

Roofing Sitework Guide



Roof slope
Interlocking tiles
Verge Cloak verge
Vertical tiling Clay plain tiles
Mortar bedded security ridge
BS 8612 Tile vent terminal Mono-ridge
BS 8000
Eaves Dry fix batters
Batten gauge HSE systems Set out
Abutment **Hip** Rigid sarking
Mechanical fixing **Ridge**
Tile HipFast **SoloFix** BBA Valley
Vertical tiling Universal Loading out
Overhang BS 5534

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NEED INSTANT SITE ADVICE?

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ABOUT THIS GUIDE

Good pitched roofing practice is the result of many years experience in the practical application of products on all types of roof designs.

This 'Sitework Guide' is based on Marley's long history in the manufacture and specification of clay and concrete tiles, dry fix and roof ventilation systems, and incorporates the recommendations of BS 5250, BS 5534, BS 8612 and BS 8000-6 and in the application of these products.

The Guide contains advice on good sitework practice for traditional installation details as well as the installation of Marley's extensive range of dry fix and ventilation systems.

Full details of these products, including performance and properties, design guidance, special applications and fixing requirements, can be found online, in the

relevant product literature, design guides and technical bulletins or by contacting the Technical Advisory Service.

Notes: This Sitework Guide should be read in conjunction with all relevant Building Regulations, British Standards, Codes of practice and Health & Safety legislation as well as Marley's current product data and Third Party Certificate conditions of use (where applicable).

- 1 BS 5250 – 'Code of practice for the control of condensation in buildings'
- 2 BS 5534 – 'Code of practice for slating and tiling (including shingles)'.
- 3 BS 8000-6 – 'Workmanship on building sites – Part 6. Code of practice for slating and tiling of roofs and claddings'.
- 4 BS 8612 – 'Dry-fixed Ridge, Hip and Verge Systems for Slating and Tiling - Specification'




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GENERAL ADVICE

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Dry fix and ventilation systems
For more details, see pages 127-236

STORAGE AND HANDLING

Provision should be made for proper storage and handling of materials to avoid deterioration in quality and appearance, to avoid breakage or distortion, and to minimise wastage.

GENERAL

- 1 Tiles should be stored in a safe location and should be kept protected from damage on site. Pallets should be stored on a smooth, level base capable of supporting their weight.
- 2 Store roof underlays on end, on a firm, clean base protected from direct sunlight and in accordance with manufacturers' instructions
- 3 Store battens and counter battens on sufficient bearers to prevent sagging or twisting.
- 4 Protect battens and counter battens from water saturation when stored in bales or bundles horizontally.
- 5 Store roof accessories in a safe, weatherproof store/location.

Pallets and crates should be transported using appropriate lifting machinery, i.e. fork lift or mechanical grab. Unload and handle tiles and fittings with care to avoid damage, soiling and breakage. Avoid loading pallets onto scaffolding unless a safe access platform has been provided.

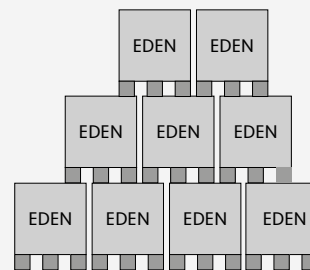
Most Marley products are provided palletised, banded and shrink wrapped, and can be delivered direct to site by a fleet of modern transport with mechanical off-loading facilities.

The products are delivered as follows:

- Clay plain tiles – packed on pallets or in crates and shrink wrapped
- Concrete plain tiles – palletised, banded and shrink wrapped
- Concrete interlocking tiles and slates – palletised, banded and shrink wrapped
- Clay interlocking tiles – palletised and banded on pallets.

STORAGE OF CLAY AND CONCRETE TILES

Tiles should be stored in a safe location and should be kept protected from damage on site. Pallets should be stored on a smooth, level base capable of supporting their weight. Do not stack tiles more than 3 pallets high in stockyards or 2 pallets high on site.



Recommended Edén stacking

SAFETY AND ACCESS

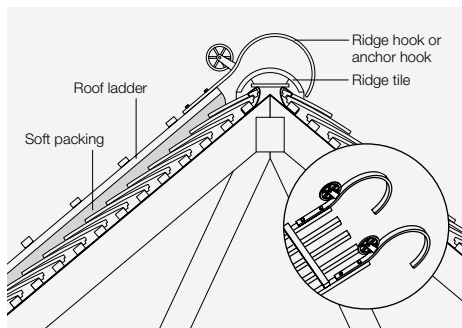


Fig. 1 – Use of crawling boards

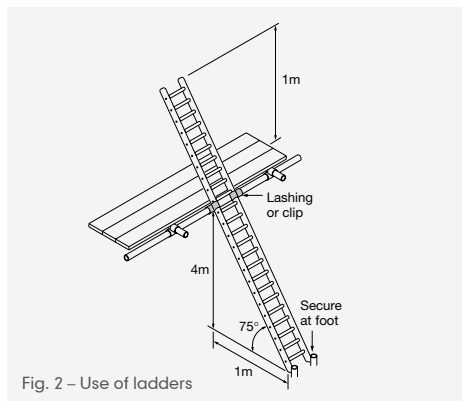


Fig. 2 – Use of ladders

SAFETY REGULATIONS

The Construction Regulations made under the Factories Act 1961 comprise:

- The Health and Safety at Work Act 1974
- The Construction (Design and Management) (Amendment) Regulations 2015
- The Management of Health and Safety at Work Regulations 1999
- Work at Height Regulations 2005
- Control of lead at work – Control of Lead at Work Regulations 2002

See page 23 for information on RPE and PPE requirements.

HEALTH AND SAFETY EXECUTIVE

Advice and guidance on site health and safety can be found at the HSE website: www.hse.gov.uk

ACCESS

Any roof or vertical work in slating or tiling should be treated as fragile. An adequate

number of crawling boards and ladders should be used for gaining access over completed areas of roof tiling, and should be designed for the purpose, be of good construction and strong enough to enable planned work to be carried out. The boards or ladders should also be properly supported on the sloping part of the roof by means of a ridge hook placed over the ridge (not bearing on the ridge tiles), and supported by soft packing material (Fig. 1).

The Regulations also require precautions to be taken when access ladders are used (see Fig. 2). Full requirements are given in 'HSG33', Health and Safety in roof work 2012.

Ladders used to gain access to working platforms or to the eaves of the roof should be in good sound condition, fully secured with the feet resting on a solid flat surface. The length should extend above the level of the landing by 1m with an angle of slope of 1:4 (1m out for every 4m height).

The requirements to secure ladders should be particularly noted.

SAFETY AND ACCESS

WORK ON ROOFS

On traditional pitched roofs, most injuries occur as a result of one of the following: a fall from the eaves; slipping down the slope of the roof and over the eaves; falling through the roof trusses; falling from the gable end. Unless work is only for a very short duration, full edge protection must be provided on all elevations of the roof where access is needed.

STRIP AND RE-ROOF

An independent tied scaffold is required. Guidance to the scaffold specification is given in BS EN 12811-1: 2003.

TG 20:08 produced by the National Access and Scaffolding Confederation gives technical guidance on the use of BS EN 12811-1.

