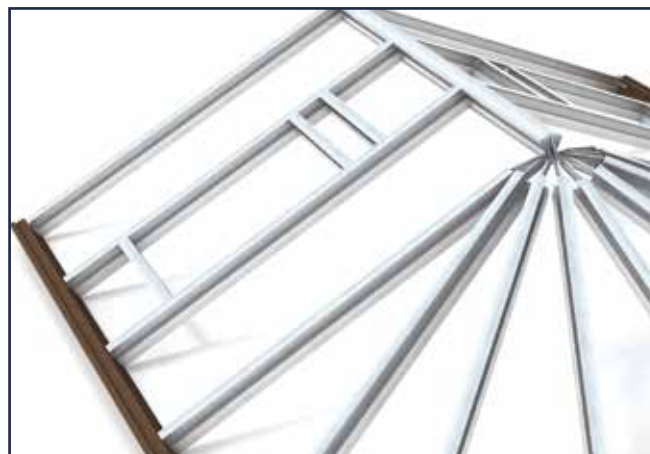


- 8 Breathable waterproof membrane
- 9 Exterior grade plywood
- 10 Foil backed insulation
- 11 Foam packer
- 12 Timber battens

All components for the Guardian Roof are delivered to site in pre-cut sections.

The roof layout plan will also be included in the delivery and all components will have corresponding numbers to the plan.

Cross timbers for roof windows can also be supplied in aluminium from your fabricator.



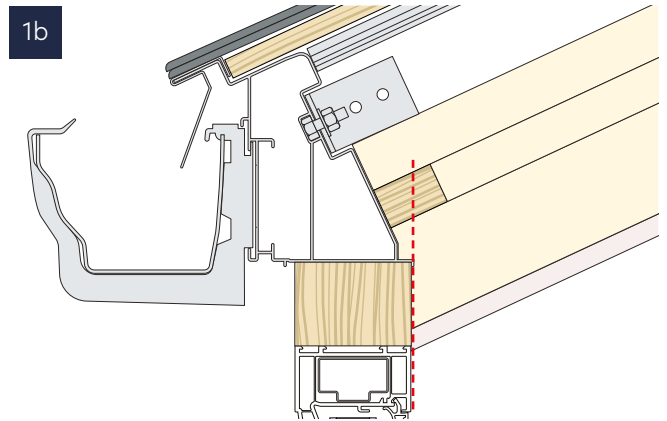
Cross timbers for roof windows can also be supplied in aluminium from your fabricator.

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Step 1 - Ringbeam



1a
Silicone seal 70 x 60 mm timber packer to windows using low module silicone.



1b
Ensure internal line of timber and frame line up.



1c
Remove existing glazing and fix through timber packer using fixings supplied. Fixings at no more than 150 mm from either end and no more than 500 mm centres.

150 mm	500 mm	500 mm	500 mm	150 mm
--------	--------	--------	--------	--------



1d
Fix angled ringbeam cleat from the outside, using fixings supplied.



Apply a line of silicone sealant between the Ringbeam and the house wall.



Apply a line of silicone sealant to the outer edge of the ringbeam joint.

Solid Roof System

Step 2 – Assemble Rafters

Ridge height will be noted on drawings provided (page 4).

Gable rafters to be bolted to house wall and secured at no more than 300 mm centres using suitable fixings determined by the wall construction.

Ensure Stainless Steel Cleats provided are used when fixing to the house wall at the top and bottom of wall rafter.

Stainless steel cleats must also be used at gable end.



PM07 Guardian Steel Cleats

NOTE: Use adjustable steel props to achieve ridge height.



Fit the bar to the Eaves and ridge using the rafter cleats. The bar should be securely fitted to the house wall via direct fixings through the bar into the host wall. Fixings should be equally spaced no more than 300 mm apart.



Use adjustable steel props to achieve ridge height, check level of ridge.



Fix rafter to ringbeam using pre-installed cleats and bolts, loosely tighten at this stage.



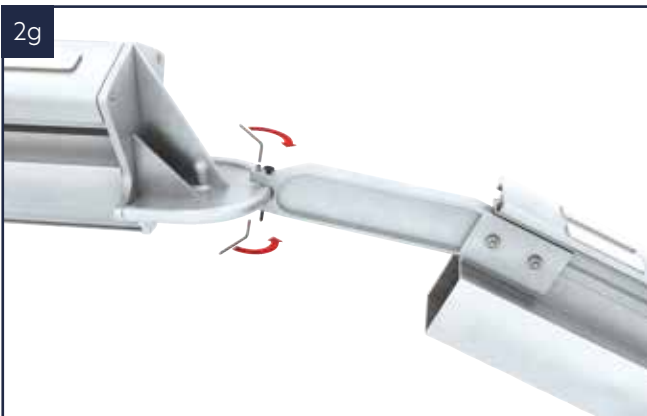
Loosely fit back rafters and front hips to the spider joint making sure locating pins are in place to temporarily fix arm to spider.



2e Infill between the wall rafter and hips with intermediate rafters (including any pre-engineered window framing) loosely tighten at this stage.



2f Ensure all roof sections are aligned to the pre-engineered positions and tighten into place.
For Edwardian / Victorian hip cleats, tighten bolts on rafters first before tightening to ringbeam.



2g Tighten pre-installed grub screws using allen key. Please ensure grub screws are not overtightened. Tighten top and bottom equally.

