



Installation Guide

Guardian Warm Roof
Conservatory Conversion System

England, Scotland & Wales



Introduction

Conservatory walls consist largely of glazed elements including windows and doors that may include structural mullions or may be strengthened with internal structural reinforcement inside hollow sections. Modern conservatories are likely to be marked in accordance with BS EN 14351-1:2006 + A1:2010.

The Guardian Roof System is designed to be of similar weight to a glass roof of equal size, so it follows that the existing glazed walls, if correctly specified for the original glazed roof, should be capable of supporting the replacement Guardian Roof System.

It is the sole responsibility of the installer to establish the structural suitability of the existing conservatory wall system, to establish the location of any structural or reinforcing elements, and to ensure that the Guardian Roof System is fixed to the existing structural elements so that gravity and wind loads are transferred safely through the existing walls to the conservatory foundations.

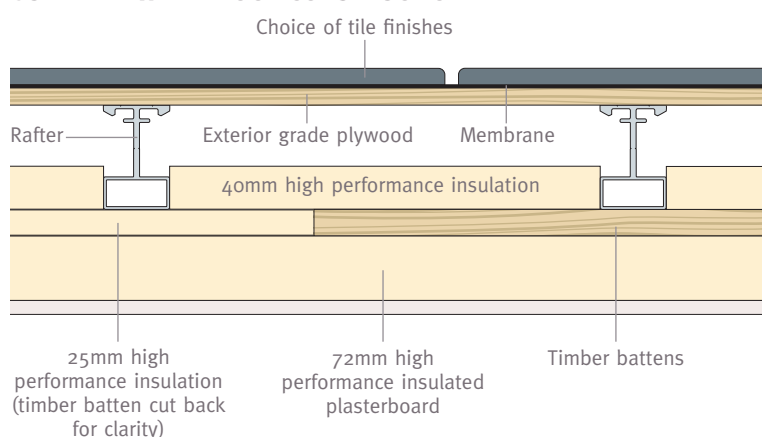
The following guide has been created to assist in the fabrication and installation of the Guardian Roof. Please note that each roof is individual and will be fabricated to suit various shapes and sizes.

Your fabricator will be available to provide installation technical support and will include a roof layout plan and an installation guide with each roof.

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GUARDIAN WARM ROOF CONSTRUCTION




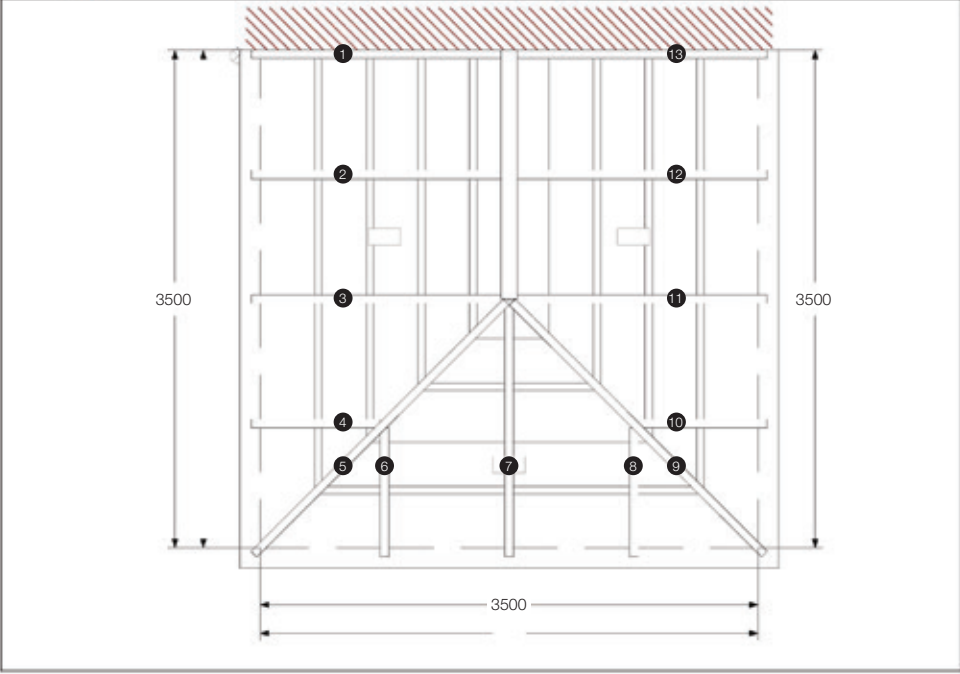
Roof Layout Plan

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.



GUARDIAN ORDER CONFIRMATION





Please check the specification and dimensions shown herewith with care and confirm your acceptance by signing here

SIGNED:

If you are unsure of any details appearing herewith please query your supplier at the contact details shown opposite.

All dimensions relating to perimeter are to internal face of supporting frames or face of host building unless otherwise stated.


The support structure for this roof must provide the necessary lateral and axial stability in accordance with the relevant British Standards. Guidance if required should be sought from your frame supplier.

Tel: Fax:
Email:

ORDER DETAILS

Job No: 16
Reference:
Draughts Person:
Processed Date: 17, April, 2015
Site Postcode:
Client:

Shingle Colour: Metrotile Shingle Charcoal
Eaves Beam Colour: White
Gutter Colour: White
Poles: Telescopic Pole
Ridge Height: 971mm
Pitch: 25.0°