OTHER WORK

Where a person can fall from the lower edge of a sloping roof, a catch barrier should be provided at the edge (scaffolding as shown in Figs. 3 and 4 is ideal).

The platform should comply with BS 5973.

Where sloping roof edge protection takes the form of a working platform below the eaves, the platform should:

- be 305mm below eaves
- project at least three boards beyond the edge of the roof
- be fitted with both an intermediate rail and guard rail
- have a 150mm high toe board (Fig. 3)

The top lift of a scaffold providing sloping edge protection should be dimensioned as follows (Fig 4):

- i) working platform minimum width 600mm
- ii) minimum 910mm
- iii) maximum gap 470mm
- iv) to rise to the line of the roof slope with a minimum height of 150mm
- v) gap between rails no more than 470mm

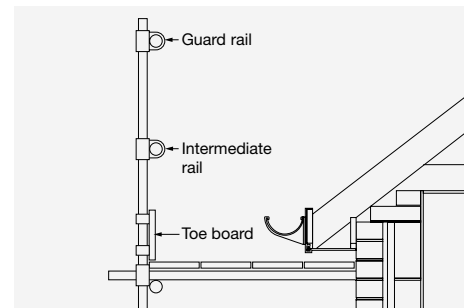


Fig. 3 – Sloping roof edge protection

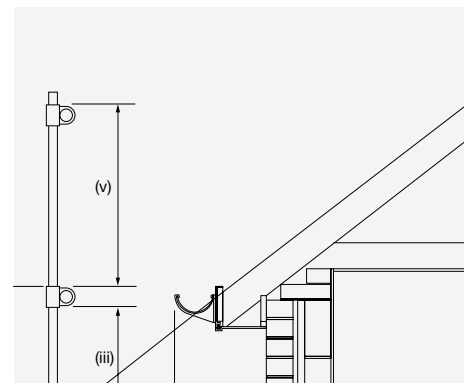


Fig. 4 – Top lift of scaffold providing working platform

SAFETY AND ACCESS

PRECAUTIONS

- 1 Do not rest ladders used for access at eaves level against gutter.
- 2 Block ladders out to clear gutter and make secure.
- 3 Access ladders should extend to project not less than 1.07m above landing position.
- 4 Take care when working near metal or open valleys so as not to damage side coverings.
- 5 Take great care when fixing eaves gutters, immediately below valleys. Valley troughs are vulnerable to breakage, and should not be eased or levered.
- 6 Provide some form of packing between roof ladders, crawling boards and covering materials (e.g. straw-stuffed sacks, thick sheet, rubber etc.) to prevent damage of tiles. This is important where lightweight tiles or slates are used.
- 7 Materials and tools should not be drawn or dragged over the roof covering.

Safety and general precautions check points

- Ensure that all legal safety requirements are met by reference to the following:

The Health and Safety at Work Act 1974

The Construction (Design and Management) (Amendment) Regulations 2015

The Management of Health and Safety at Work Regulations 1999

Health and Safety in Roofwork HSG33 2012

The Work at Height Regulations 2005

- Ensure all scaffolds and ladders are properly secured and where necessary, scaffold should be checked for safety certificates before using.
- Provide guard rails and toe boards on scaffolds.

- Avoid trafficking over completed tiled and slated roof areas.

- Use a roof ladder for access, maintenance and repair, suitably packed to avoid damage to the roof covering.

- Cured tiles are inert but edges and surfaces can be sharp and abrasive, wear suitable gloves for protection.

- Machine cutting of cured tiles can create dust which may contain quartz. If inhaled, in excessive quantities over long periods, respirable dust containing quartz can constitute a health hazard. Exposure should not exceed published health standards. (For current standards, see Guidance Note EH40 issued by the Health and Safety Executive).

ROOF STRUCTURE

Before commencing work check:

- 1 Roof trusses are to a true line and adequately braced as specified.
- 2 Roof structure is to an acceptable squareness, tolerance and to specified minimum pitch (Fig. 5).
- 3 Flashings and secret gutters, covered by the slating or tiling, are positioned and secured to specification (see eaves fascia height tables, pages 132 and 238).
- 4 Fascia boards and gutters are positioned and secured to specification.
- 5 Gable brickwork has been levelled to be below rafter truss.
- 6 Fascia boards or tilting fillets are positioned to allow eaves course of tiles or slates to be in same plane as main roof, i.e. not drooped or elevated.
- 7 Report any discrepancies to site management before work progresses.

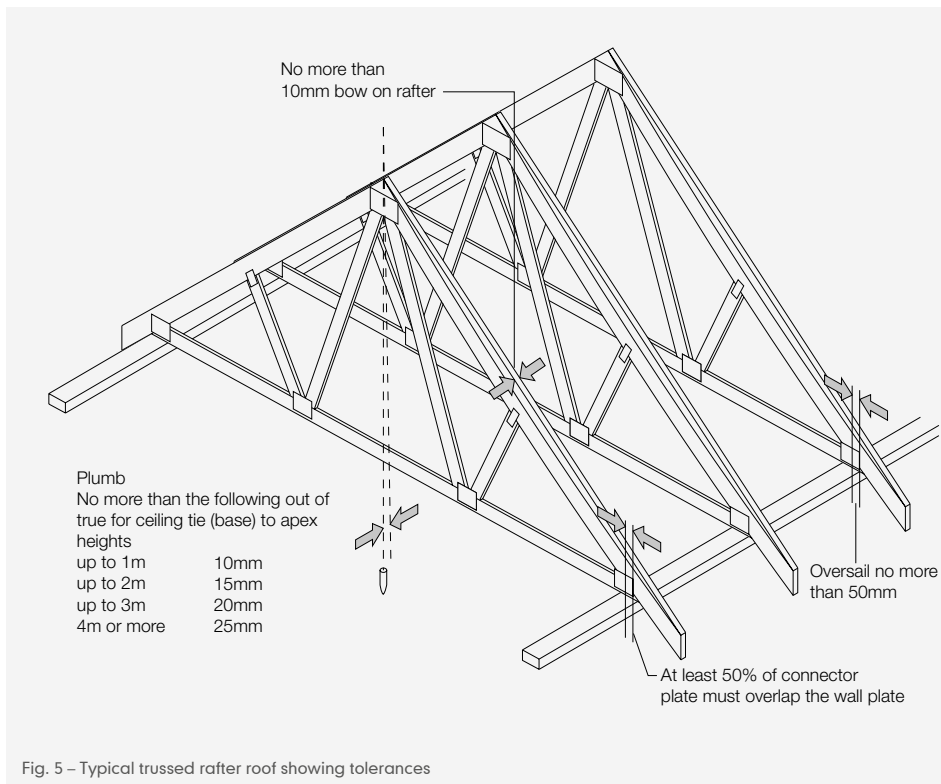


Fig. 5 – Typical trussed rafter roof showing tolerances

LOADING OUT

GENERAL

- 1 Before slating or tiling commences, check delivered products against initial order and report any discrepancies or defective materials to the site agent or manufacturer.
- 2 Pallet loads should be checked for batch codes to ensure consistency on large roof areas.
- 3 Special fittings should be checked against matching tiles to ensure suitability before tiling commences.