NOTE: Steel props should be left in until all external work has been completed.

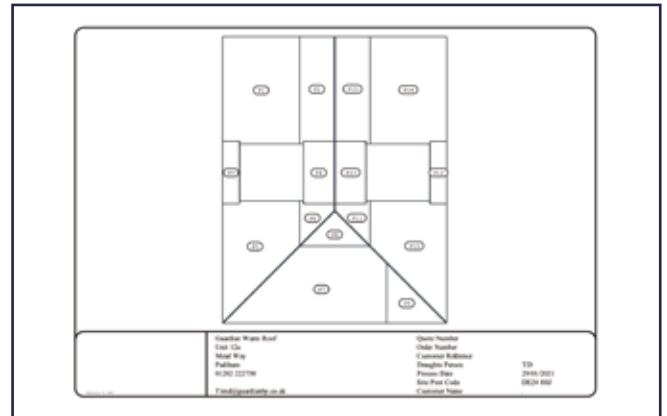
Solid Roof System

Step 3 – Exterior Plywood

NOTE: If fitting installation before plywood, see page 24 – Option 1.



Fix plywood sheets to rafters as per roof schedule.



Plywood sheets to be fixed at no more than 200 mm centres using 4.8 x 38 mm self-tapping fasteners (drill pilot holes).



Continue fixing the plywood as per roof schedule.



Finish the first side then continue around the whole roof.



If you are fitting a VELUX® window, please see separate guide.



If you are fitting a Solstice panel, please see separate guide.



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Step 4 - Membrane

CAUTION: Roofing membrane must be laid from the bottom up with the overlap always to the outside as you move up the roof. This also should be done at hip points.



4a Run a bead of sealant between the plywood and the house wall.



4b Cover with vapour permeable underlay with a vapour resistance of less than 0.25 MNs / gram as required by BS5250: 2002.



4c Run the membrane up the house wall by 100 mm.



4d Overlap all joints of underlay by 150 mm (to dotted line) and over run ringbeams by 100 mm. Staple the membrane down to timber sheets.



4e



Add the final run of membrane over the apex of the roof.

4f



When all membrane is in place, fit the watercourse / soaker against the house wall.

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Step 5 – Roof Tiling



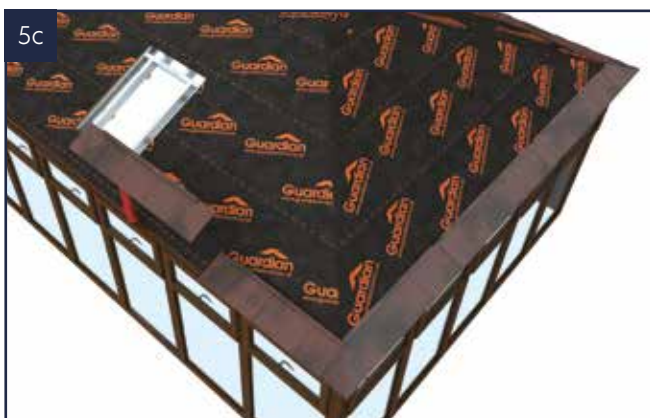
Starting bottom right corner of the roof with the first tile, hook tile onto the leading edge of the ringbeam and overlap the watercourse / soaker where it meets the house. Hold tile firmly in place (ensuring it is kept flat) and fix at no more than 300 mm centres into top lip of tile.



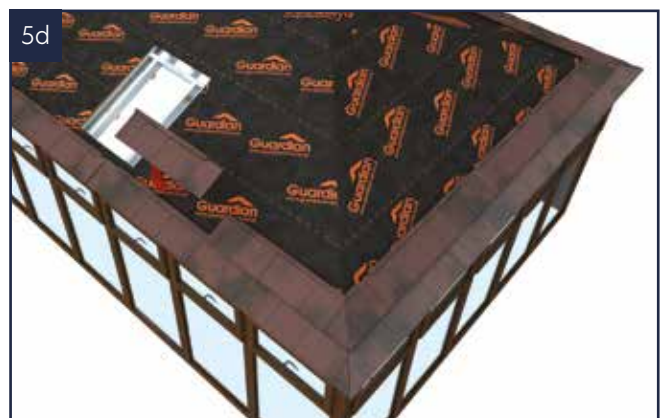
Ensure subsequent tiles are fully located into the previous tile.

All tiling is from right to left. Complete one row at a time. For the second course always start with half a tile.

NOTE: Solid roof extensions are subject to building regulations therefore it is always advisable to fit cavity trays. Where there is an existing structure and this is a replacement roof only local authority advice should be sought, it is also advisable to investigate the existing wall for any signs of damp that may already exist.



Dependant on height of roof window 1-3 tiles should be fitted below window before bottom flashing is installed.



Fix next subsequent tile ensuring side / end / nose laps interlock correctly.



5e Hook nose of upper tile into lip of tile below ensuring a tight fit (the heel of your hand or a block of wood can be used to gently knock the tiles in tightly together).