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

Tools Required

Cordless drill



Angle grinder



Silicone gun



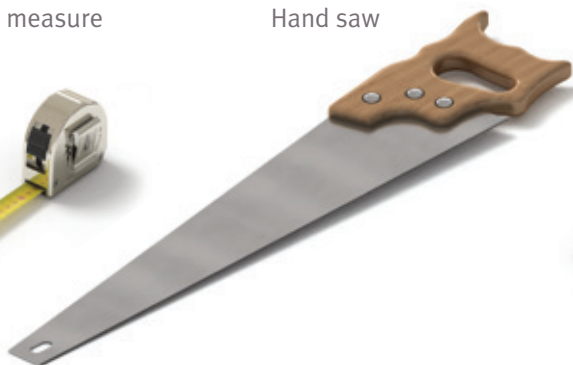
Foam gun



Tape measure



Hand saw



10mm spanner and
10mm nut spanner



10mm ratchet



Snips



Staple gun



Screwdriver



Spirit level



Components



Ringbeam

Lean-to beam

Ridge beam

Rafter

Edwardian hip

Victorian hip

Haunch

Box gutter



Large spider arm



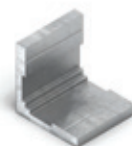
Small spider arm



Jack rafter left hand bracket



Jack rafter right hand bracket



90° ringbeam cleat



136° ringbeam cleat



Splay left hand bracket



Splay right hand bracket



Edwardian left hand bracket



Edwardian right hand bracket



Guardian aluminium bracket



Victorian bracket



Spider



Spider fixing pin



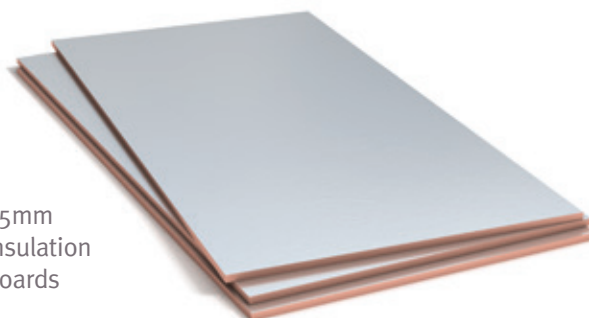
Timber packer



Membrane



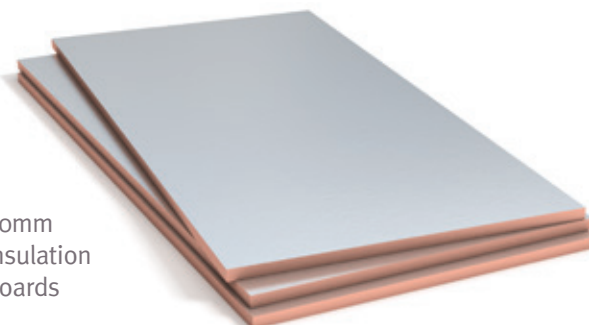
Timber battens



25mm
insulation
boards



Plywood



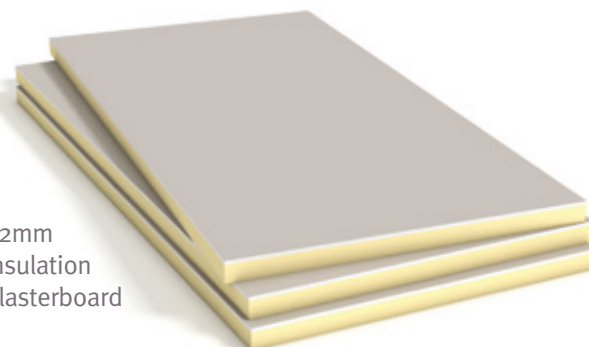
40mm
insulation
boards



Insulated foam tape



Polystyrene packer



72mm
insulation
plasterboard



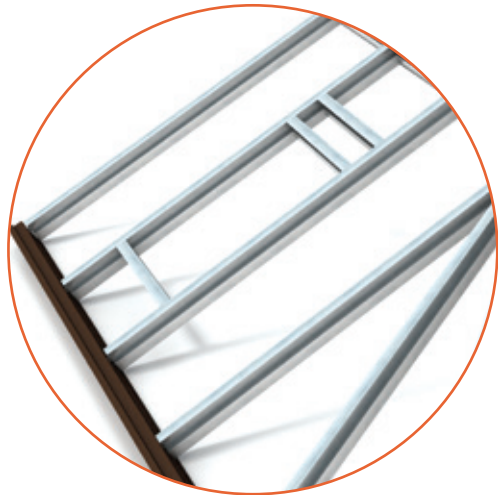
Gutter, gutter
clips and
downpipe

Overview

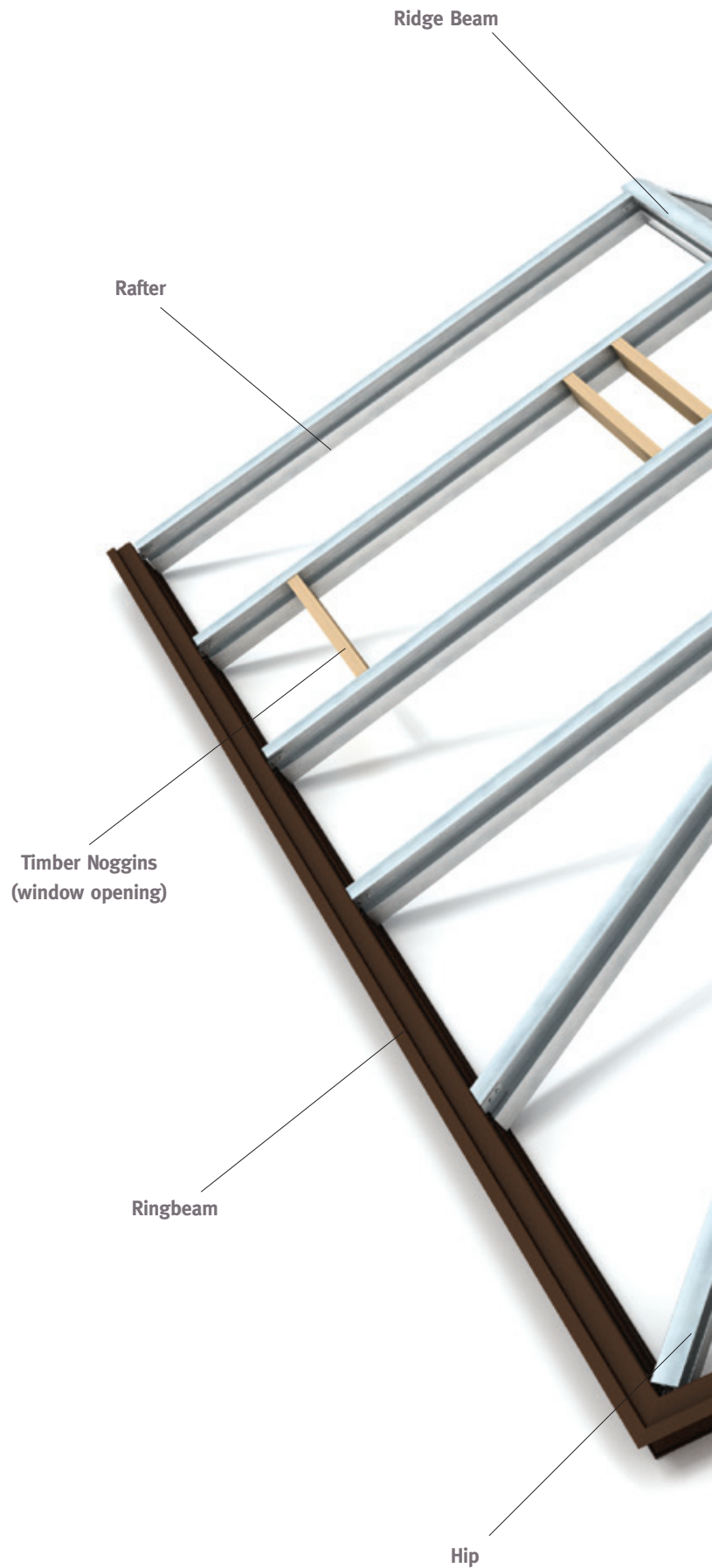
All components for the Guardian Roof are delivered to site in pre-cut sections.