LOADING THE ROOF WITH TILES

- Load slates, tiles and fittings out on roof safely, support by battens to avoid slippage and distribute evenly to prevent overloading of roof structure (Figs. 6-9). Ensure stacks are positioned over rafters.
- All slates and tiles, especially variegated and granular faced tiles, should be mixed from different pallet loads whilst the roof is being loaded to enhance the appearance when laid.

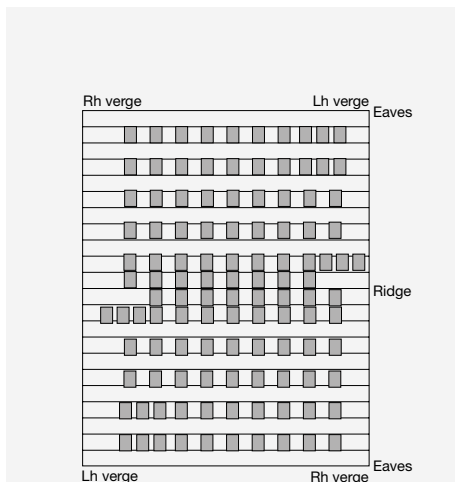


Fig. 6 – Loading roof evenly with tile/slate stacks

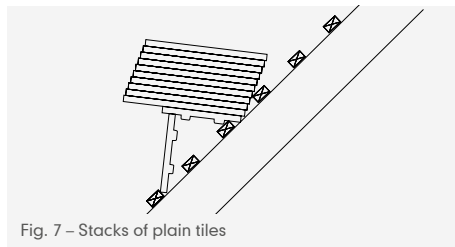


Fig. 7 – Stacks of plain tiles

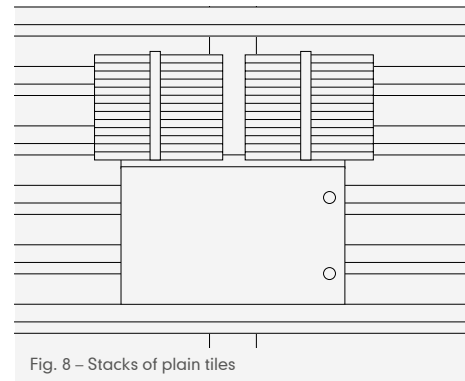


Fig. 8 – Stacks of plain tiles

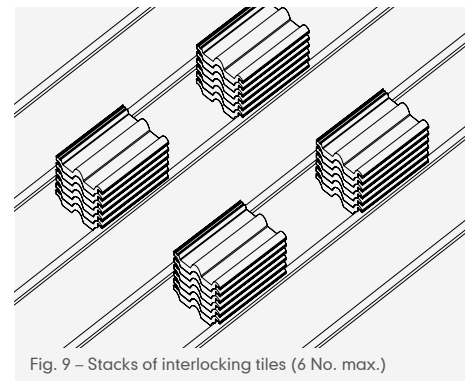


Fig. 9 – Stacks of interlocking tiles (6 No. max.)

UNDERLAYS

GENERAL

Underlays for use beneath tiles and slates are either fully supported over boarding, sheathing or sarking, or unsupported draped over rafters/counter battens and should meet the following:

FULLY SUPPORTED UNDERLAYS

- 1 HR* underlay to BS EN 13859-1 Class W1 water penetration classification with third party certification for the use intended. Marley Universal non-breathable underlay is an ideal solution (BBA cert. 16/5335).
- 2 LR† underlay to BS EN 13859-1 Class W1 water penetration classification with third party certification for the use intended. Marley Universal vapour permeable underlay is an ideal solution (BBA cert. 16/5334).

UNSUPPORTED UNDERLAYS

- 1 BS 8747 Class 1F Reinforced Bitumen or Class 5U polyester reinforced bitumen.
- 2 HR* underlay to BS EN 13859-1 Class W1 water penetration classification with third party certification for the use intended.

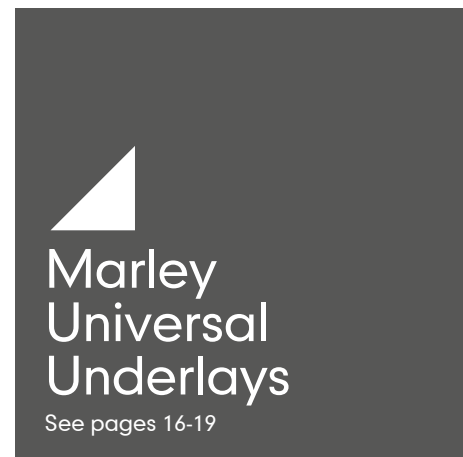
- 3 LR† underlay to BS EN 13859-1 Class W1 water penetration classification with third party certification for the use intended. Refer to Marley Universal underlays where applicable (for third party BBA certification, refer to Certificates 16/5335 and 16/5334)

* HR (high water vapour resistance) underlay >0.25MN.s/g

† LR (low water vapour resistance) underlay <0.25MN.s/g
LR underlays are sometimes referred to as 'vapour permeable' or 'vapour open'.

GENERAL LAYING RECOMMENDATIONS

- 1 Lay specified roofing underlay parallel to eaves or ridge with horizontal overlaps as specified in the table overleaf. Vertical side laps should be 150mm (min.).
- 2 Minimise gap at laps resulting from different tautness between underlay courses. Drape in underlay between supports to be no less than 10mm and no greater than 15mm.
- 3 A nominal 10mm drape should be provided between supports to allow a drainage path for moisture and to prevent excessive deflection under wind load.



- 4 Fix underlay with fixings specified, keeping number of perforations to a minimum.
- 5 Handle and fix underlay with care to ensure no tears or punctures. Repair any tears or punctures prior to tiling.
- 6 Ensure that underlay does not obstruct flow of air through ventilators located at eaves, ridge or in main roof.

UNDERLAYS

- 7 Weather appropriately all holes formed in underlays for soil vent pipes etc.
- 8 Underlay laps should be covered by a batten and where necessary, the lap of the underlay adjusted to coincide with the nearest slating or tiling batten. Laps may also be sealed using proprietary means in accordance with manufacturers' instructions. Where a proprietary sealant is used, its durability should meet the same recommendations as the underlay. Refer to geographical wind zones for wind pressure resistance figures.
- 9 Contact should be avoided between the underlay and the underside of the slates or tile to prevent the wind uplift load being transmitted to the slates or tiles.

MINIMUM HORIZONTAL LAP FOR UNDERLAYS

Rafter pitch	Not fully supported	Fully supported	Vertical laps
12.5 - <15°	225mm	150mm	100mm
≥15°	150mm	100mm	100mm

BS 5250 and BS 5534 give advice on the installation of underlays and roof ventilation requirements.

EAVES

- 1 Lay the underlay over a suitable support tray stopped approx. 25mm from the top of the curved front edge.

Note: At pitches below 20°, consideration should be given to provide a protection strip wide enough to fit under the eaves course batten.
- 2 Underlay should allow drainage of water and should extend over tilting piece or fascia board.
- 3 Avoid water-traps behind the fascia board (Fig. 10).

DUO RIDGE

- 1 Lay top courses of underlay over apex and fix to overlaps not less than the minimum in the table shown left.