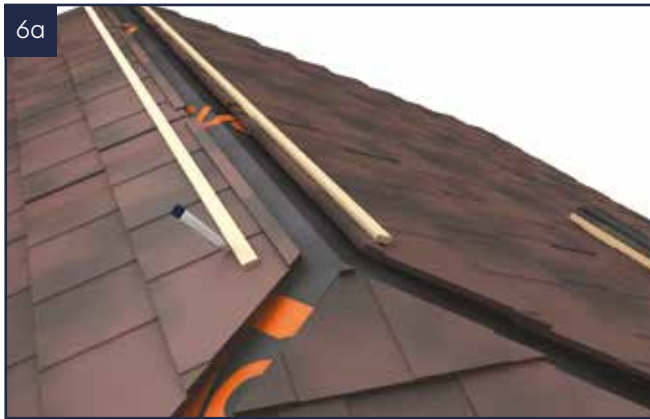


5f Roof windows should be installed with a compatible slate flashing kit.

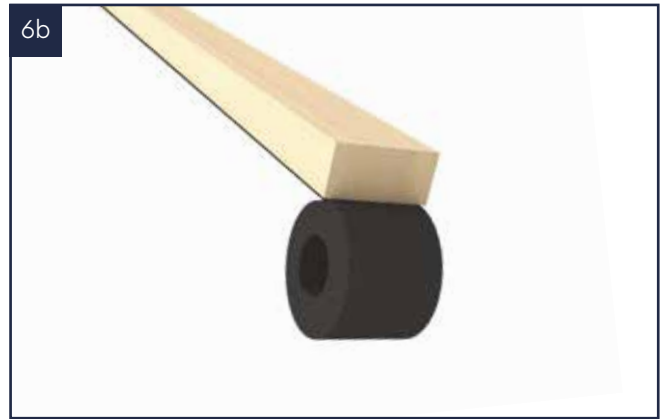
Always refer to separate Guardian Roof Window guide for specific fixing detail as these may vary.

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Step 6 – Ridge and Endcap



Using the crown ridge and end cap positions as your starter - dry fit battens 115 mm from the apex of the roof to the lower edge of the batten.



Apply expandable foam tape to underneath the 25 mm treated timber batten.



Fit timber battens and screw into place (battens must be kept dry).



Use low modulus silicone between the front edge of the roof batten and tile.



Ensure the ventilation strip is fixed to the timbers.



Fit endcaps and fix on both sides. Use touch up kit provided to hide screw heads.



6g



Position delta ridge over batten and fix down the sides. Use touch up kit provided to hide screw heads.

6h



Fix rafter cap over delta ridge profile at verge and fix on all sides. Use touch up kit provided to hide screw heads.

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Step 7 - Gutters



Fix external cover trim to timber packer using low modulus silicone sealant to top of trim and fasten with poly pins coloured to match.

Run a bead of low modulus silicone sealant along the bottom of the trim to the top of the window.



Twist fit brackets into channel of the ringbeam and screw into place.

Starting point at ends and corners to be no more than 120 mm from the corner / end and all intermediate brackets at no more than 500 mm centres.



Fix jointing bracket to the end of the gutter.



Install gutter ensuring all ancillary joints / bends / outlets are sufficiently watertight.

Ensure gutter is sitting at pre-marked lines within all guttering ancillaries.



Determine the position of the downpipe outlet, fit the spigot into place and seal with a low modulus silicone. Install downpipe.



Fix corner joint bracket into place and continue with the guttering.

NOTE: Ensure tie bars are fitted at this point before internal fit out is begun.

Solid Roof System

Step 8 - Insulation Between Rafters

Option 1 - fit insulation before exterior completed.



Fit 25 mm timber battens at no more than 400 mm centres to underneath of rafters.

Fixings are to be 5.5 x 50 mm light steel 3 mm - 12 mm wing tipped or a Timco 5.5 x 50 mm self drilling screw.



Batten out entire roof structure.

Insulation is then dropped into place from above.



Option 2 - fit insulation after exterior completed.

