

ARMoured SLATE

INSTALLATION GUIDE

ADVANTAGES

Quick and easy to install
As low as 10° pitch
50% less slate required
Lightweight at only 15.4 kg / m²
Fire Rated
High performance
20% less batten

ACCREDITIATION

Building Research Establishment (BRE)

Weather resistance tested:

Wind driven rain test to PD CEN/TR
15601:2012 18th May 2021

Fire rated: B_{ROOF}(t4) classification to BS
EN 13501-5

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SITE SAFETY

- ! In all cases ensure a safe working environment. Site health and safety measures must be properly adhered to.
- ☑ Ensure a safe working at height platform is established prior to commencing work.
- ☑ Personal protective equipment must always be worn.
- ☑ Consideration should always be given when using the ArmouredSlate in weather conditions where the wind might lift the product into the air or destabilise the

STORAGE

The ArmouredSlate is lightweight and must be stored flat and out of direct sunlight. ArmouredSlate must be secured to a stable area or platform or where it cannot be blown into the air by strong winds. Natural slates are very heavy when palletised and must be stored on a flat, even surface to avoid toppling over.



INSTALLATION OVERVIEW

Single lap slate system designed for installation on standard 50mm x 25mm roofing battens in the open roofing method.

If installing ArmouredSlate 'P' on a close boarded roof, please follow the alternative fitting instructions specifically for close boarded applications.

Ensure

- The ArmouredSlate GRP plate is a waterproofing system therefore, all gaps and holes must be properly sealed using a polyurethane mastic or ArmouredFlashing.
- Ensure you meet the requirements for roof space ventilation and the roof is correctly ventilated.
- Install in accordance with BS 5534.
- Store all materials correctly.
- Ensure safe working practice at all times.

Fixing

- We recommend that the slates are fixed using 80mm 316 grade stainless steel spiked slate hooks. Slates must be double fixed at the periphery, eaves, verge and ridge by also using SlateFix screws in addition to slate hooks.

Two SlateFix screws must always be used when fixing at the head.

- In the event that the toe of the slate requires additional fixings where hooks are not suitable (such as the hip or starter course) then a copper disc rivet can be placed through the ArmouredSlate plate, through the slate and bent over to secure.

PROCESS OVERVIEW

1. Establish the ventilation requirements of the roof.
2. Install an eaves protection system (EPS).
3. Install a roofing membrane over the rafters.
4. Gauge and install the roofing battens in the usual way at 250mm +/-10mm.
5. Install the Mayan ridge/hip runner brackets and batten if required.
6. Install the first course of ArmouredSlate and ensure all lap joints are fully adhered.
7. Install the first course of slates and twice fix at the head using 2 x SlateFix screws.
8. Punch or drill a hole in the starter slates and ArmouredSlate and install a disc rivet if required.
9. Install slate hooks between each slate at the head.
10. Cut slates or peripheral slates must be twice fixed.
11. Continue to cover the whole roof to completion.
12. Install RealRidge. Please follow the installation guide for your chosen ridge product.

REQUIREMENTS

The Mayan ArmouredSlate roofing system must be installed in accordance with this installation guide using only high quality Mayan Roofing Systems products, including self-adhesive ArmouredFlashing and all fixtures and fittings provided.



- The Mayan ArmouredSlate roofing system allows natural slates to be installed in the single lap format (in a similar way tiles are installed) therefore eaves or ridge cut slates are not required. However, because the slates should be installed in the broken bond format (staggered vertical joints) the wider slate and halves must be used at the verge and in the valley and hips to avoid the use of slates smaller than 150mm in width.
- All of the slates at the periphery (2 courses of exposed slates on the roof's outer edges) of the roof should be twice fixed using slate hooks or copper disc rivets at the foot of the slate and twice fixed with the SlateFix screws at the head of the slate.

Roof Ventilation

- The roof ventilation requirements should be established prior to the commencement of works and the fascia height set accordingly. Guidance on roof ventilation should always be sought from the appropriate roof designer/architect. When used in conjunction with a vapour permeable roofing membrane, the area above the membrane and below the ArmouredSlate should be properly ventilated at the eaves and at the ridge.