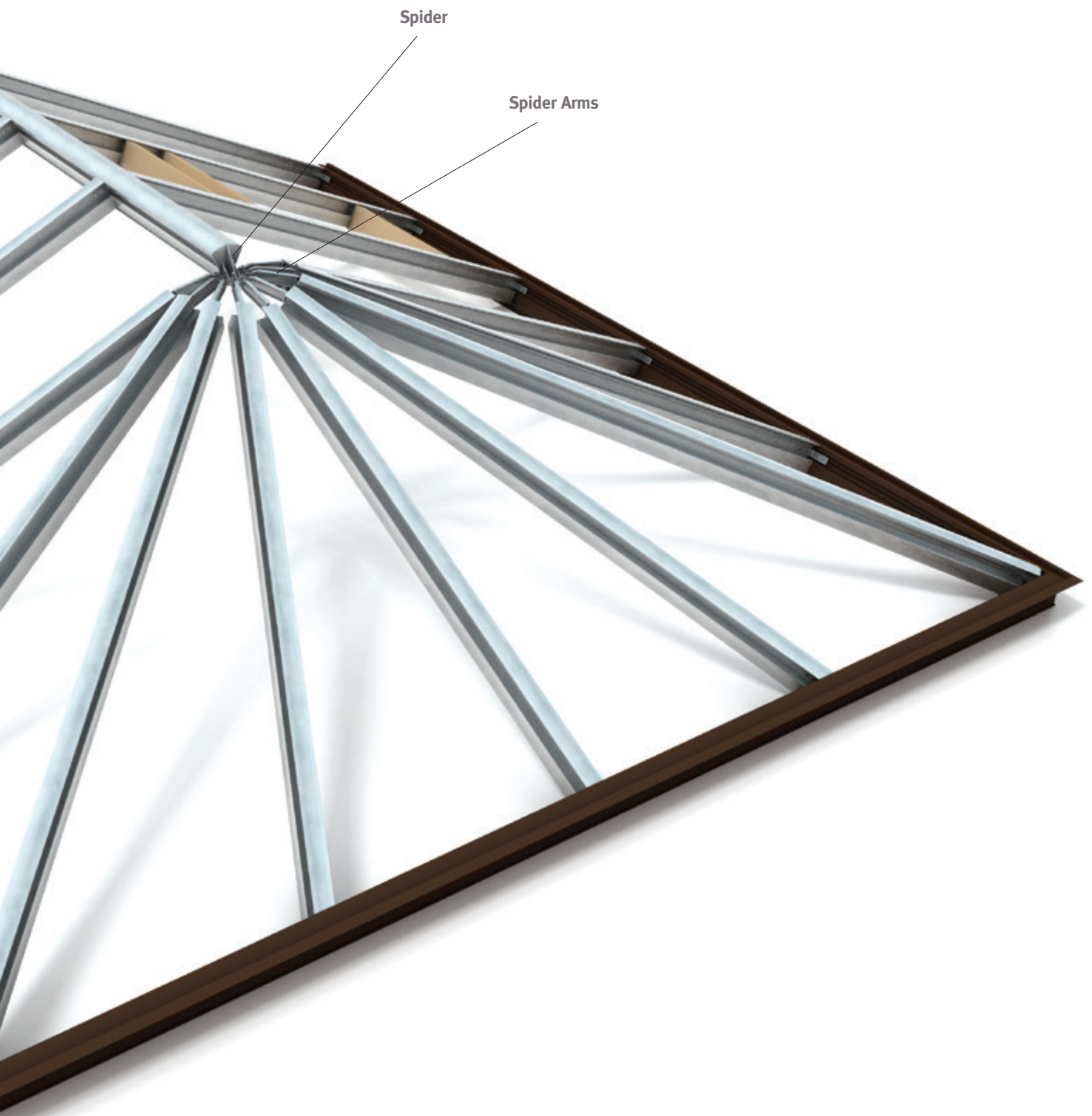
The Roof Layout Plan will also be included in the delivery and all components will have corresponding numbers to the plan.

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.





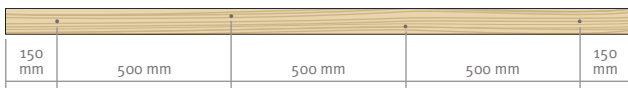
Step 1 – Ringbeam

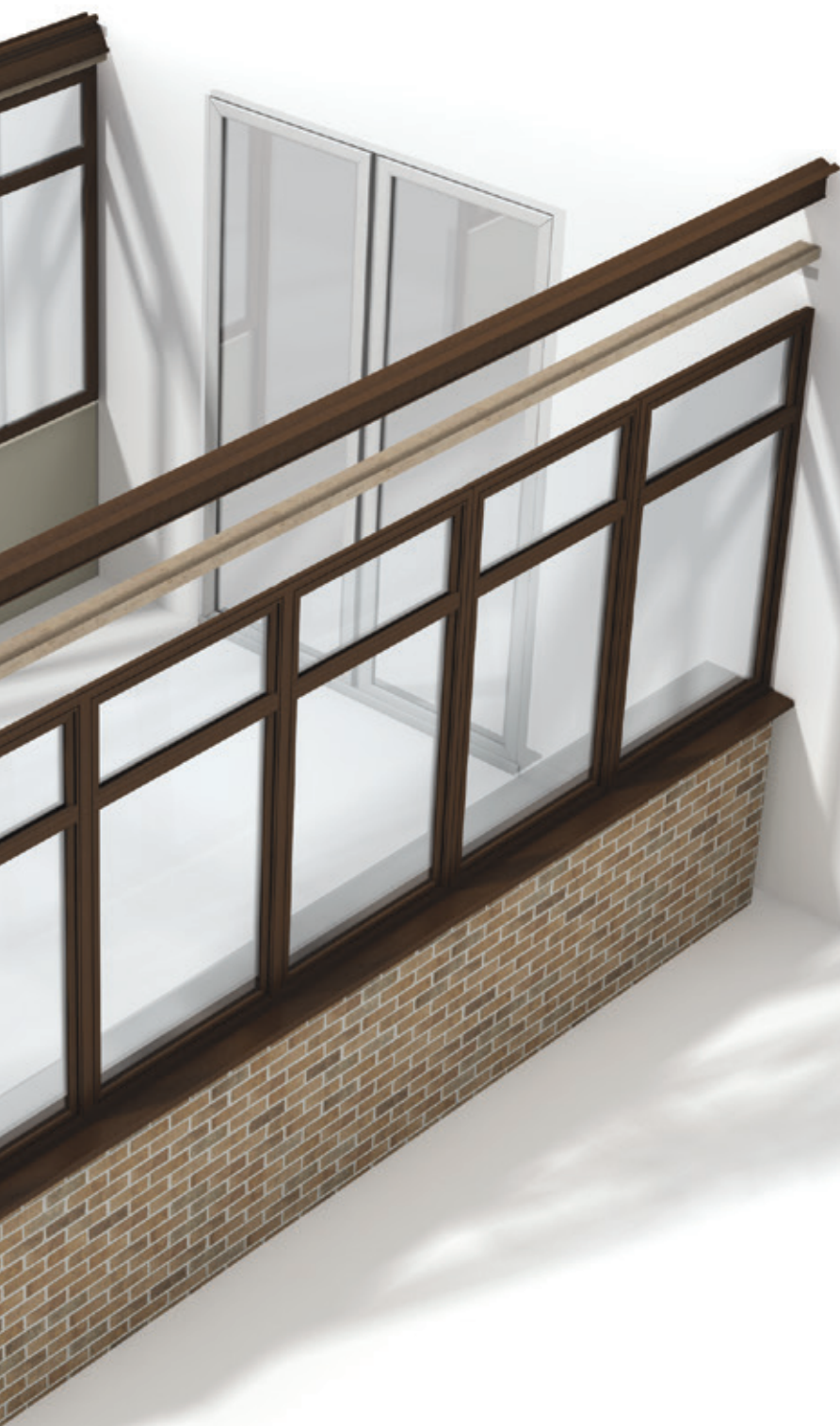


Silicone seal 70x60mm timber packer to windows using low module silicone



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





Bed ringbeam down on timber packer using low module silicone.

Fix ringbeam to timber packer at no more than 100mm from either end then at 500mm centres – using fixings supplied.



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

Step 2 – Assemble Rafters

Use adjustable steel props to achieve ridge height

Ridge height will be noted on drawings provided.

Gable rafters to be bolted to house wall and secured at no more than 300mm 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



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.



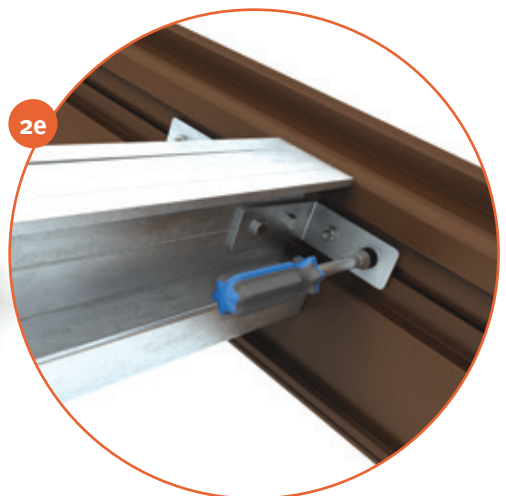
Loosely fit back rafters and front hips making sure locating pins are in place to temporarily fix arm to spider.