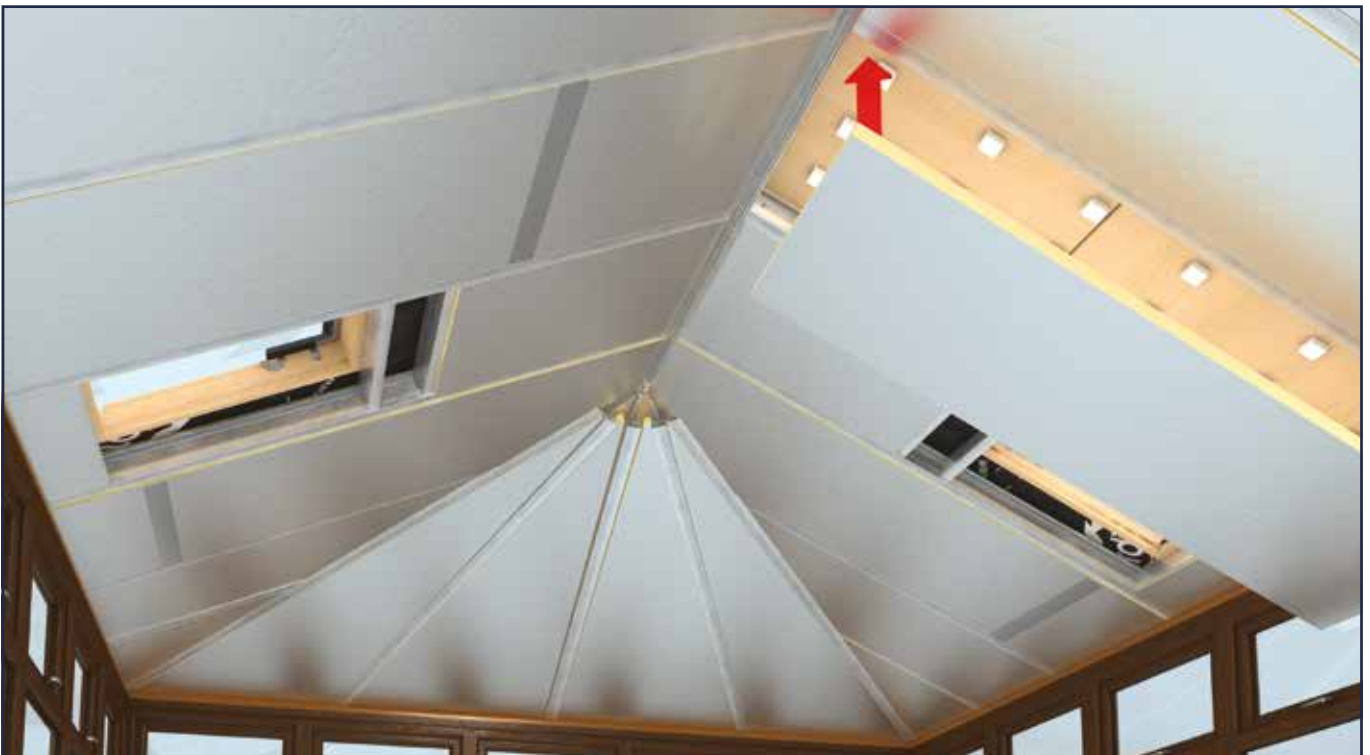


Apply foam packers to the exposed screw points under the ply, ensuring that the foam packers are evenly spaced.



CAUTION:
All insulation used must have a foiled back covering.

Fix 40 mm insulation board between the rafters. The 40 mm insulation board should sit flush with the underside of the rafter.



Solid Roof System

Step 9 – Fix Insulation Battens



Fit 25 mm timber battens at no more than 400 mm centres to underneath of rafters.

Fixings are to be 5.5 x 50 mm light steel 3 mm - 12 mm wing tipped or a Timco 5.5 x 50 mm self drilling screw.



Batten out entire roof structure.



Batten over window opening and cut back to suit.



Please ensure under slated ridge is double batted.



NOTE: Alternate interior finish option (flat top) - details to come.

Solid Roof System

Step 10 – Insulation over Rafters



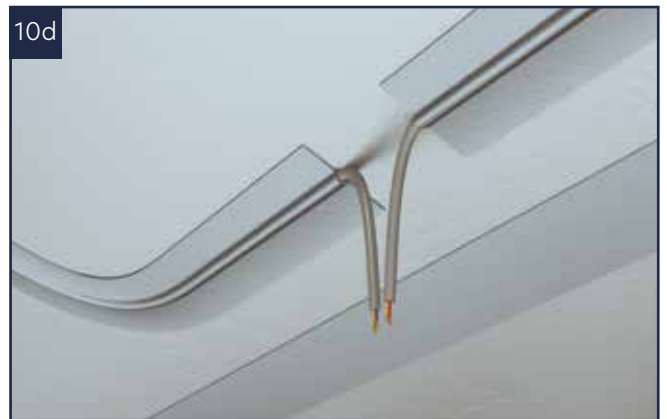
Install 25 mm foiled insulation between battens and apply expanding foam to the spider assembly.



75 mm insulated foil tape should be run over every batten and the window line so no timber will be visible from the inside. Tape all insulation joints.



75 mm insulated foil tape should be run around all insulation joints.



At this point, any wiring for lighting / spotlights should be added.

NOTE: Refer to separate window installation guides for insulating around glazed apertures.

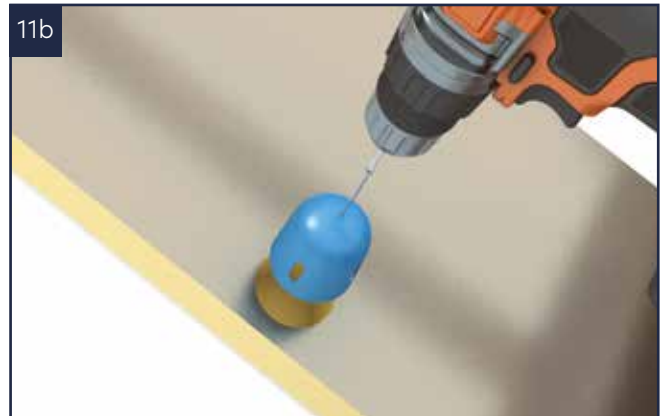


Solid Roof System

Step 11 - Insulated Plasterboard



11a
75 mm insulated foil tape should be used around the top of the window frames to cover any exposed timber.



11b
Drill 127 mm hole through the insulation foam to the cutter depth.



11c
Remove remaining foam to back of plasterboard.

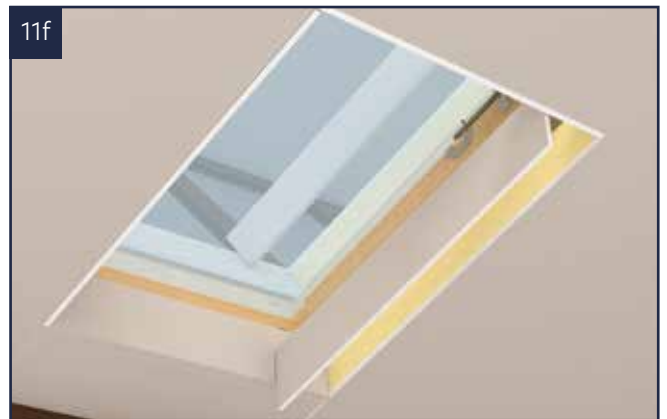


11d
Cut and mitre 72 mm insulated foil backed plasterboard, fix into position at no more than 50 mm in from the corner and at no more than 200 mm centres with fixings supplied.