Eaves

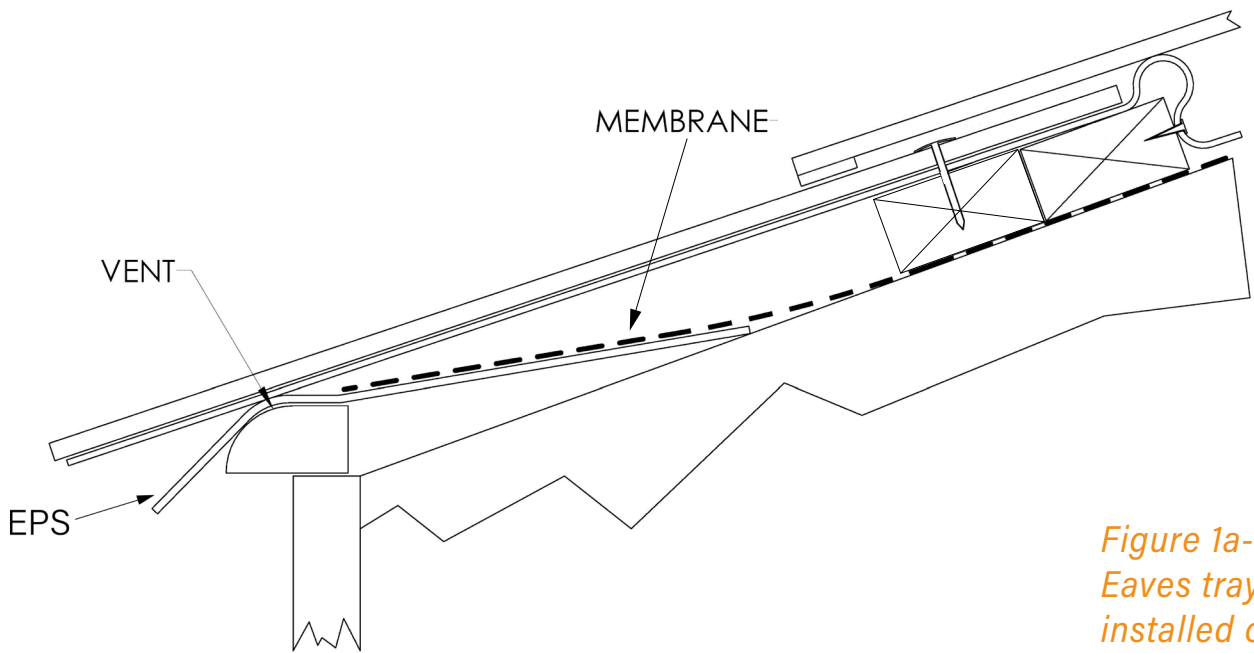
- When installing roofing products at a roof pitch below 17.5° degrees the eaves tray cannot be allowed to rise upwards as it sits over the fascia as this creates 'ponding' of any water that might run down the outer layer of the roofing membrane. Any water on the roof or membrane must flow to the guttering.

FULL INSTALLATION INSTRUCTIONS

EAVES ABOVE 17.5°

Because the first course of slates does not rest on a lower course of slates, the highest point of the fascia board or vent should be 7mm higher than the top of the battens so that the toe of the slates do not 'tip forward'. An even line of the slates should be maintained over the whole roof; the toe of the slates should not point downwards.

When installing a roof above 17.5 degrees the eaves protection system (EPS) or eaves tray should be installed in the usual manner, on top of the fascia or over fascia vent (OFV).



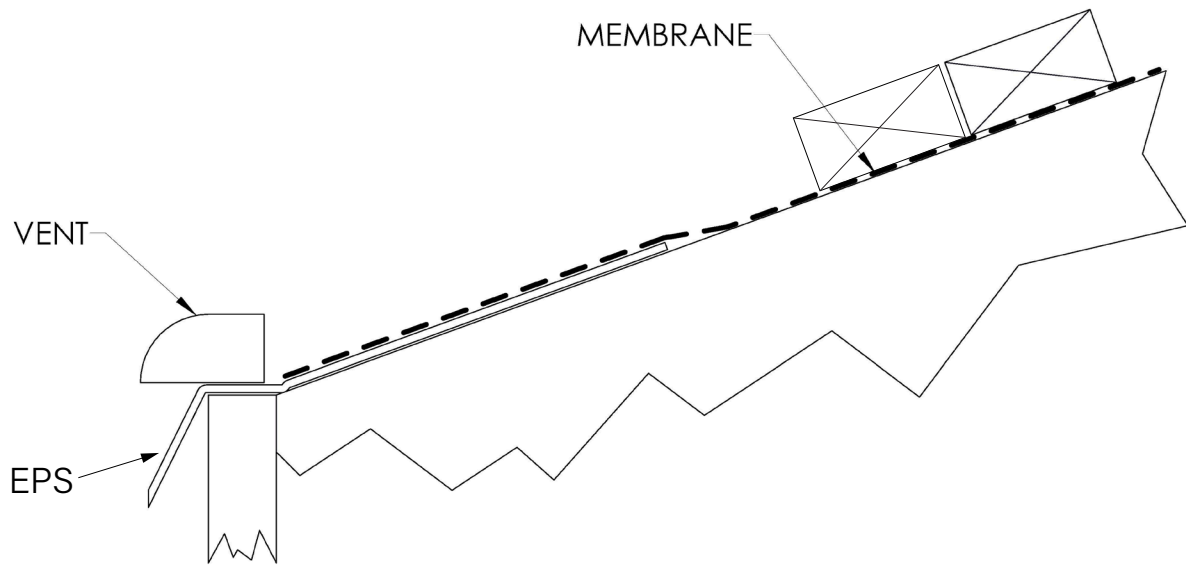
*Figure 1a-
Eaves tray
installed on a
roof above 17.5°*