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



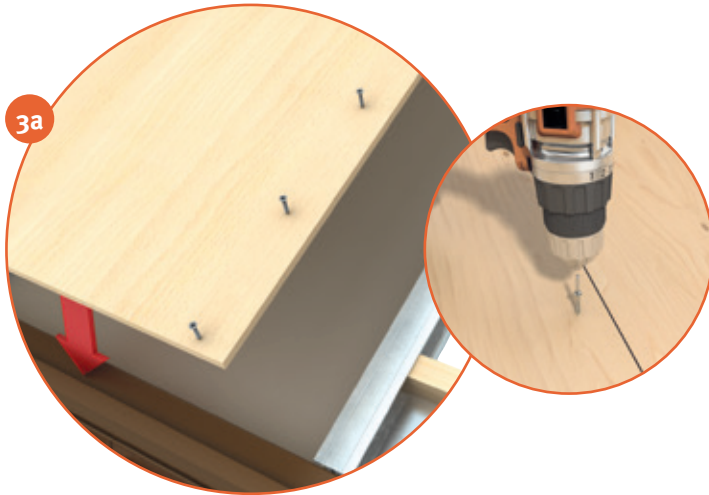
Infill between the wall rafter and hips with intermediate rafters (including any pre-engineered window framing) loosely tighten at this stage.



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.

Step 3 – Exterior Plywood and Window Frame



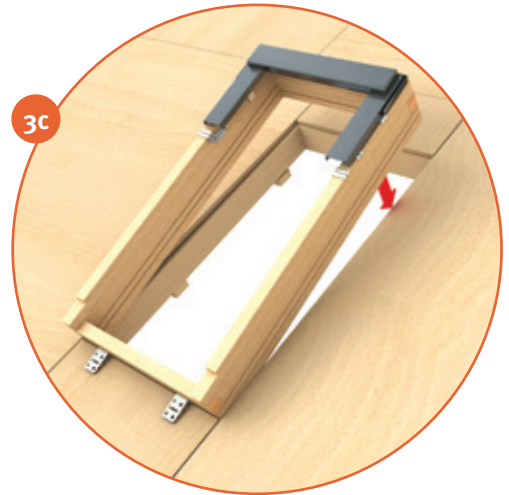
Fix timber sheets to rafters as per roof schedule. Ply sheets to be fixed at no more than 200mm centres using 4.8mm x 38mm self-tapping fasteners (drill pilot holes).



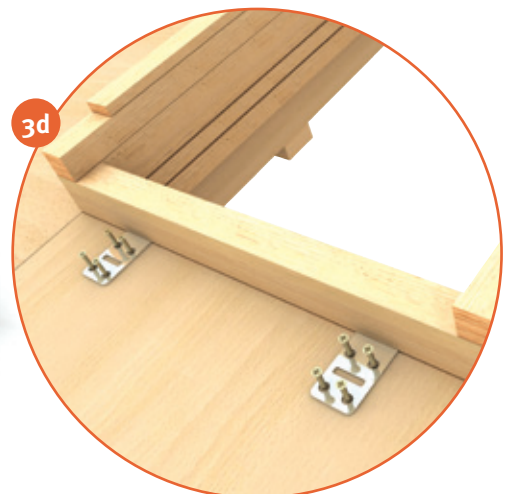
Structural opening delivered to site in timber or aluminium.

Fix brackets to the roof window frame prior to installation.





Install roof window frame into pre-formed opening within rafters.



Fix frame to timber ply through brackets using screws supplied within roof window pack.

Step 4 – Membrane and Tiling



Cover with vapour permeable underlay with a vapour resistance of less than 0.25MNs / gram as required by BS5250: 2002. Overlap all joints of underlay by 150mm and staple down to timber sheets. Over run ringbeams by 100mm and up house wall by 60mm.

Turn underlay up at the roof window frame and staple to topside.

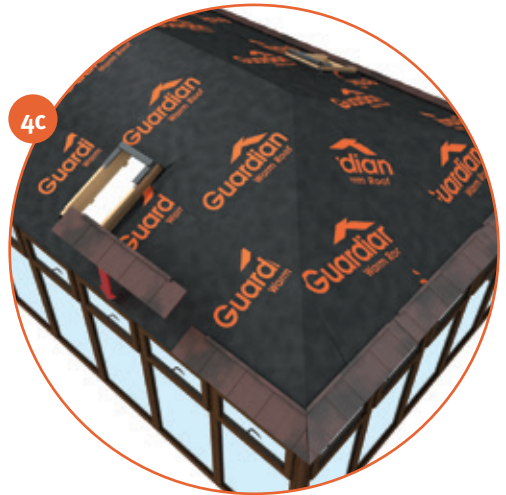
Roofing membrane must be laid from the bottom up with the overlap always to the outside as you come down the roof. This also should be done at hip points.



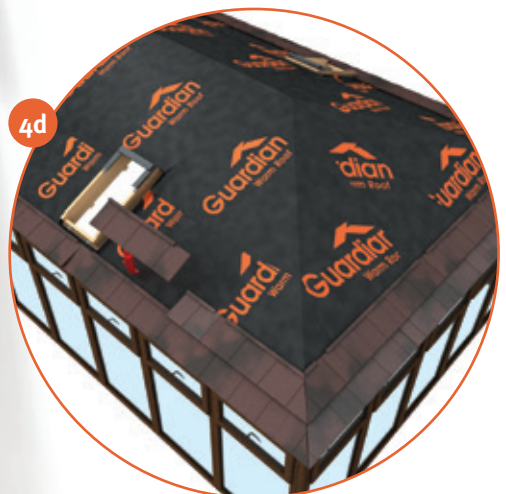
Place watercourse / soaker against house wall.

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 300mm centres into top lip of tile.



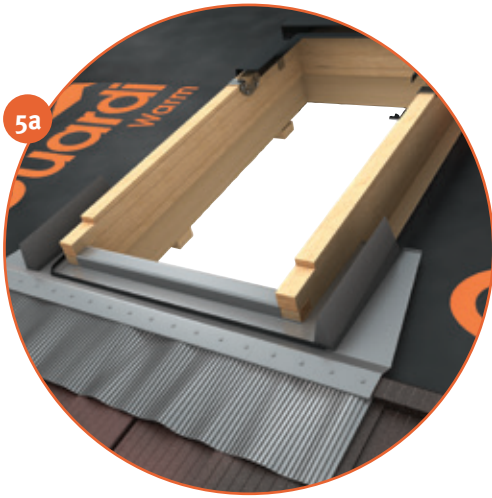


All tiling is from right to left.
Complete one row at a time.
For the second course always start
with half a tile.



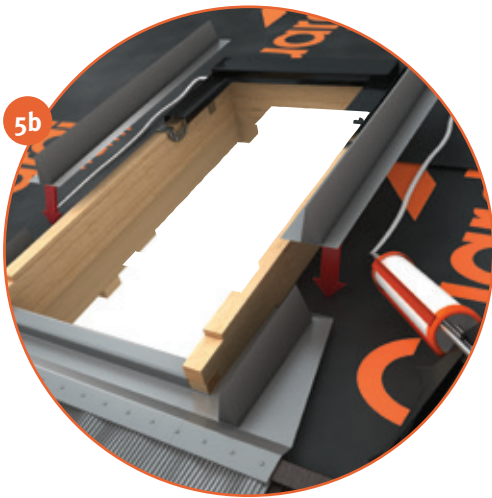
Dependant on height of roof window 1-3
tiles should be fitted below window before
bottom flashing is installed.