Holes for spotlights can now be cut in preparation for fitting of the lights, see appendices for light fitting.

NOTE: these should break through the plasterboard only (roughly 15 mm) into the pre-cut holes.



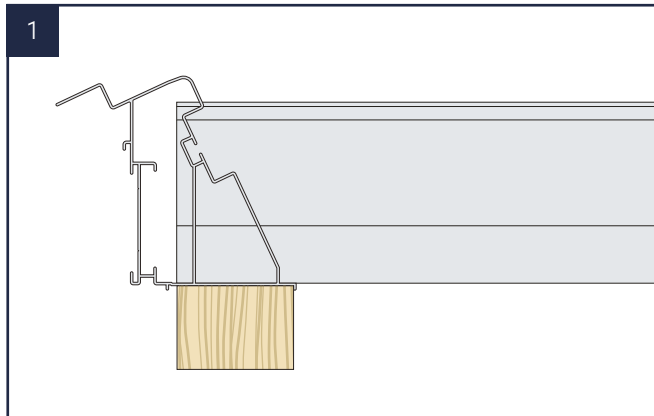
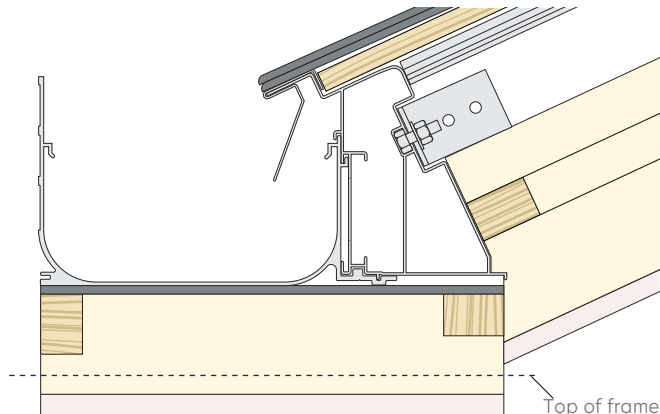
Finish around the roof window opening with plasterboard.

Solid Roof System

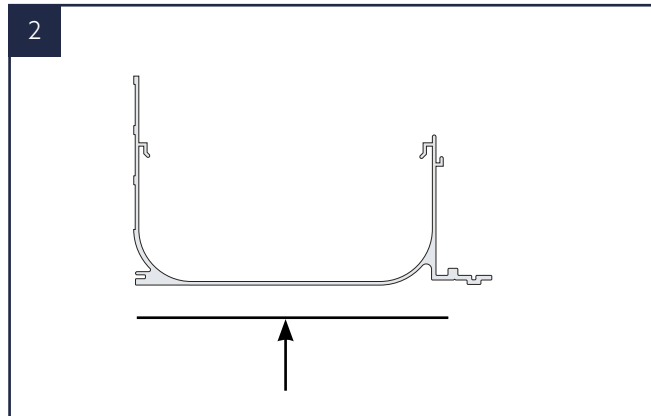
Box Gutters

When using a box gutter be aware of the internal Insulation bottom edge position.

The box gutter insulation sits 82 mm below the bottom edge of the aluminium, therefore clearance for any opening sashes or doors needs to be factored in.



Sit the box gutter level onto the timber header (should sit flush with external frame lines).



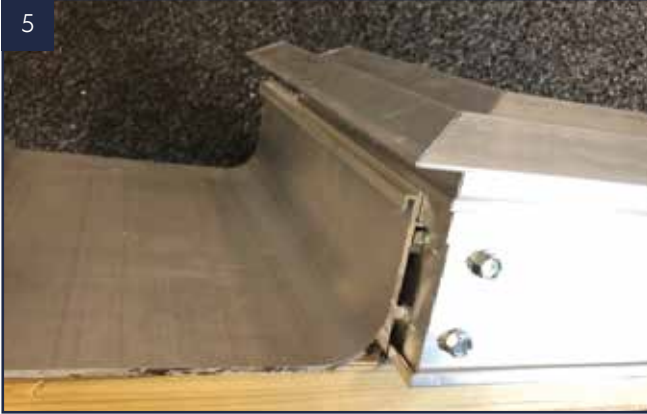
Ensure box gutter has adequate support as per Guardian structural guidelines.



Pre-drill aluminium 100 mm from each end and then at approx 450 mm centres ensuring a brick is drilled and not mortar.



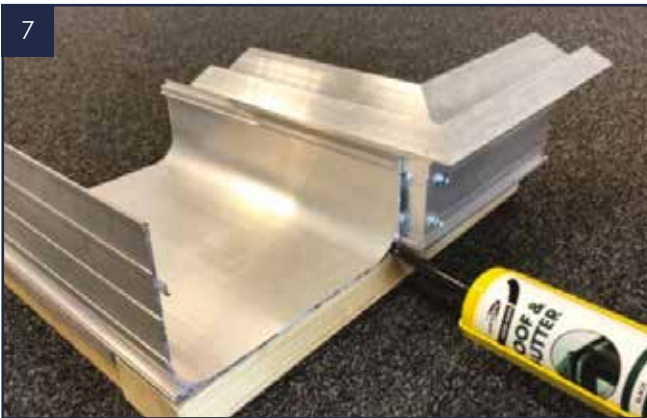
Drill through into host wall and fix using appropriate fixings, 7 mm direct fixings recommended.