FULL INSTALLATION INSTRUCTIONS

EAVES BELOW 17.5°

When installing a roof below 17.5° the inside edge of the fascia or vent should be level with the top of the batten. An eaves tray (EPS) should be installed directly onto the rafter. An over fascia vent of a continuous 10mm ventilation is then fitted directly on top of the front edge of the EPS and secured into position by screwing through the vent and EPS into the fascia board.



*Figure 1b-
Eaves tray
installed on a
roof below 17.5°*

EAVES PROTECTION SYSTEM

Securely fix through the top section of the EPS into position on the rafters. Lengths of the EPS/starter trim should be lap joined on top of a supporting rafter. Apply the double-sided tape along the lower edge of the EPS.

MEMBRANE

ArmouredSlate can be used with a non-breathable membrane. Breathable membranes require ventilation at the eaves and ridge.

Unroll the roofing membrane over the rafters for the width of the roof. The membrane should be pulled into position and released prior to fixing so that the membrane is sufficiently draped across the rafters, allowing for a 10mm gap beneath the batten to ensure adequate water run off.



Position the lower edge along the line of the fascia and on top of the double-sided tape on the EPS, remove the tape

When installing the valley, a runner strip of membrane should be first dressed up the line of the valley and lateral rolls of membrane dressed into the valley.

Valley runner battens should be installed equidistant on either side of the valley trough so that the valley outer flanges sit neatly on and between them. Remove the section of the fascia between the runner battens so that the valley can pass through the fascia and discharge into the guttering. Cut a 'V' into the end of the valley that follows the internal roof corner.

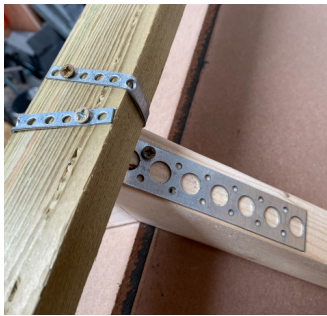
Insert the valley trough between the runner battens and pin into position by fixing through the outer flange only and into the runner batten, use no more than 25mm long valley flange fixings, as the fixings should not go through the membrane. Fixing should be spaced at approximately 500mm centres.

FULL INSTALLATION INSTRUCTIONS

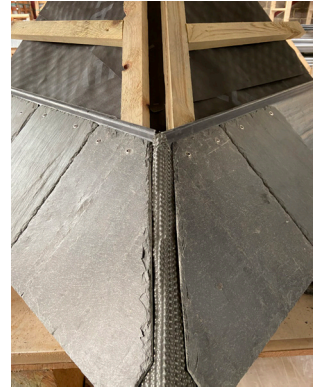
RIDGE BATTEN

If a vented ridge is required, the membrane should be cut along the centre line of the ridge to make an air gap of at least 10mm.

Fix the ridge runner brackets over the rafters or truss. Fit the timber runner batten into the brackets.



Hip runner battens should also be fitted to either side of the central batten to ensure that mitred battens and cut slates are securely double fixed. Cut slates can be re-drilled to ensure a double fixing.



BATTEN GAUGE

Position the top of the first batten 250mm up from the outside edge of the fascia board.

With consideration to the dry ridge system, the top batten should be positioned a minimum of 40mm down from the very apex of the rafters/truss.