Step 5 – Roof Window



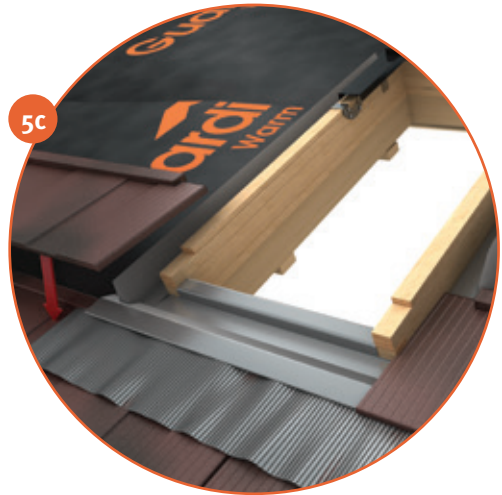
Roof windows should be installed with a compatible slate flashing kit.

Always refer to window manufacturers installation guide for specific fixing detail as these may vary.



Roof window flashings should be sealed to the breather membrane with low module silicone.



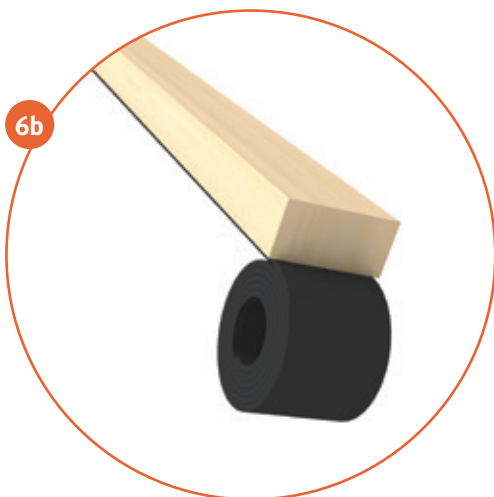


It is also advisable to run a line of sealant on top of the flashing and under the tiles on the sides and the top to prevent blowback.

Step 6 – Ridge and Endcap



Using the crown ridge and end cap positions as your starter – dry fit battens and ridge profiles to mark out locations.



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



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



Follow instructions 8a to 8c for end capping. Fix rafter cap over delta ridge profile at verge.

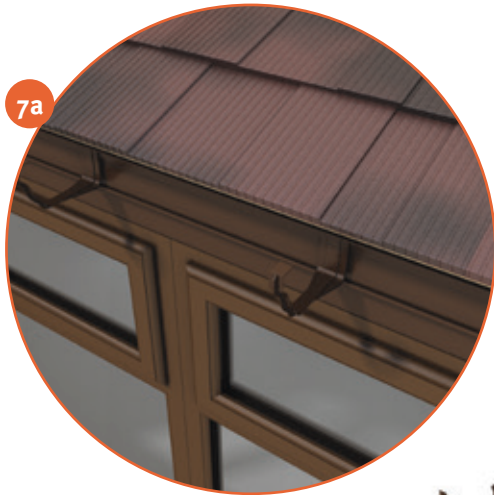


Use low module silicone between the back edge of the roof batten and tile.



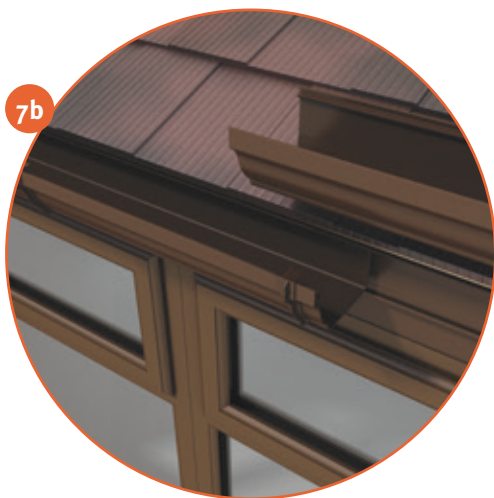
Position delta ridge over batten and fix side on. Use touch up kit provided to hide screw heads.

Step 7 – Gutters



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

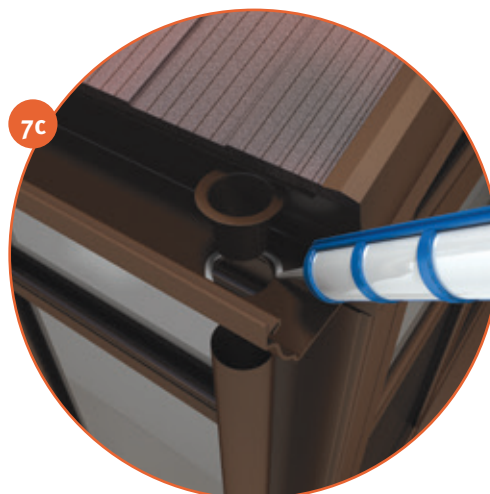
Starting point at ends and corners to be no more than 120mm from the corner / end and all intermediate brackets at no more than 500mm centres.



Install gutter ensuring all ancillary joins / 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 module silicone. Install downpipe.



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

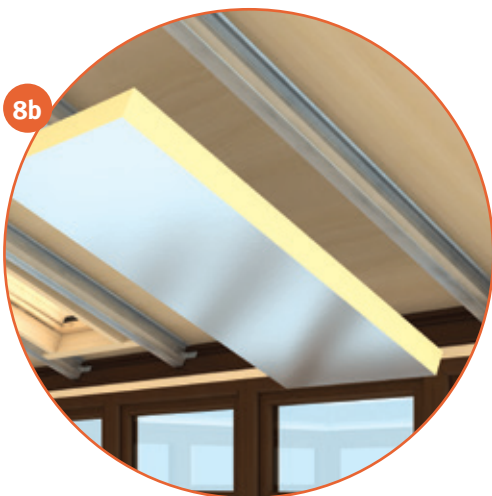
Run a bead of low module silicone sealant along the bottom of the trim to the top of the window.

Step 8 – Insulation



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

All insulation used must have a foiled back covering



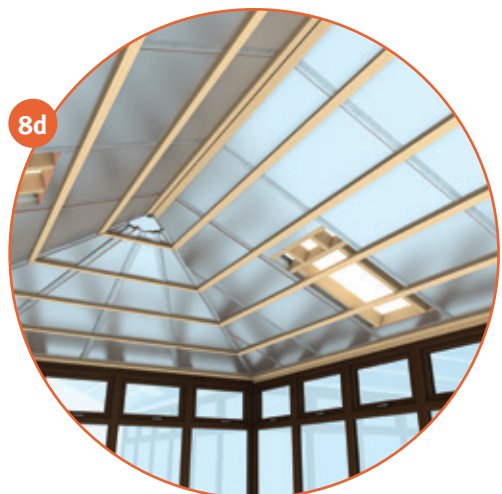
Fix 40mm insulation board between rafters. The 40mm insulation board should sit flush with the underside of the rafter.





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

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

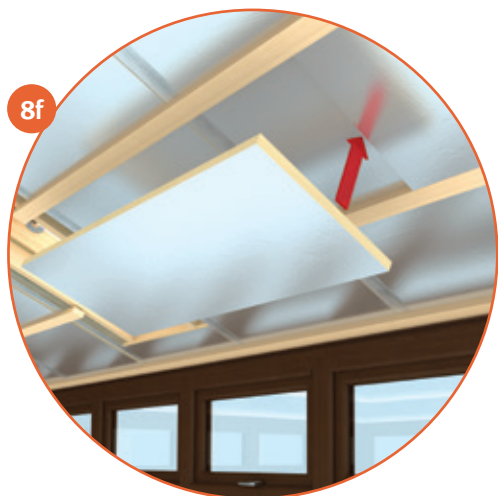


Batten out entire roof structure. Batten over window opening and cut back to suit.