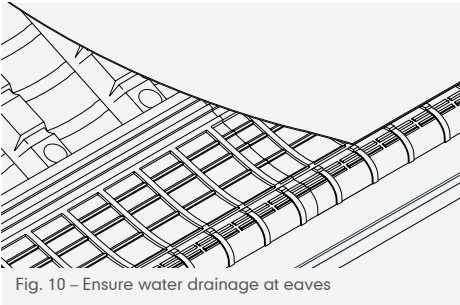


Fig. 10 – Ensure water drainage at eaves

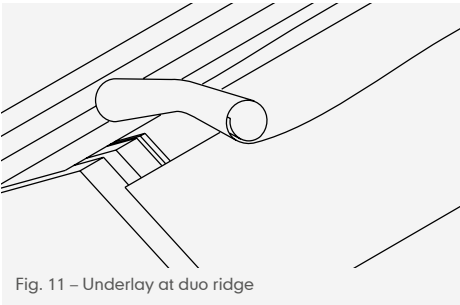


Fig. 11 – Underlay at duo ridge

UNDERLAYS

MONO RIDGE

- 1 Lay or cut top course of underlay (not less than 100mm) over top of fascia board and fix to same.

HIPS

- 1 Continue underlay over hip and fix in an overlapping manner.
- 2 Ensure that a minimum lap of 150mm is maintained (Fig. 12).

Note: An additional strip minimum 500mm wide may be laid over the main roof underlay taking care to avoid excessive thickness.

VALLEYS

- 1 Lay underlay parallel to eaves and extend beyond centre line of valley by not less than 300mm from each direction to give a double thickness of underlay in valley of not less than 600mm wide.
- 2 Fix underlay not less than 100mm from centre line of valley.
- 3 Where underlay is cut to centre line of valley, lay a continuous strip of underlay not less than 600mm wide for the full length of valley beneath main courses of underlay (Fig. 13).
- 4 Where layboards are provided for continuously supported metal and GRP valleys, underlay should be cut back to rake so as to lap over metal valley tilting fillets.
- 5 Do not lay metal and GRP plastic valley materials and units directly onto underlay where there is any risk of adhesion.

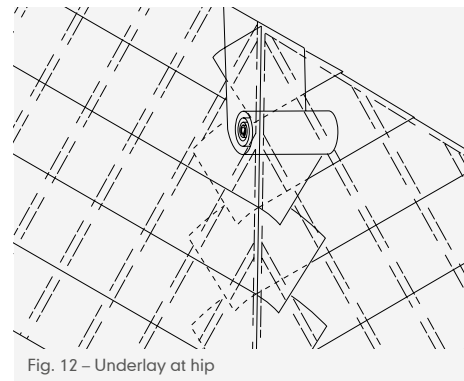


Fig. 12 – Underlay at hip

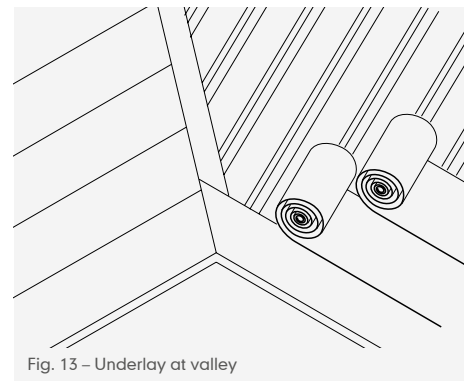


Fig. 13 – Underlay at valley

UNDERLAYS

VERGES

- 1 At verges, underlay should be carried across wall cavity to suit the verge detail being used by 25-50mm.

SIDE/FRONT ABUTMENTS

- 1 Turn and neatly cut underlay to not less than 50mm up abutment which will be covered by flashings.

BACK ABUTMENT

- 1 Dress or cut underlay neatly to provide not less than 100mm to 150mm overhang into back gutter.

UNDERLAY PENETRATIONS (SOIL PIPES)

- 1 Accurately locate and mark position for opening using pipe etc. as a template.
- 2 Neatly cut an 'X' shaped hole and turn up flaps around sides of pipe to minimise risk of any water leakage.

VERTICAL LAPS

- 1 Vertical laps should be not less than 150mm. Fix each end securely over rafters. Edge distance of fixings should be at least 50mm.

HORIZONTAL LAPS

- 1 Horizontal lap should be not less than that given in table on page 13.
- 2 For underlays not fully supported, horizontal laps should be secured in accordance with BS 5534, by either increasing the lap to coincide with a naturally occurring batten course, or alternatively, through the use of a tape system for sealing underlay laps.

Note: The use of an additional fly batten is permissible under the British Standard, however it is not recommended because it can – in some circumstances – create a tripping hazard.

Marley Universal underlays come with an integrated tape system for sealing laps.

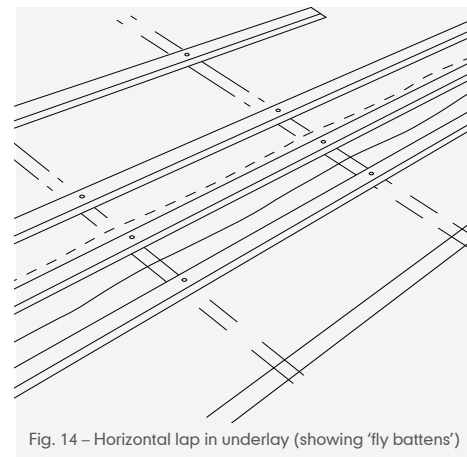
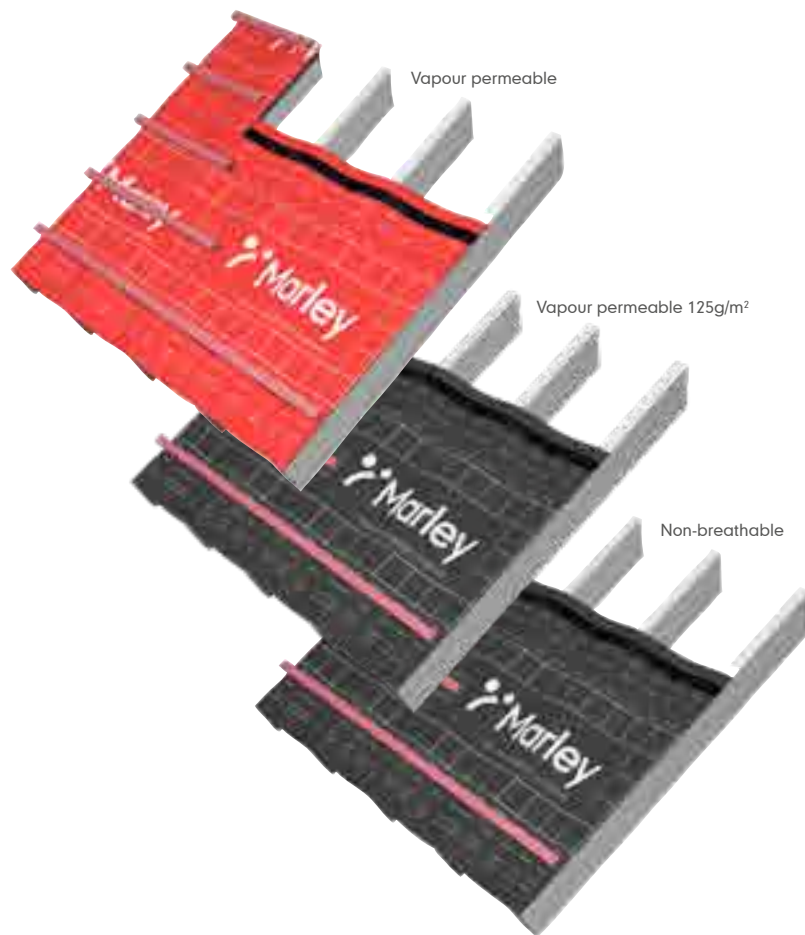


Fig. 14 – Horizontal lap in underlay (showing 'fly battens')

UNIVERSAL UNDERLAYS

Universal vapour permeable and non-breathable underlays from Marley are a high quality selection of high performance and lightweight membranes, designed to integrate either as part of a complete Marley roof system, or used in conjunction with other manufacturers' tiles and slates.