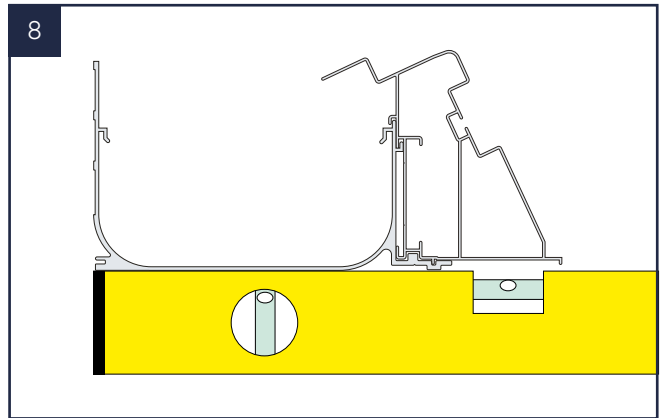
5 Position eaves into place and fix through the cleats adjoining the boxgutter eaves.



6 If not already sealed, run a bead of silicone along the top edge of the joint between the eaves and boxgutter.



7 Seal up the ends of the boxgutter and eaves, also seal the corners of all joints.



8 Check assembly for size and squareness, ensure all frames are plumb.



9 Assemble the roof rafters and ridges as stated in the guide for standard roofs.



10 Ensure aluminium gutter is clean dry and grease free.

Solid Roof System

Box Gutters



Apply two beads of silicone to the aluminium approximately 35 mm and 70 mm in from the end, ensuring it is applied up each side also.



Remove the backing tape from form the adhesive tape on the adaptor.



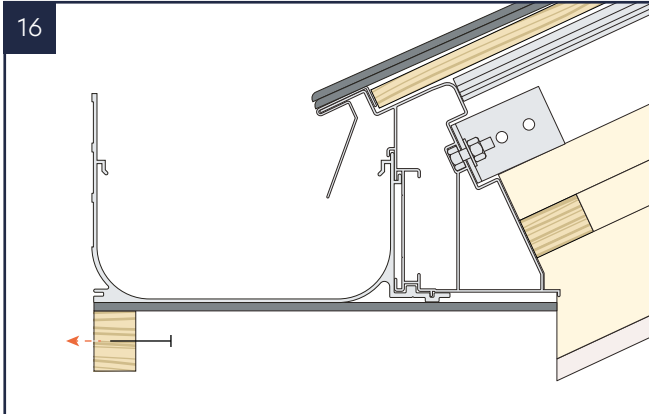
Slide adaptor under eaves side hook and push into position so that second tape is just onto the aluminium.



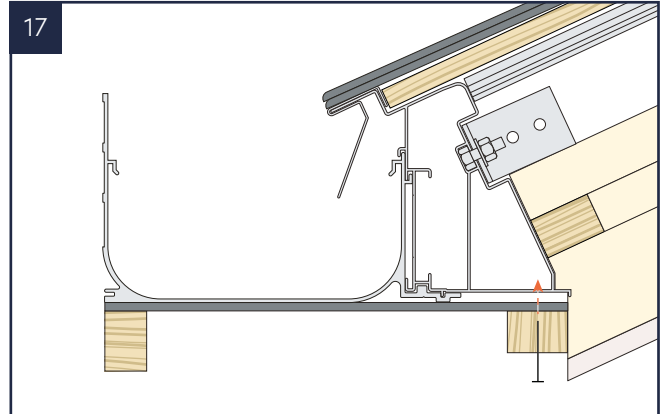
Press adaptor down into place so that the wall side clips under the hook.



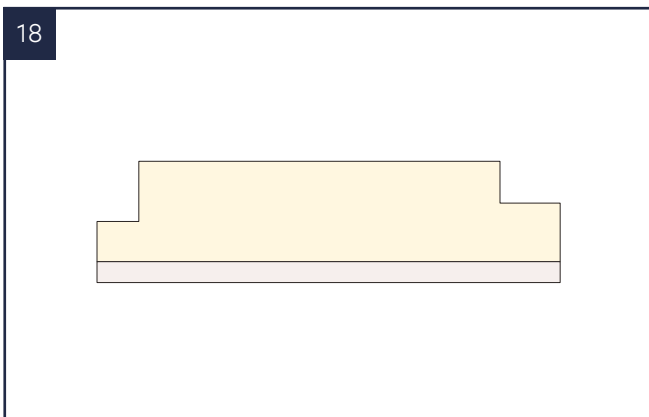
Fit the adaptor securing strap to hold firmly in place. Pull up under eaves side. Hook and pull down on the wall side hook.