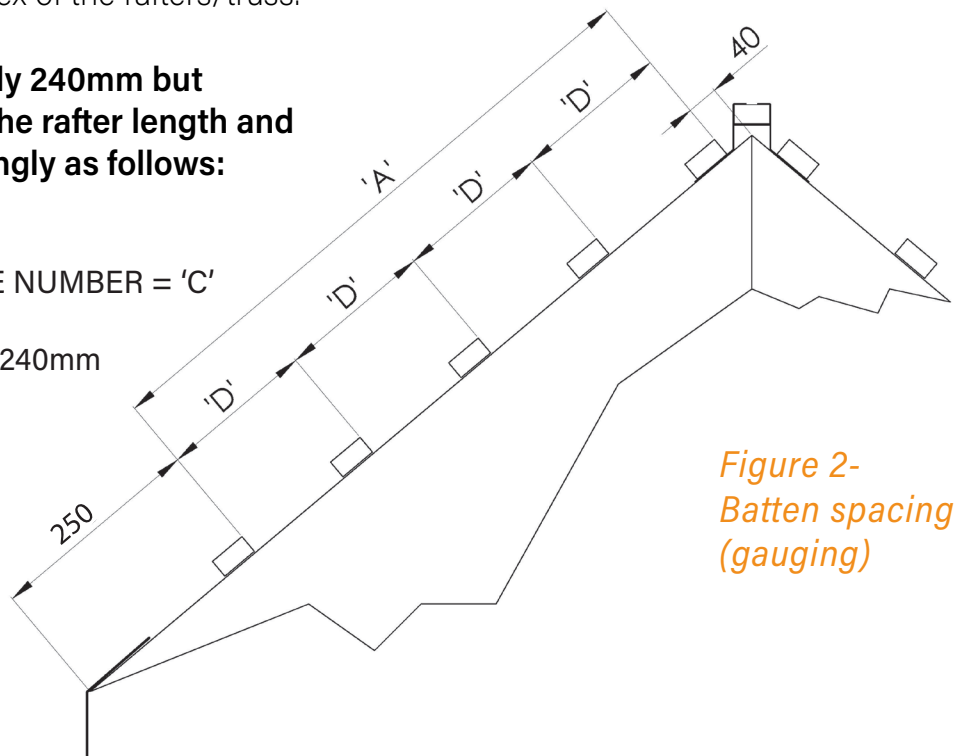
The batten gauge is typically 240mm but should vary depending on the rafter length and must be calculated accordingly as follows:

$$'A' \div 240 = 'B'$$

ROUND TO NEAREST WHOLE NUMBER = 'C'

$$'A' \div 'C' = 'D'$$

'D' SHOULD BE +/- 10mm OF 240mm



*Figure 2-
Batten spacing
(gauging)*

For example, the distance from the first batten to the top batten (A) might be 4896mm, so $4896 \div 240 = 20.4$ (B), round off to the nearest whole number, which in this example is 20 (C). Now divide 4896 by 20 courses to equal 245. This is the batten gauge (D) or distance from the top of one batten to the top of the next batten up the roof.

VERGE DETAIL



We recommend the use of RealVerge Ex. RealVerge Ex has been specially designed using real slate, for use with the ArmouredSlate system. The unique preformed design is easily installed below the edge of ArmouredSlate and fixes directly onto the batten. By removing the protective tape covering, RealVerge Ex will bond to the underside of ArmouredSlate providing a permanent weatherproof seal.

RealVerge Ex are handed left and right and can be easily cut to a mitre at the ridge.

When installing at the verge, the curved section of ArmouredSlate that hooks over the batten should be removed to accommodate a continual dry slate verge system.

Full installation instructions are available for RealVerge at mayanroofingsystems.com/resources.



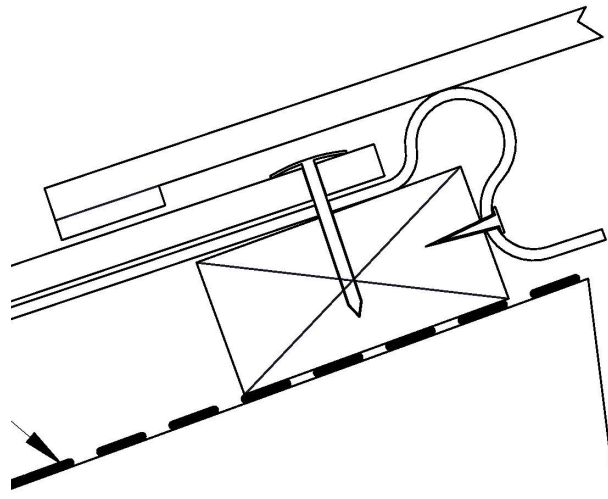
Cutaway section of ArmouredSlate to illustrate the installation of RealVerge Ex.

INSTALLATION OF ARMouredSLATE

Install the first length of ArmouredSlate by hooking the ArmouredSlate over the top edge of the first batten.



An optional fixing can be applied by fixing through ArmouredSlate into the top edge of the batten so as to hold the plate in place whilst working. (see fig 3).



*Figure 3 -
Optional fixing through
the top of ArmouredSlate*

The ArmouredSlate must always be side lapped by at least 75mm. Ensure the lap is clean, dry and free from dust. Remove the protection tape from the self-adhesive side strip and press the side lap joint firmly together to ensure a permanent seal. Joints in the ArmouredSlate must always be properly sealed. In unusual circumstances a good quality polyurethane adhesive may also be used to seal joints or damage in the ArmouredSlate. Offcuts at the end of a course can be carried to start off the next course to eliminate waste and to 'carry over' the pre-applied adhesive tape. Ensure that the lap tape is always used to seal the lap.

ABUTMENT

If the product is fitted against a wall or upstand then the Armoured Flashing should be fitted onto the Armoured Slate and dressed up the wall. The flashing must be well adhered to all substrates and the surfaces should be clean, dry and free from dust before application. Flashing should be the full length and covering at least 100mm of Armoured Slate and rise up the wall by at least 100mm. A flat wheeled roller should be used to press Armoured Flashing into position and ensure good adhesion.