UNIVERSAL UNDERLAYS

INSTALLATION

Each underlay is manufactured using the latest materials and processes, and each incorporates a number of useful features which assist in ensuring installation that is not only correct, but also compliant with the latest British Standards.

BBA approved:

- Certificate No.19/5678 for vapour permeable
- Certificate No.19/5673 for non-breathable



Marley underlay should be laid horizontally across the rafters, starting at the eaves. It should not be stretched taut over the rafters, but draped as shown, in order to allow for small temperature movements and to ensure a gap between the tile batten and underlay for drainage down to the gutter.

Marley vapour permeable underlay must always be fixed with the PRINTED side facing outwards. Seal laps with tape.

MINIMUM LAP

Roof pitch	Horizontal laps		Vertical laps
	Not fully supported	Fully supported	
12.5° to <15°	225mm	150mm	100mm
≥15°	150mm	100mm	100mm

BS 5250 and BS 5534 give advice on the installation of underlays and roof ventilation requirements.

ZONAL COMPLIANCE

Summary of test results for wind uplift resistance of Universal non-breathable underlay to BS 5534 Annex A.

	250mm batten gauge taped lap using integral tape	345mm batten gauge taped lap using integral tape
Geographical wind zones	Zones 1-5	Zones 1-5

TYPICAL DETAILS

The illustrations shown here are examples of typical constructions. Many other types of construction for eaves, hip, valley, ridge and abutment are possible and may require different underlay configurations.

EAVES

A 500mm strip of UV resistant underlay should be supported on a continuous tilting fillet or proprietary underlay support tray and dressed down into the gutter (Fig. 15).

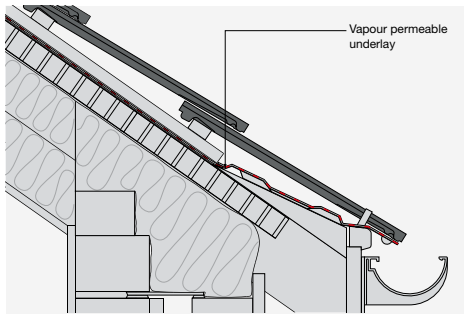


Fig. 15 – Universal Underlay at eaves

UNIVERSAL UNDERLAYS

RIDGES

For ventilated ridges, Marley vapour permeable underlay should be cut short at the ridge as shown in Fig. 16.

HIPS

A strip of Marley vapour permeable underlay at least 600mm wide should be laid over hips and above the underlay to the main roof (Fig. 17).

VALLEYS

For tiles, lead or proprietary valley systems, a valley underlay strip of Marley vapour permeable underlay at least 600mm wide should be laid under the main roof underlay (Fig. 18).

ABUTMENTS

Marley vapour permeable underlay should be turned up 50mm min. at the abutment to prevent rain and snow being blown into the roofspace (Fig. 19).

Marley offer a comprehensive range of dry fix BS 5534 options for all the above constructions. These can be found on pages 127-236.

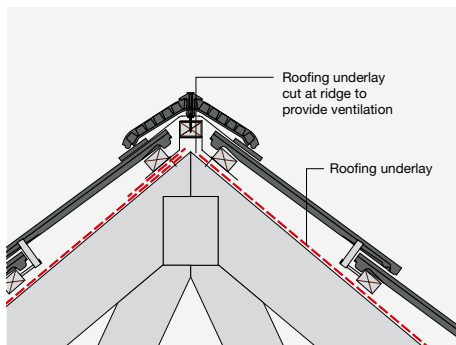


Fig. 16 – Universal Underlay at ridge

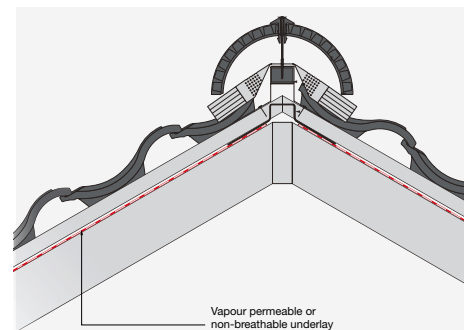


Fig. 17 – Universal Underlay at hip

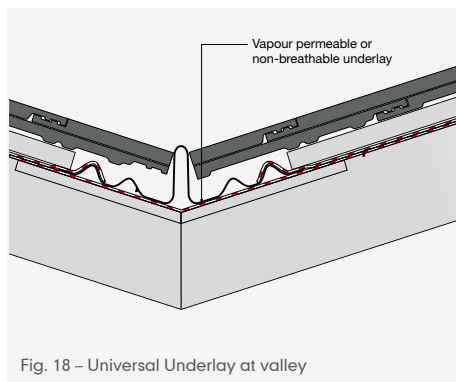


Fig. 18 – Universal Underlay at valley

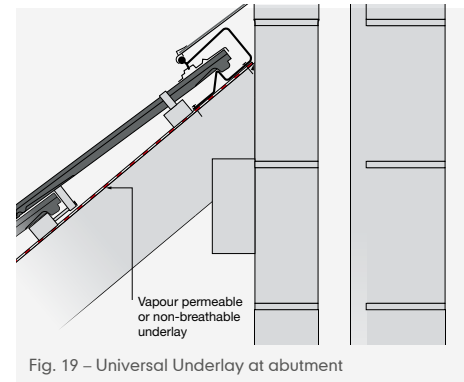


Fig. 19 – Universal Underlay at abutment

UNIVERSAL UNDERLAYS – VERTICAL USE

Marley Vapour Permeable Underlays for use in timber frame construction are satisfactory for use as on-site or factory-applied breather membranes in timber-frame walls with a cavity and a masonry outer leaf, weatherboarding or tile/slate cladding.

- 1 Marley Vapour Permeable Underlay for use in timber frame constructions must be installed in accordance with the recommendations given in NHBC Standards, Chapter 6.2 External timber framed walls, where appropriate.
- 2 The underlay must be secured at regular intervals not exceeding 500mm with austenitic stainless steel staples or nails to prevent damage by wind action.
- 3 Upper layers should overlap lower layers to shed water away from the sheathing. Vertical laps should be staggered wherever possible.
- 4 Horizontal laps should not be more than 100mm and vertical laps not more than 150mm
- 5 It is essential that the positions of the studs are marked on the face of the breather membranes, preferably by tape, to enable fixing of wall ties and battens.
- 6 It is essential that the lowest timbers in the wall are protected by the breather membranes.