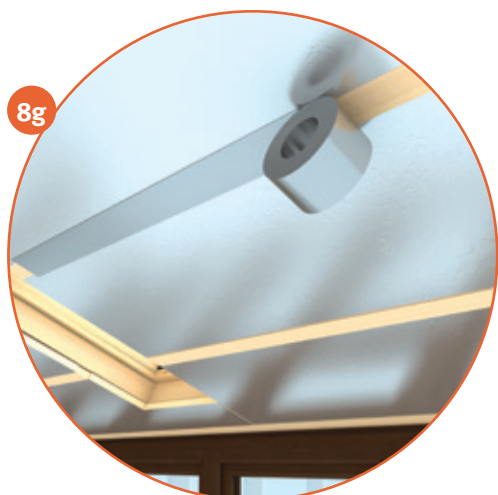


Please ensure under slated ridge is double battened.

Step 8 – Insulation



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



75mm 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.





Fit colour matched cloaking trim to cover inside of timber.



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

Lean To

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

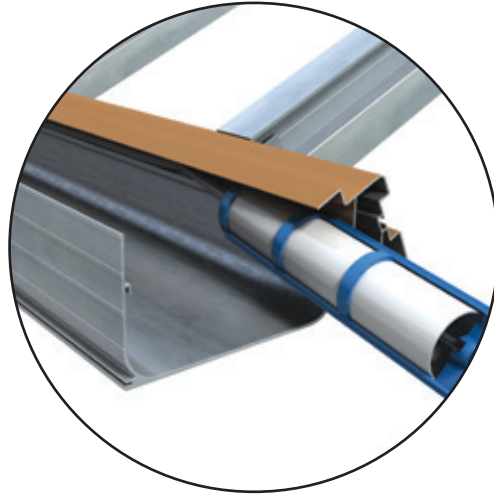
Ensure re-inforced coupler is used when joining new angle frame to existing windows.



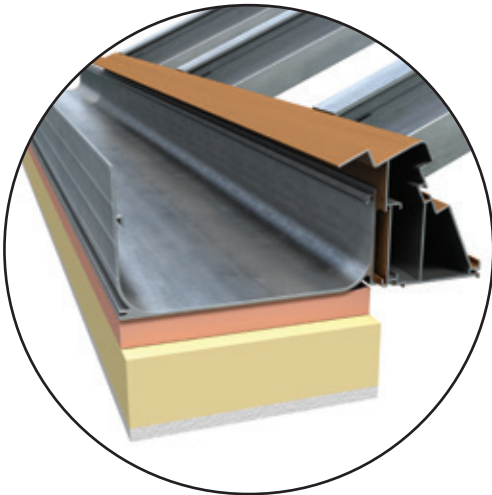
Box Gutters



Please ensure you use suitable fixings determined by the wall construction.



Seal between ringbeam and box gutter with appropriate sealer. Also seal against house wall.



Continue 25mm and 75mm insulation board under Box Gutter for insulating value and to avoid the risk of condensation.

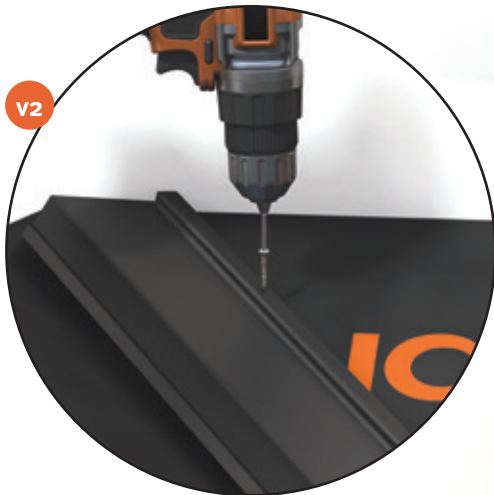
Valley Gutters



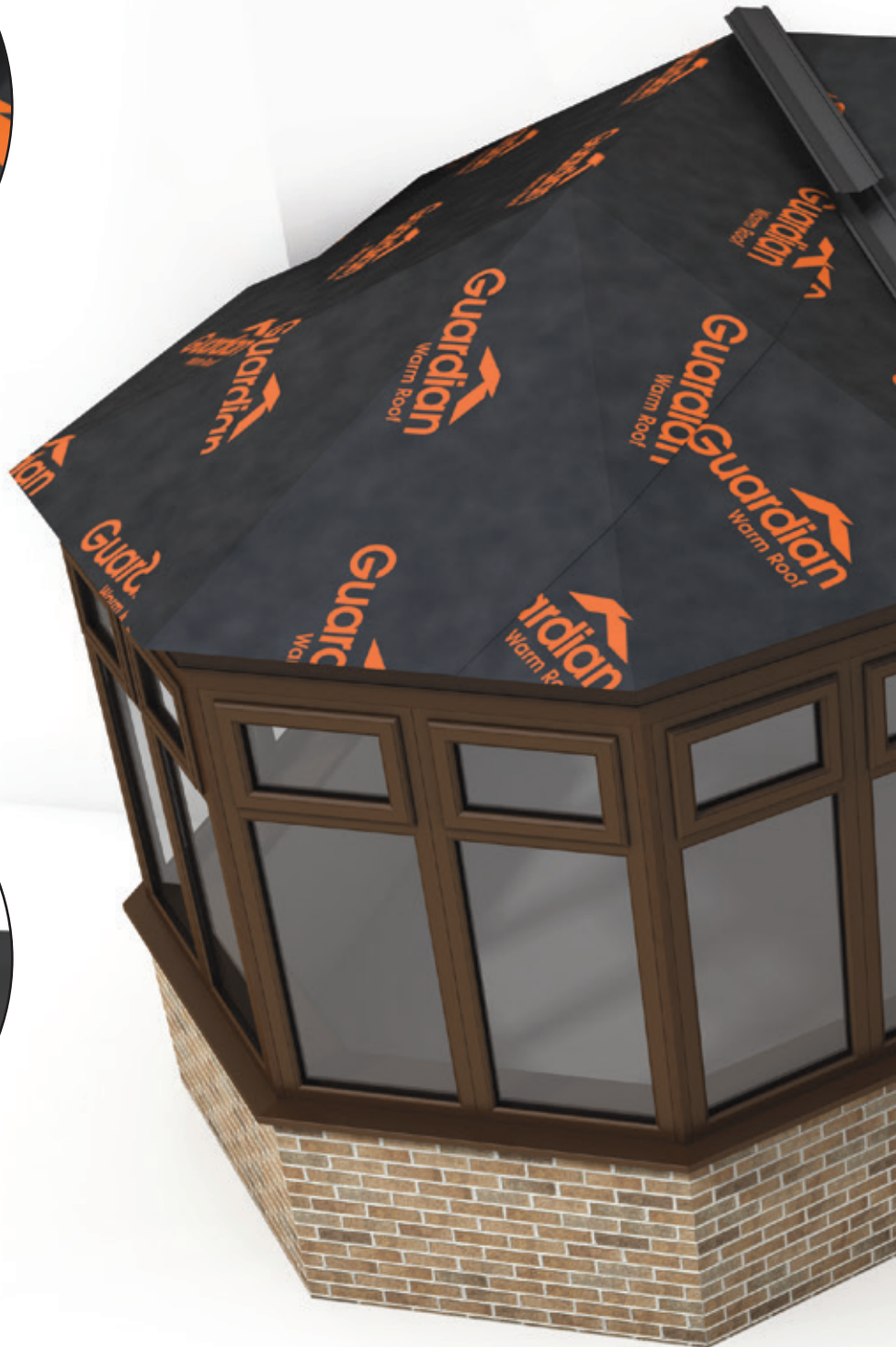
Valley flashing supplied in fixed lengths, to be cut on site.

Apply expandable foam tape to underside of valley.