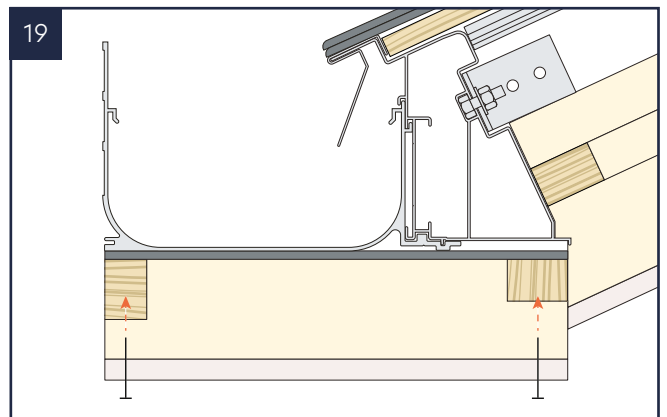
16 Fix a batten under the back edge of the box gutter to the host wall (25 x 19) 25 mm vertically.



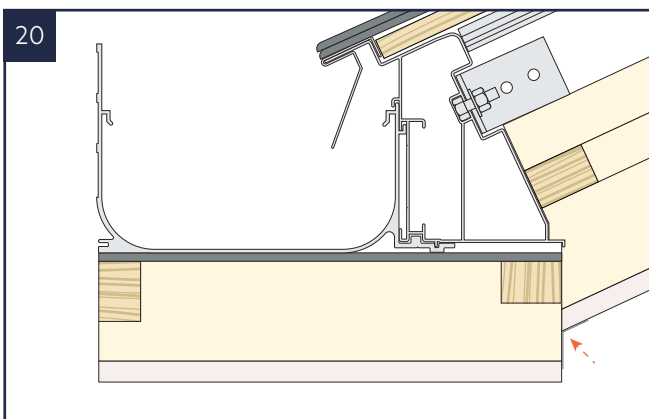
17 Fix batten to front edge of box gutter eaves (25 x 19) 19 mm vertically.



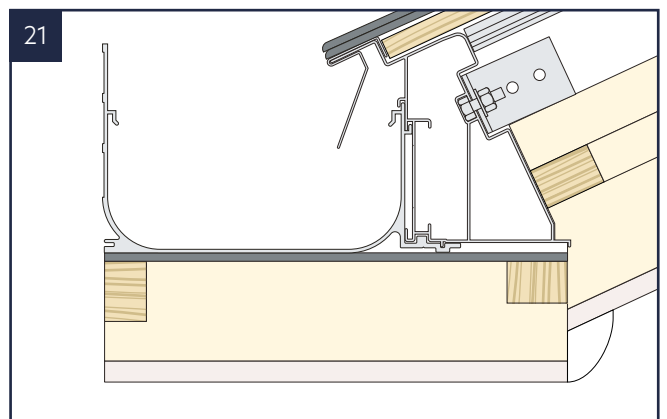
18 Notch out the batten positions on the 72 mm insulated plasterboard.



19 Fix the board through into the battens.



20 If plastering the internal edge then the foam needs taping prior to plastering.



21 If not plastering the internal edge then fix a beading to the foam.

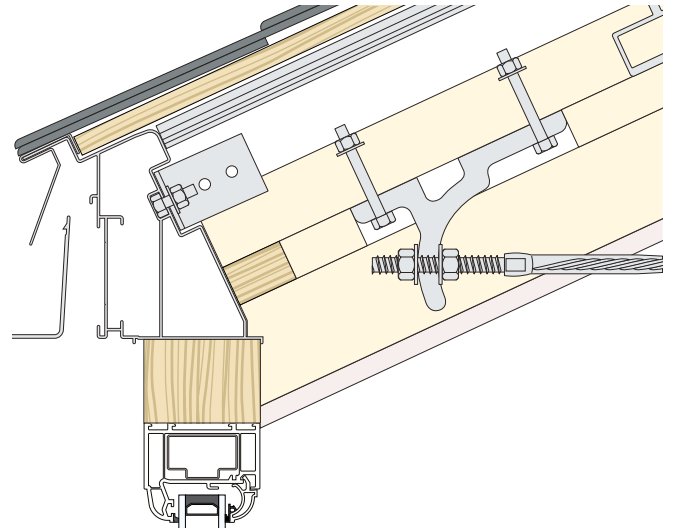
Solid Roof System

Tie Bars / Wires



Install optional timber tie cross beam.

Standard TieWire Position

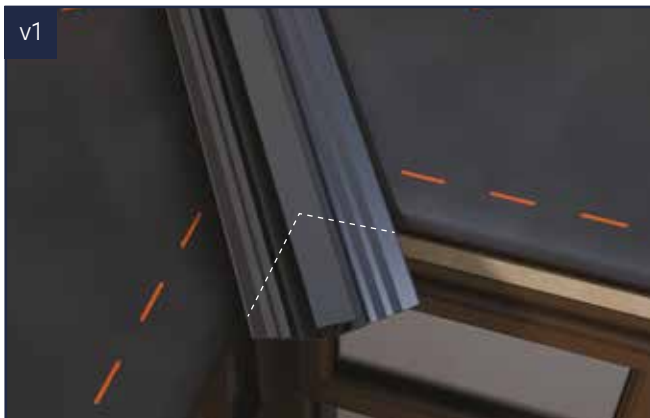


NOTE: more details to come.