BATTENS

RECOMMENDED BATTEN SIZES (BS 5534)

Tile or slate type	Basic minimum sizes			
	Rafters/support			
	up to 450mm span width	25mm depth	451 - 600mm span width	25mm depth
Plain pitched/vertical	38mm	25mm	38mm	25mm
Single lap interlocking tiles/slates	38mm	25mm	50mm	25mm
Double lap slates – Natural (sized/random)	50mm	25mm	50mm	25mm
Double lap slates – fibre cement/concrete	38mm	25mm	50mm	25mm

All dimensions subject to re-sawing allowance: width + 3mm depth 0 or + 3mm based on measurement at a reference moisture content of 20%.

1 One of the biggest issues with roofing battens is under sizing. To avoid this, there is now a clear tolerance limit for the minimum depth of a roofing batten, which is +3mm/-0mm. Also, roofing battens cannot be less than 25mm deep and where the span between supports exceeds 600mm, calculations must be completed to determine their correct dimensions for structural integrity.

characteristics and defects (knots, fissures and splits, wane, slope of grain, rate of growth, distortion, decay and insect attack, sap stain, resin pockets and moisture content), including minimum dimensions and grading requirements.

2 To help meet these minimum standards, roofing battens delivered to site should be graded with the following information in accordance with the standard:

- a) Name of supplier (the company that graded the roofing battens NOT the company that cut them)

- b) Origin
 - c) Graded in accordance with BS 5534
 - d) Basic size
 - e) Type of preservative (if applicable)
- 3 All roofing battens must conform to the requirements set out in BS 5534 and must be checked prior to installation. Failure to do so risks increasing unnecessary waste, invalidating warranties and introducing a health and safety hazard on site.

JB Red battens, available from Marley, not only fully comply with BS 5534: 2014 + A2: 2018, but are also recognised by third party certification of conformity. Each batten is laser scanned and graded prior to delivery, providing all the assurances required to comply with the British Standard – ensuring the highest quality of batten available with the least waste and lowest risk to health and safety.

CHOOSING BATTENS

1 Roofing battens must meet the recommendations stated in BS 5534 in terms of their species, permissible

CHOOSING COUNTER BATTENS

1 It is important to note that counter battens need not be marked or graded where they

BATTENS

are fully supported by the rafters. In cases where they are used to restrain insulation boards and are subject to upward bending loads they should be graded.

- 2 If counter battens are used to provide a ventilation gap beneath the roof covering, there is a potential risk of high levels of moisture, and it may be advisable for them (and the roofing battens fixed above) to be preservative treated in order to provide the required durability.

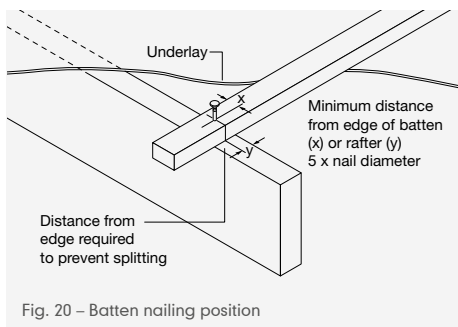
FIXING BATTENS

- 1 Minimum batten length: where there are at least three supports, batten lengths should span over those three supports.
- 2 Splay nail each batten end and nail battens to each rafter.
- 3 On trussed rafter roofs for interlocking tiles, allow not more than one joint in any four consecutive battens on same support.
- 4 On trussed rafter roofs for Plain tiles, allow not more than three joints together in any twelve consecutive battens on same support.

- 5 Batten sizes given in table on page 20 should be taken as minimum dimensional requirements.
- 6 Take care that nails used to secure tiles do not penetrate underside of battens or underlay.

BATTEN END CLIPS

For use with battens when installing dry verge systems, the Marley batten end clip ensures quick easy and positive fixing of verge units to batten ends. See pages 135-169 for further application information.



ROOF BATTENS

- 1 Fix specified battens up roof slope on top of rafters ensuring minimum 40mm nail penetration into rafters (smooth shank).
- 2 Nail counter battens at maximum 300mm centres vertically up roof slope where boarding is used to coincide with line of rafters.

WALL

- 1 Fix specified battens to boarding/sheathing/sarking in line with vertical supports, or to masonry wall as specified.
- 2 Secure counter battens to masonry walls with improved nails or plugs and screws.

More about
JB-Red Battens

See page 22

JB RED ROOFING BATTENS

JB Red battens, available from Marley, and part of our complete 'roof system' are a sure way of ensuring compliance. They not only fully comply with BS 5534, but are also recognised by third party conformity certification.



Each batten is laser scanned and graded prior to delivery, providing all the assurances required to comply with the British Standard – ensuring the highest quality of batten available with the least waste and lowest risk to health and safety.

The RED colour means that JB Red battens are highly visible on site, therefore Local Authority Building Control, NHBC and other inspectors can see that high quality, pre-graded and compliant product has been used.

JB Red roofing battens have full chain of custody (FSC or PEFC) certification.

JB Red have the following benefits:

- Pre-graded to all the size and strength requirements of BS 5534 for roofing battens
- Marked according to BS 5534 showing supplier name, origin/species, grade and size
- The product and process is UKAS third party assessed by the BBA with a BBS Agrément certificate
- JB Red is LABC registered and is approved for use by local authorities
- Manufactured from slow grown, high grade timber
- Only kiln dried sideboard timber is used to ensure stability and dimensional accuracy
- Treated to BS 8417 Usage Class 2, using Koppers MicroPro™ with a unique red colour
- Carries a 60 year lifetime guarantee against insect attack and wood rotting fungi (when installed correctly in accordance with the requirements of Usage Class 2).
- Reduced wastage through state of the art mechanical grading

CUTTING TILES

All cutting of tiles should be carried out in well ventilated areas to prevent the inhalation of dust, in accordance with Health and Safety recommendations.

- 1 Wherever possible, avoid dust inhalation by using cutting equipment fitted with dust extraction or dust suppression.
- 2 Always wear appropriate personal protective equipment (goggles/protective clothing/ear defenders/and approved respirator) when mechanically cutting tiles.

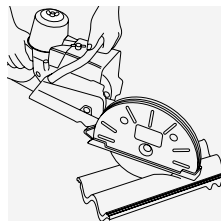


Fig. 22 – Use a disc cutter for mitring or cutting tiles to rake

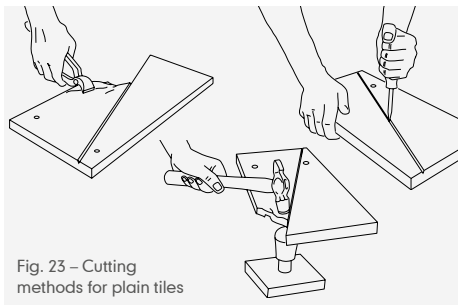


Fig. 23 – Cutting methods for plain tiles

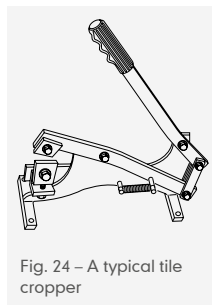


Fig. 24 – A typical tile cropper

See HSE guidance on Respiratory Protective Equipment (RPE) at hse.gov.uk

- 3 After cutting or drilling tiles, brush off all dust from the surface to avoid staining.