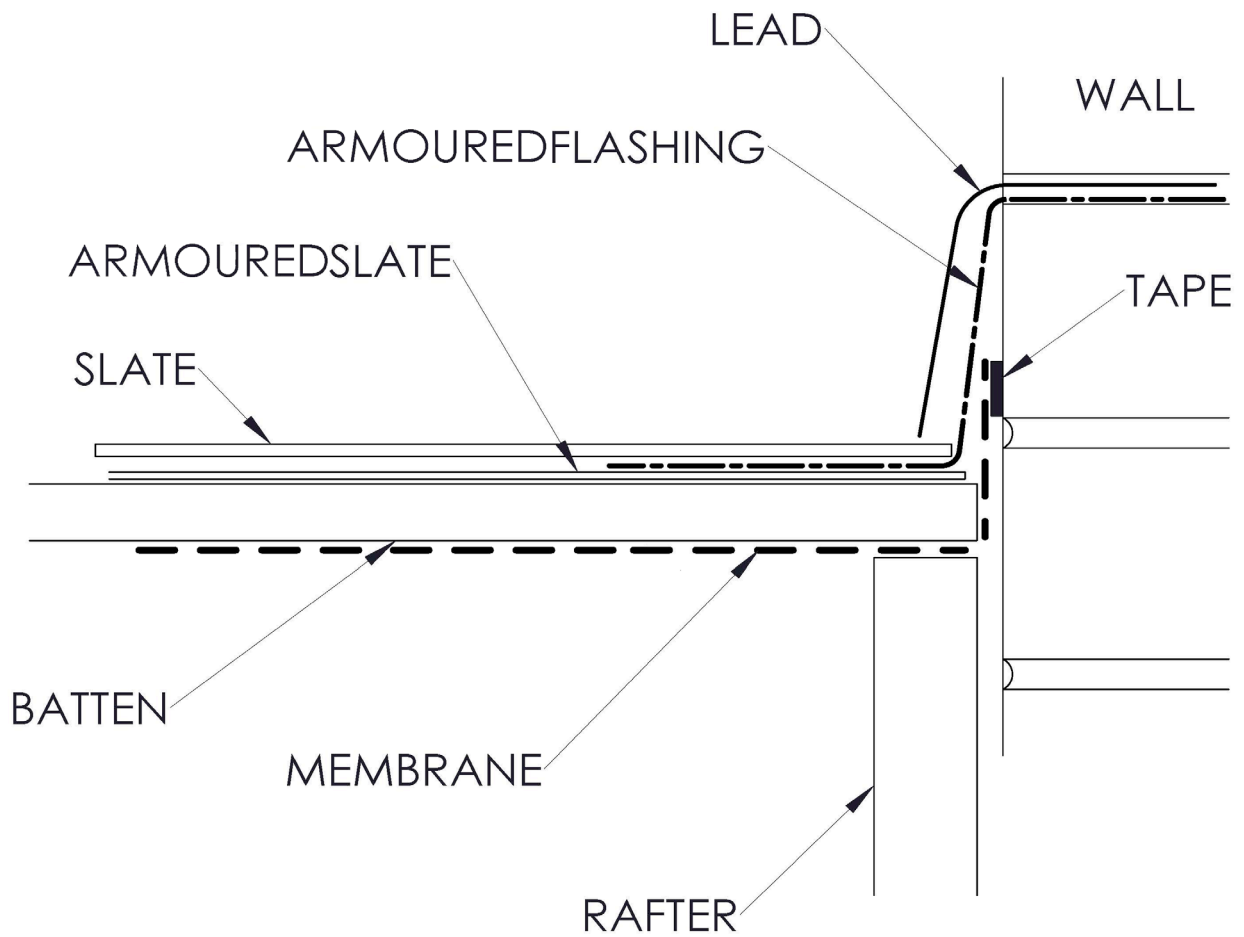
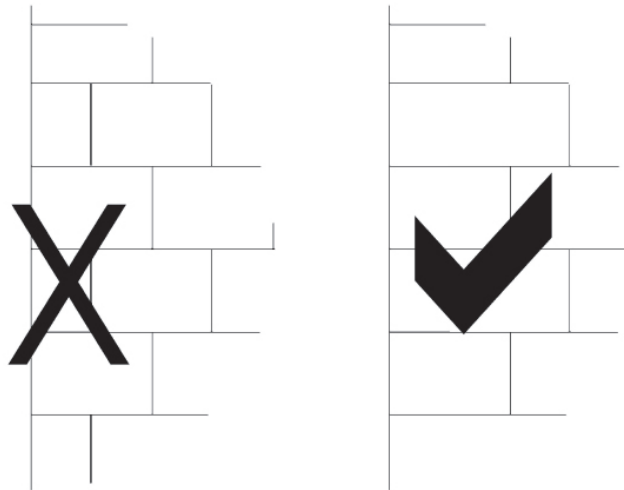