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



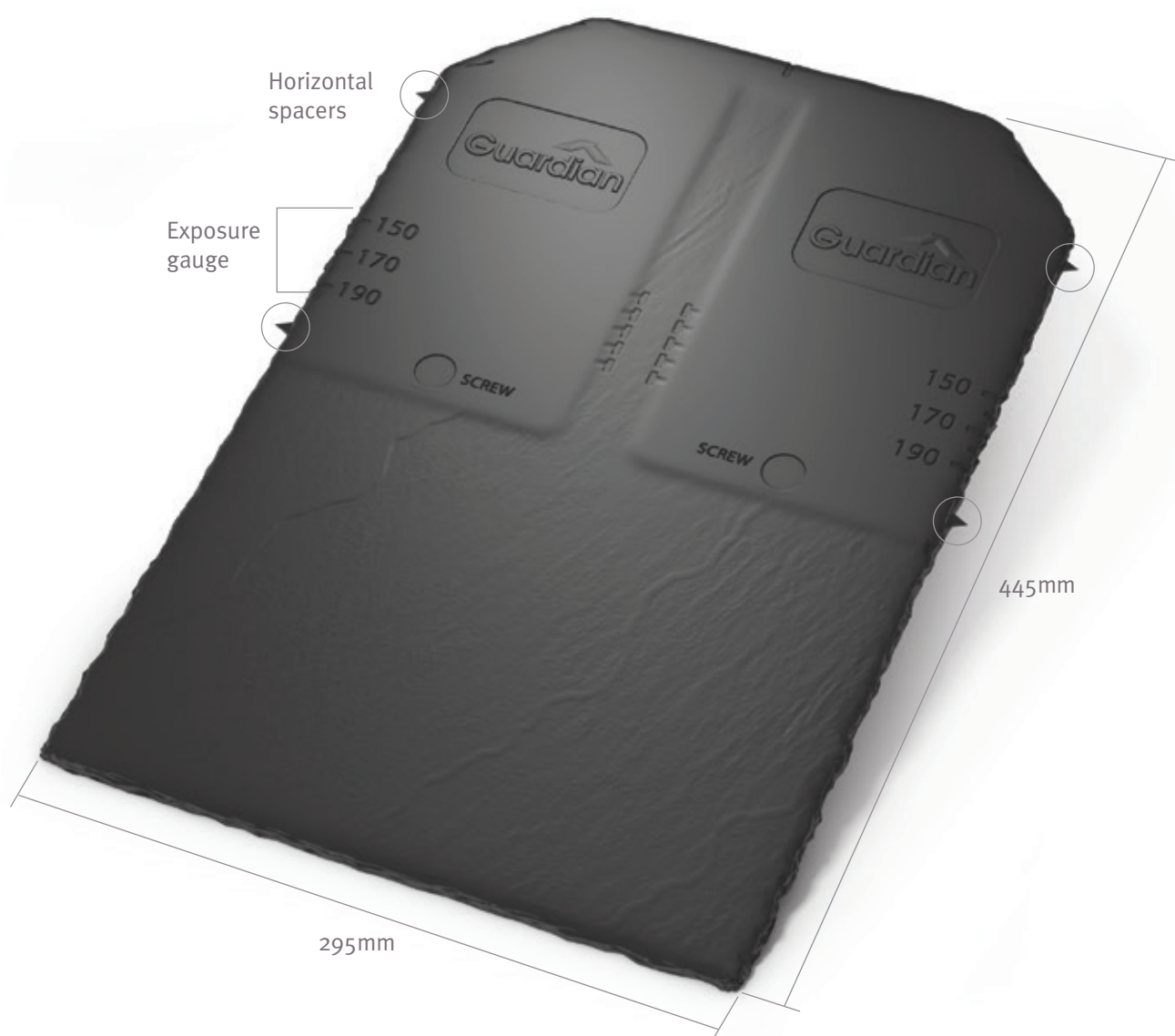
Fix the valley flashing using self-tapping screws





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

Guardian Slate Tile



Roof Pitch (fully boarded)	Gauge	Slates per m ²
14* to 22.5 degrees	152mm	22
22.5 to 25 degrees	152mm	22
25 to 27.5 degrees	165mm	20
27.5 to 30 degrees	178mm	19
Above 30 degrees	191mm	18

* The minimum recommended pitch and lap may be influenced by special circumstances, please contact us for more information.

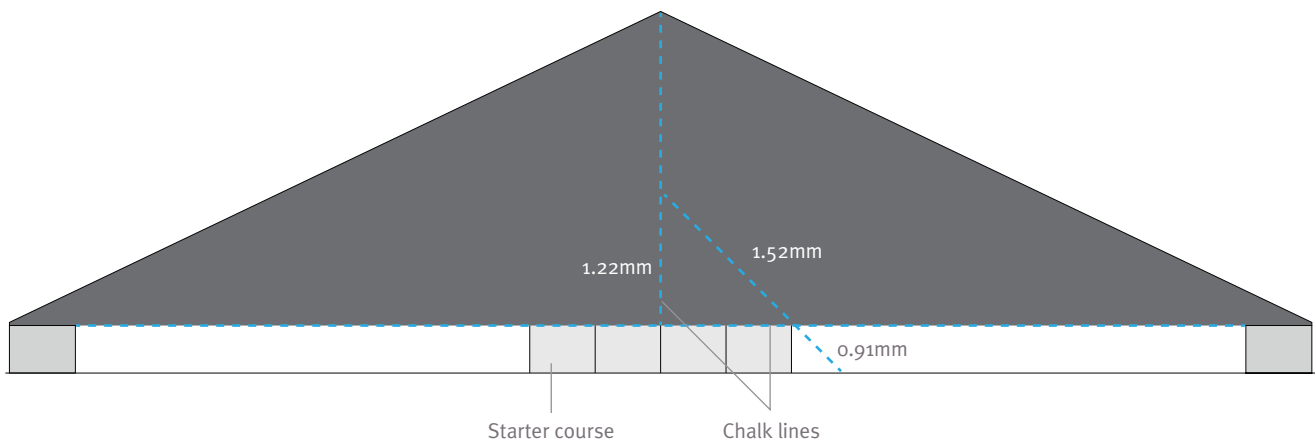
Note of caution: the slates can be slippery under certain conditions and job site safety procedures should be enforced.