Product Data Sheets which comply with the Control of Substances Hazardous to Health (COSHH) regulations are available for all Marley roofing products.

- 4 Avoid cutting tiles that are laid in situ, particularly open valleys, as this may cause damage to the valley lining, and is also a health and safety hazard.

CLAY AND CONCRETE INTERLOCKING TILES

- 1 Traditionally, tiles for hips and flashings are cut using a hammer or pincers.
- 2 Tiles cut to rake or mitre in open details, e.g. valleys, external angles, should be trimmed with a disc cutter (Fig. 22) to ensure a neat finish.

CLAY AND CONCRETE PLAIN TILES

- 1 Traditionally, tiles for hips and flashings are cut using a hammer or pincers (Fig. 23) and tile cropper (Fig. 24).
- 2 Tiles cut to rake or mitre in open details, e.g. valleys, external angles, should be trimmed with a disc cutter.



COSHH Product Data Sheets

Tel: 01283 722588

Or visit: marley.co.uk/sustainability

FLASHINGS AND WEATHERINGS

INTRODUCTION

Whilst lead sheet is the most common material for flashings and weatherings for tiled and slated roofs, pre-formed flashings and other lead replacement products are growing in popularity. These represent a much lower material cost and can be installed without the need for specialist tradesmen.

Marley offers a range of pre-formed, plastic tile soakers and GRP systems that greatly reduce the requirement for specialist labour and expensive lead material.

Lead is malleable and can be easily dressed to fit the multi-curved contours of profiled interlocking tiles or flat slates and tiles.

BS EN 12588* gives the specification for lead for use in roof flashings and weatherings as summarised in the table.

* BS EN 12588 – ‘Lead and lead alloys. Rolled lead sheet for building purposes’.

The following rules apply when using lead as a flashing and weathering:

- 1 Single pieces should be limited in size (the thinner the piece, the smaller the size) so that natural expansion and contraction is kept to a minimum and the risk of severe distortion (with associated risks of fatigue cracking) is avoided.
- 2 Fixings (while not restricting thermal movement) must be adequate to support the lead and (dependent on exposure) retain it in position.
- 3 Joints must allow for thermal movement, yet remain weathertight for the location in which they are used.



Individual Dry Soakers

See page 211

LEAD SHEET FOR BUILDING PURPOSES TO BS EN 12588

Code No.	Colour code	Thickness (mm)	Weight (kg/m²)	Max. length (mm)	Uses
3	Green	1.32	14.97	1.0	Soakers
4	Blue	1.80	20.41	1.5	Flashings / inclined valley gutters / saddles
5	Red	2.24	25.40	1.5	Horizontal valley gutters

FLASHINGS AND WEATHERINGS

Flashings at the head of slated or tiled roofs should lap the top course slates or tiles by a distance which will vary according to the pitch of the roof (see Fig. 26).

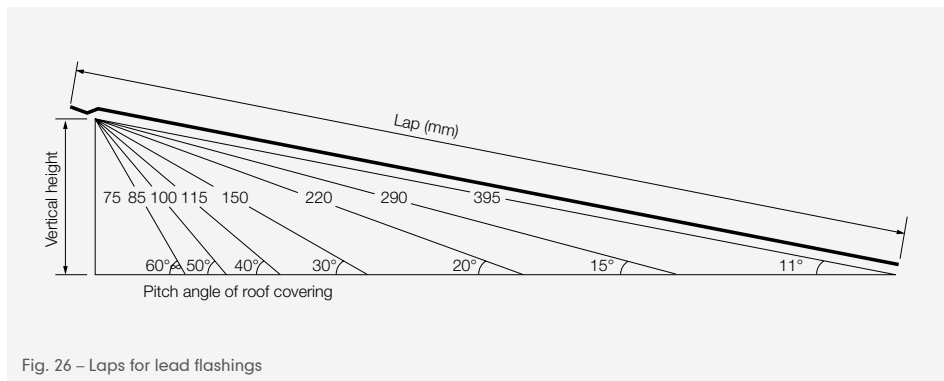
- 4 All lead flashings and soakers should be treated on both sides with patination oil to prevent water run-off and moisture-containing lead oxide from staining the roof covering.

Flashings and weatherings may also be formed from copper, aluminium or zinc as prescribed in BS 5534.

Proprietary materials formed using GRP, PVC or colour coated aluminium with a bituminous adhesive backing should be fixed in accordance with the manufacturers recommendations.

INTERLOCKING AND PLAIN TILE DETAILS

At all abutments where the tiling meets walls or chimneys use an adequate flashing material to weather the junction.



TOP EDGE ABUTMENT

- 1 Turn roofing underlay 100mm up abutment.
- 2 Fix top tiling batten as close as possible to abutment.
- 3 Complete tiling in the usual way.
- 4 Chase out abutment wall and insert lengths of Code 4 lead, not more than 1.5m long and wedge in with small pieces of lead not less than 450mm apart.
- 5 Lead should be wide enough to give at least 150mm cover to top course of tiles
- 6 Vertical upstand should be 75-100mm.
- 7 Lap each length of lead by not less than 100mm.
- 8 Dress lead to profile of tiles (Fig. 27).
- 9 Secure lead flashings with copper or stainless steel clips with frequency dependent on exposure (see Lead Sheet Association recommendations).

(e.g. below 30° this increases to 200mm at 15° rafter pitch).

FLASHINGS AND WEATHERINGS

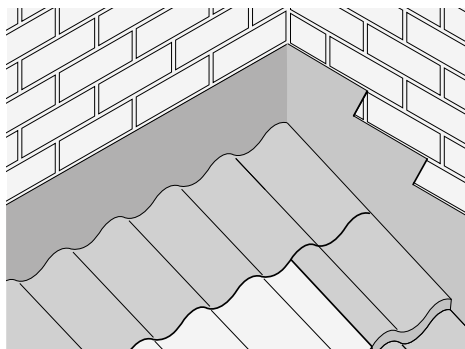


Fig. 27 – Top edge abutment

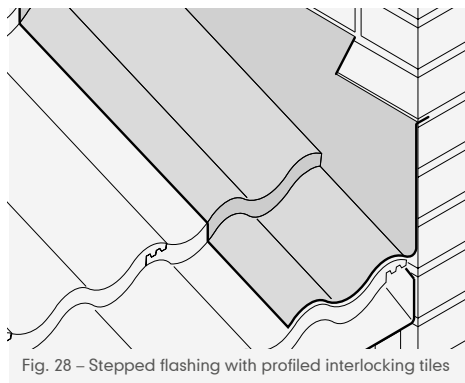


Fig. 28 – Stepped flashing with profiled interlocking tiles

SIDE ABUTMENTS

There are four common ways of weathering a side abutment with interlocking tiles:

- 1 Stepped cover flashings.
- 2 Secret gutters.
- 3 Combination of stepped cover flashing above secret gutter.
- 4 Marley dry fix soakers

STEPPED COVER FLASHING

- 1 Turn roofing underlay 100mm up abutment.
- 2 Finish tiling battens as close to abutment as possible.
- 3 Lay tiles to butt as close as possible to wall.
- 4 Cut a piece of Code 4 lead to form a combined step and cover flashing.