Figure 4 -
Abutment detail

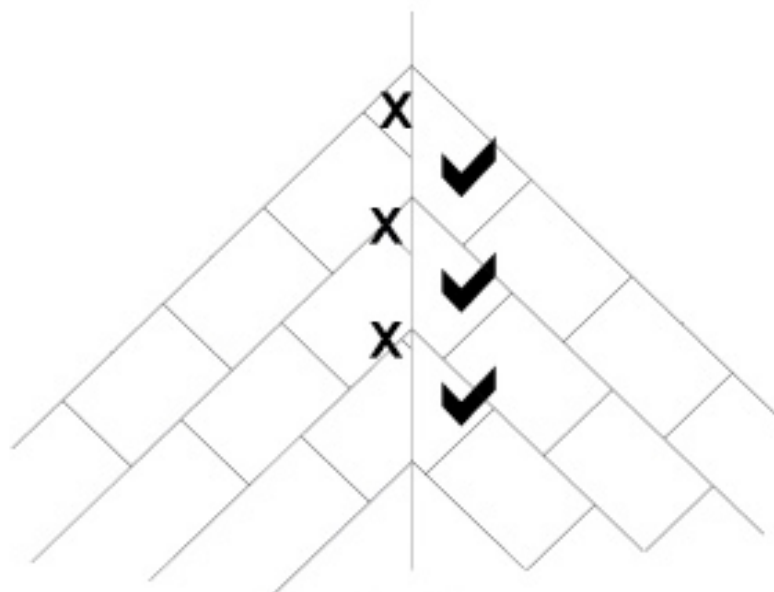
INSTALLING THE SLATES

Slates that are cut to less than 150mm wide should not be used on the roof. When cut slates are required the smaller slates should be replaced by using the slate and half (or double slates). By this method the small cuts are incorporated into the larger slate.

Slate and halves should always be used at the verge edges, hip cuts and into the valley.



*Figure 5 - Verge detail
Slate and halves should be used to avoid using small cut slates on the edge of the roof.*



*Figure 6 - Valley cuts
Slate and halves should be used to avoid using small cut slates in the valley.*

...INSTALLING THE SLATES

All slates that are installed at the peripheral two outer courses of the roof should be twice fixed, these include the first two courses, the last two courses and two verge slates. Twice fix with combination of SlateFix screws, slate hooks and/or copper disc rivets, which can sometimes be used through the ArmouredSlate to secure the foot of the slate to the ArmouredSlate plate.

Install the first slates by positioning them onto the ArmouredSlate just down from the upper curve, and screw them into position through the top of the slate using 2 x SlateFix screws through the pre-drilled holes in the slate.



Using copper disc rivets:

Using a slate hole punch (or a drill) make a hole centrally and 25mm from the bottom of the ArmouredSlate and the fixed slate. Insert a copper disc rivet up through this hole and bend over the top onto the slate. By this method the slate is permanently joined to the ArmouredSlate using the disc rivet. Disc rivets can also be used on the verge, on a hip and in the valley in situations where hooks cannot be used.



Using slate hooks:

Locate a slate hook at the top of the abutment join between the slates and install the next slate.



INSTALLATION OF THE SLATES

When installing slates on the main part of the roof (not around the edges) only slate hooks are required. Install the slates using slate hooks in the usual manner: insert slate into the hook and add another slate hook next to it ready for the next course. Slate and halves or double slates must always be used at the verge and hip or into the valley. This will avoid using small cut slates that can't be twice fixed.

The roof should be fully covered with slates.