Solid Roof System

Valley Gutters

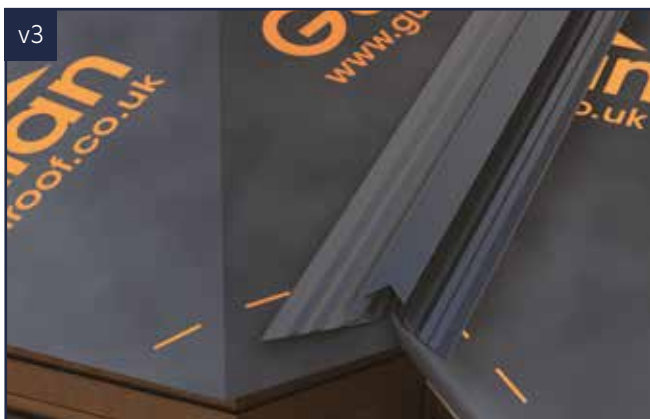


v1 Offer up the valley gutter and mark on where to trim for the roof corner.



v2 Valley flashing supplied in fixed lengths, to be cut on site prior to fixing.

Apply silicone to underside of valley on both sides.



v3 Place valley tray on top of breather membrane within the valley itself.



v4 Fix the valley flashing using self-tapping screws.



Run a bead of silicone down both edges of the valley to dam against the membrane.



Ensure the edges of the tile are sealed with silicone.



Tile into valley cutting at angle of roof.
Seal where necessary.

Solid Roof System

Lean To

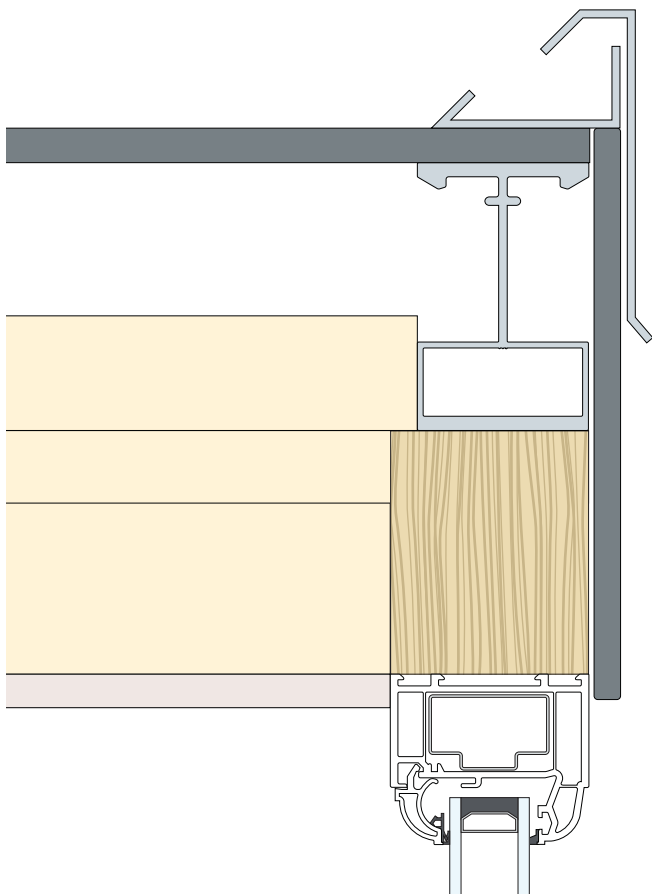
Wall plate to be fixed 100 mm from either side at minimum 200 mm centres. Please ensure you use suitable fixings determined by the wall construction.

Ensure reinforced coupler is used when joining new angle frame to existing windows.

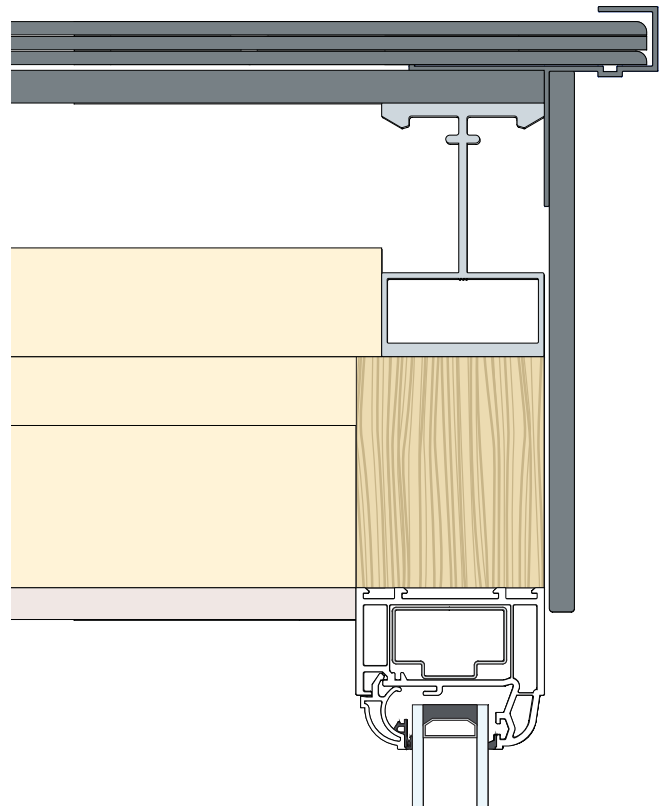


Gable End Options

Barge Cover (Metrotile Installation)



Guardian Easy Verge (Slate Tile Installation)





Lined writing area consisting of 20 horizontal lines.



Home improvement solutions from



www.guardianbuildingsystems.co.uk
customerservices@guardianbuildingsystems.co.uk
0800 066 5832
Units 2-3 Dunstall Park Road, Derby DE24 8HJ



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