ROOF LAYOUT

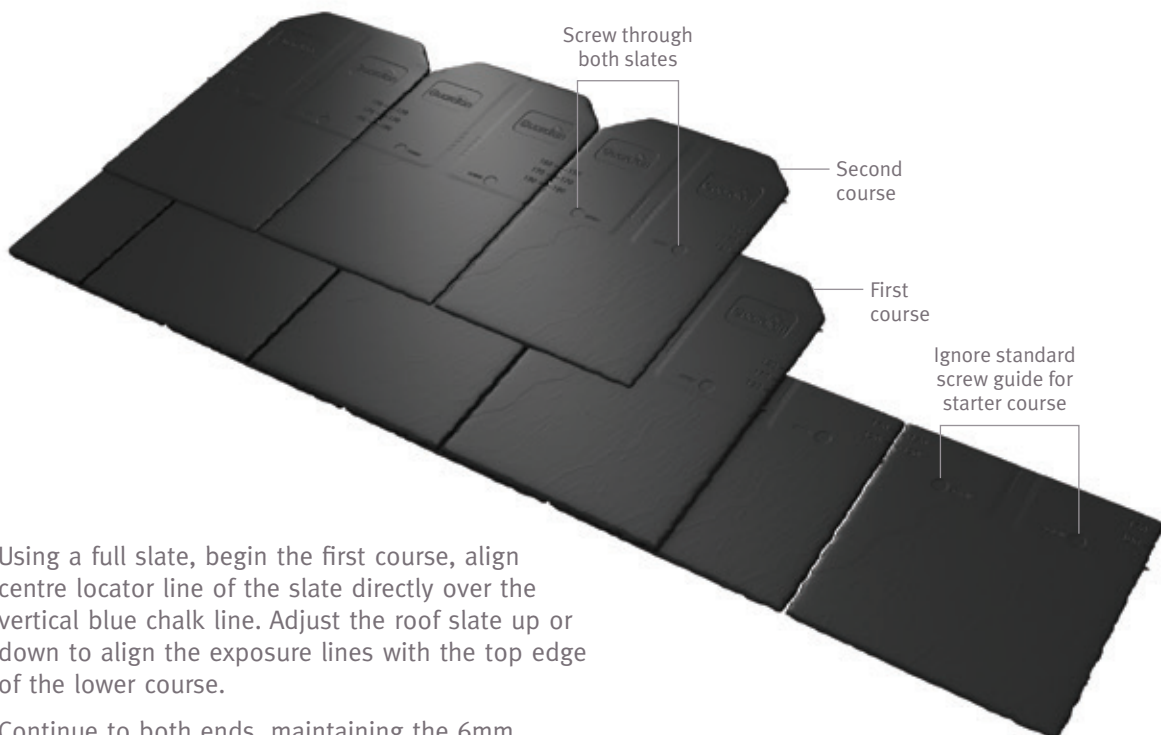
1. The starting point may be from the left side, right side or centre of the area to be installed.
6mm spacer tabs are provided on every roof slate.
2. To create an eaves or starter slate, cut a full slate into $\frac{3}{4}$ size.
3. Locate the centre of the roof area to be covered.

From either end, position starter pieces and draw a horizontal line from the top of the starters between these two points. Next draw a vertical perpendicular line. This can be done easily by marking 0.91m along the eave, then where 1.22m and 1.52m intersect will form a perpendicular line.

As long as the ratio 3:4:5 stays the same this will hold true, for example, 21:28:35.



4. Begin by placing an eaves slate on the right and left side of the vertical line maintaining a 6mm spacing and continue to both ends overhang the eaves by a maximum of 50mm.



5. Using a full slate, begin the first course, align centre locator line of the slate directly over the vertical blue chalk line. Adjust the roof slate up or down to align the exposure lines with the top edge of the lower course.

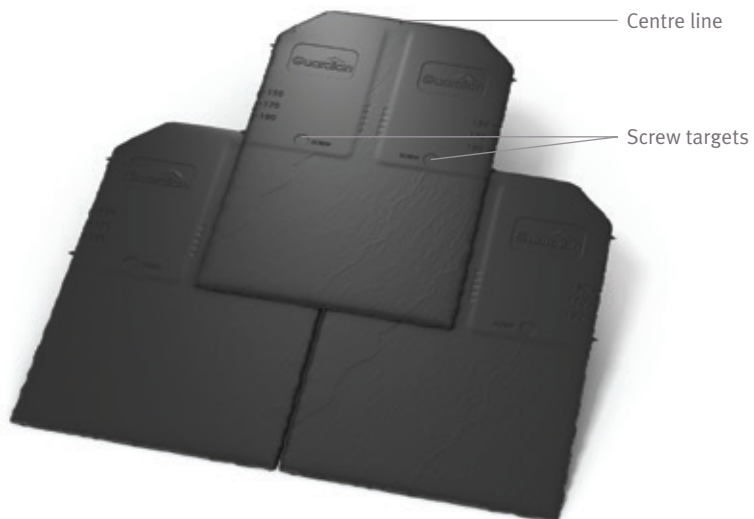
Continue to both ends, maintaining the 6mm spacing between slates.

Guardian Slate Tile

6. Fasten each Guardian Slate with two 30mm x 4mm head stainless steel screws.

The fasteners should be placed within the two screw targets on each slate and must penetrate the boarding by at least 12mm.

7. Continue subsequent courses with a full standard slate, the finished edge facing the gable edge.



ANGLED RIDGE CAP FINISHING

Guardian ridge caps should be finished by cutting a standard slate at the end of the ridge into a triangle or diamond shape of the right size to cover the end gap.

The resulting material should then be screwed in place into the truss. Alternatively, the material can be joined to the ridge cap by using a strong epoxy glue (adhering to the manufacturers instructions).

The end piece can be sealed by using a good quality silicon sealant.

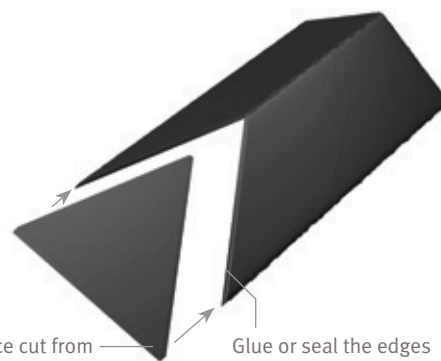
Screw heads should be disguised with coloured sealant / paint.



Cut a standard slate to correct length and angle



Measure correct length and angle

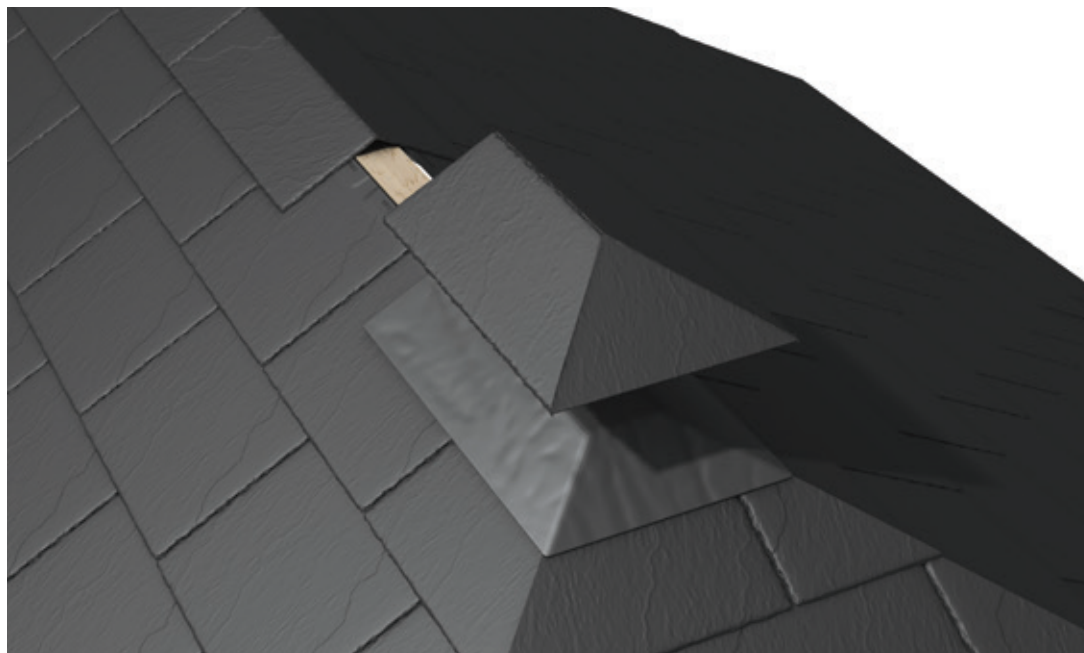


End piece cut from standard slate

Glue or seal the edges

RIDGE-TO-HIP INTERSECTION

Where the ridge tile meets hip tiles a lead saddle should be fitted to cover the intersection.





Guardian Roofs

FREE Phone: 0800 0665832 Email: info@guardianroof.co.uk

www.guardianroof.co.uk