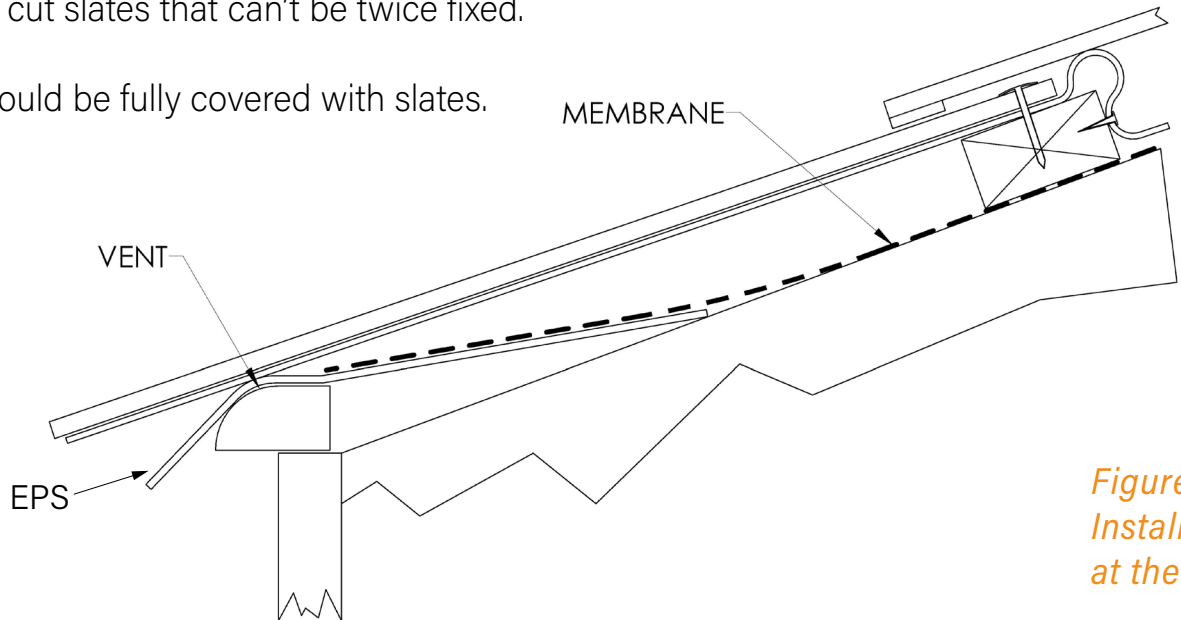


Figure 7 - Installation at the eaves

APRON FLASHING BELOW 17.5

At a roof pitch above 17.5 degrees, a standard 150mm lead cover flashing can be used. At roof pitches below 17.5° the Armoured Flashing should be used under or in place of the apron flashing in the 'lean to' application or chimneys etc to prevent rain being driven under the front of the apron.

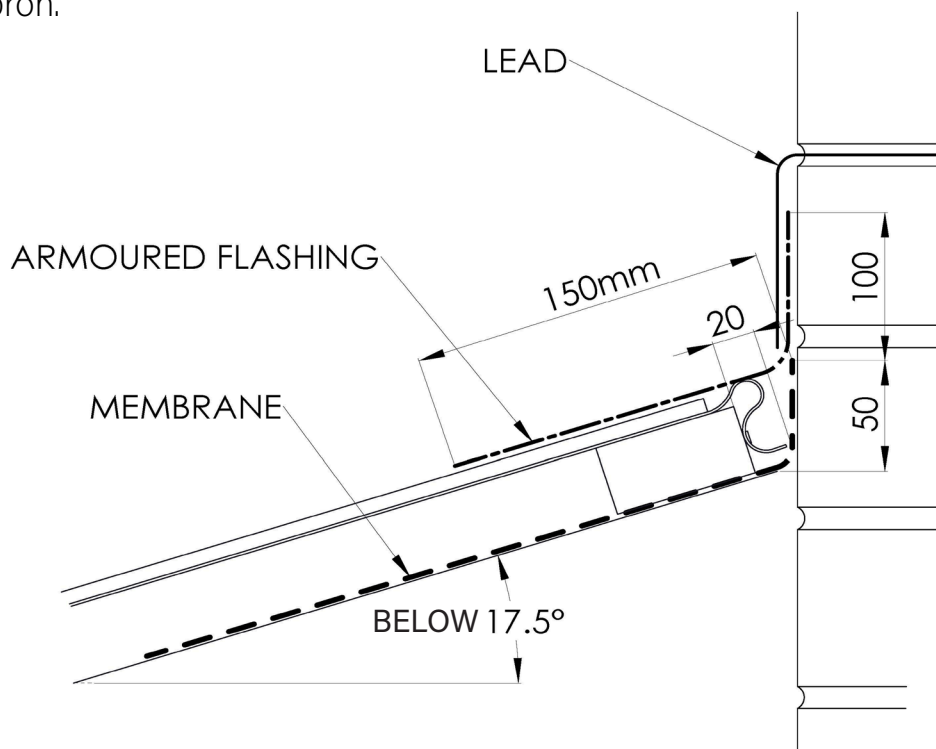


Figure 8 - Apron flashing detail

FULL INSTALLATION INSTRUCTIONS

HIP DETAIL

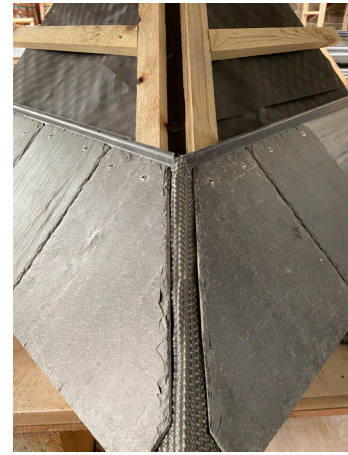
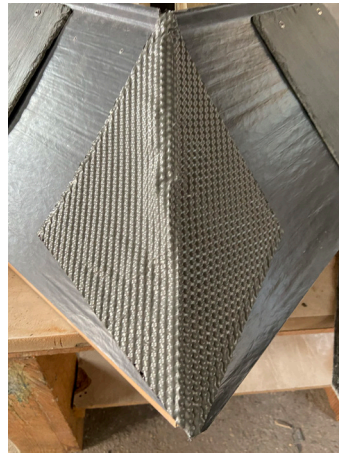
Remove the upper section of ArmouredSlate so that it can carry over the hip runner battens.



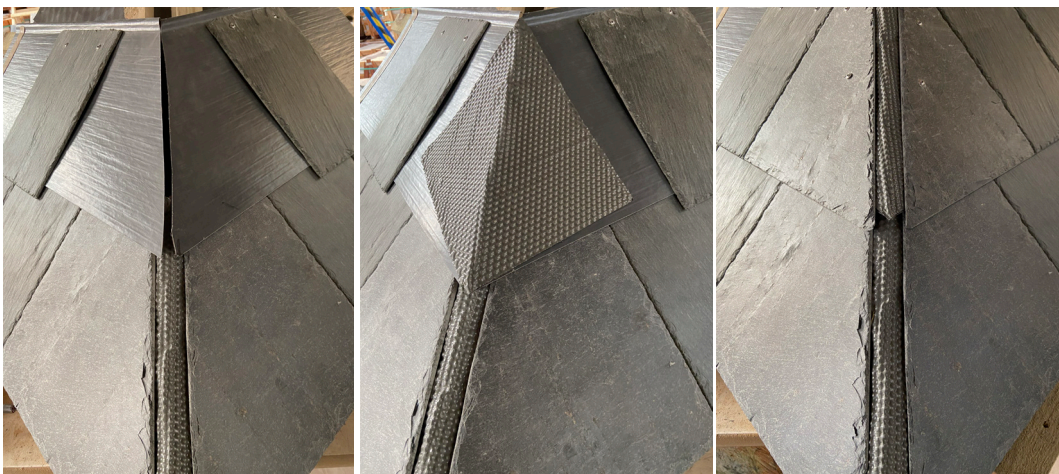
Mitre the ArmouredSlate plate along the central line of the hip.

Cut and apply ArmouredFlashing chevron over the mitre cut.

Install the cut slates at the hip.



Repeat the above on each course up the hip.



Finally, install RealRidge at the hip.



Finish in style

with



Angles available: 90°, 105°, 120°, 135°, 150°

The full installation guides for our range of RealRidge products can be found on our website.

Please see below the direct link to the installation guide for All-in-one RealRidge, the recommended ridge product for use with the ArmouredSlate system.

<https://mayanroofingsystems.com/media/53odrgk4/all-in-one-realridge-slate-installation-guide-rraioig01-03-22.pdf>

Installation guide for OverLap RealRidge:

<https://mayanroofingsystems.com/media/qmop0zgr/overlap-fitting-instructions-rrovlig01-04-22.pdf>

PRODUCT SPECIFICATION

ArmouredSlate - UV stable GRP preformed sheeting



<i>Colour:</i>	<i>Blue grey RAL 7015</i>
<i>Length:</i>	<i>1500mm</i>
<i>Thickness:</i>	<i>1mm</i>
<i>Weight:</i>	<i>2.33kg/m</i>
<i>Finish:</i>	<i>Matt finish</i>
<i>Resistance:</i>	<i>Resistant to infestation and degradation</i>
<i>Fire rating:</i>	<i>SAB, Class 3 to BS476 parts 3 & 7</i>

SlateFix Screws- Stainless steel screw



<i>Size:</i>	<i>4.0 x 30mm Button Flange TX20 Screw</i>
<i>Type:</i>	<i>Low profile, TX20 drive, pan head, stainless steel</i>

ArmouredFlashing - Aluminium sheet on self-adhesive butyl

<i>Roll size:</i>	<i>250mm wide 6m long rolls</i>
<i>Thickness:</i>	<i>1.77mm</i>

Armoured Tape - EDPM adhesive foam tape

<i>Size:</i>	<i>2mm x 20mm</i>
<i>Pre-applied to ArmouredSlate component</i>	

Slate Hooks - Stainless steel spike



<i>Size:</i>	<i>80mm x 2.75mm</i>
<i>Material:</i>	<i>Grade 316 stainless steel</i>

Copper Disc Rivets



<i>Size:</i>	<i>20mm x 1.5mm</i>
<i>Material:</i>	<i>Copper</i>

ARMOURERD SLATE

BETTER

USING PREMIUM SLATES

CHEAPER

BEST VALUE SYSTEM BELOW 25°

LOWER

BEST EVER LOW PITCH

LIGHTER

50% LESS SLATE

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* This fitting guide is subject to continued improvement. Please ensure you follow the latest version, which can be found at mayanroofingsystems.com/slate

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