- 5 Flashing should not exceed 1.5m in length and should be 150 - 200mm width or wide enough to cover the first roll, whichever gives the greater cover.
- 6 Chase out brickwork mortar joints and push folds of flashing into chases and wedge in with small pieces of lead.
- 7 Dress cover flashing as tightly as possible to tile profile (Fig. 28).
- 8 Repoint brickwork.
- 9 In areas of high exposure or when dressing lead over flat tiles, use clips to hold cover flashing in place. When using this type of flashing with flat tiles below 25°, increase cover of flashing over tile to 200mm.

FLASHINGS AND WEATHERINGS

ABUTMENT WITH SOAKERS AND STEP FLASHINGS

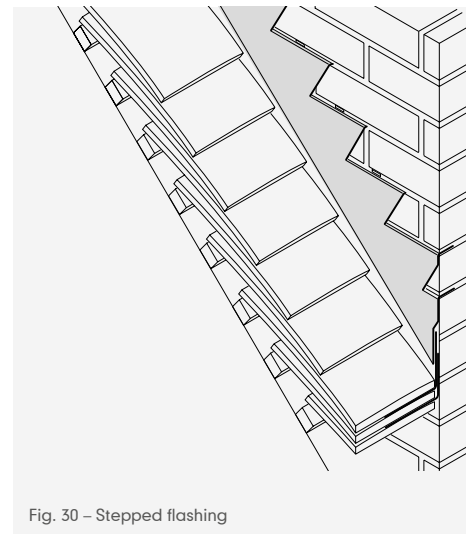
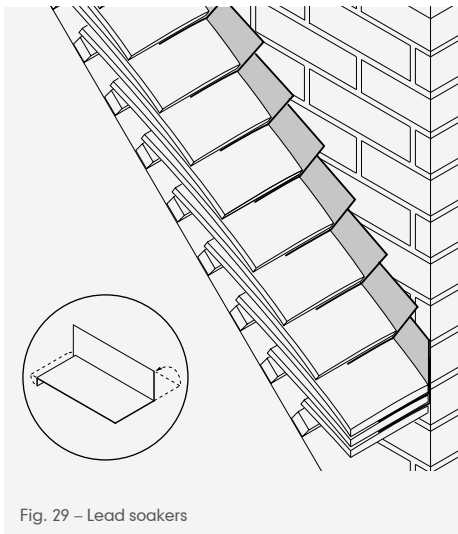
Soakers are used where double-lap Plain tiles abut a wall.

- 1 Turn underlay 50mm up abutment and cut tiling battens 10-25mm short of the wall and fix securely.
- 2 Lay tiles close to abutment with a soaker fitted between each tile.
- 3 Form Code 3 lead soakers with an upstand of 75mm to place against abutment. They should be 175mm wide and 190mm long allowing a 25mm downturn over back of tile (Fig. 29).

After all tiles and soakers have been fixed, insert a stepped flashing into abutment wall and dress down over upturned edges of soakers (Fig. 30).

DRY SOAKERS

A range of BS 5534-compliant, easy-to-install polypropylene dry soakers is available as an alternative to lead. For details, see page 211.



FLASHINGS AND WEATHERINGS

SECRET GUTTER WITH COVER FLASHING

A secret gutter must be formed when using single lap flat interlocking tiles and slates. Maximum security can be achieved by a combination of both secret gutter and cover flashing.

- 1 Form secret gutters before starting tiling.
- 2 Fix a support between last rafter and abutment. This should be a minimum of 75mm wide and run the full length of abutment.
- 3 Fix a splayed timber fillet at discharge point to raise lead lining to the right height. Avoid backward falls (Fig. 31).
- 4 Fix counter batten along outer edge of rafter.
- 5 Line gutter with Code 4 or 5 lead, in lengths of not more than 1.5m.
- 6 Lap each strip offered over the lower one by a minimum 150mm and fix with copper nails at head.
- 7 Turn up lead welts to provide a weather check and exclude birds and vermin from entering tile batten space.

- 8 Gutter should be a minimum of 25mm deep and have a vertical upstand of no less than 65mm above top surface of the tiles or slates.
- 9 Fit a stepped flashing, chased into brickwork as before and dressed over vertical upstand.
- 10 Turn roofing underlay up side of counter battens and butt tiling battens up to counter batten.
- 11 Lay tiles to leave a gap of 15mm by the side of abutment (Figs. 32 and 33).

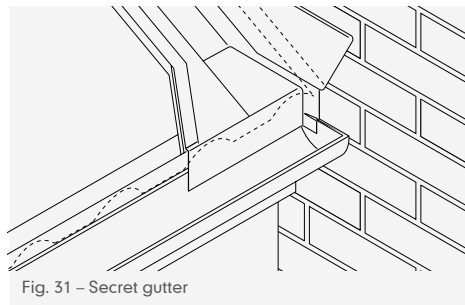


Fig. 31 – Secret gutter

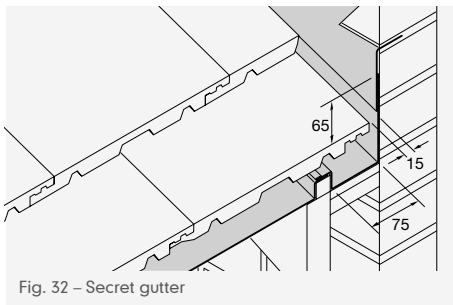


Fig. 32 – Secret gutter

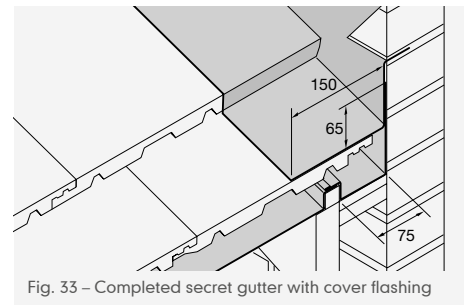


Fig. 33 – Completed secret gutter with cover flashing

FLASHINGS AND WEATHERINGS

DORMERS

Treat tiled dormer roofs in a similar way to the main roof work. However, single lap tiling is less suitable for small covered areas and for a dormer, it is generally preferable to adopt an alternative form of covering.

- 1 When dormer cheeks are tile hung, close cut vertical tiles to rake of roof over a flashing fixed to side of dormer and dress well into the adjacent tiles. Formation of a secret gutter is not recommended.

BACK GUTTERS

Back gutters may be lead welded off site and positioned when tiling is undertaken. A gutter should be formed where the bottom edge of tiling meets an abutment. Form the gutter before tiling, but after felting and battening is complete.

- 1 Fix a layboard to support lead lining, with a tilting fillet, close to abutment to flatten pitch of lead.
- 2 Dress a sheet of Code 5 lead (width of abutment plus 450mm) into position with a vertical upstand of at least 100mm up abutment.

- 3 Dress extra width of lead around corner of abutment after any side abutment weathering has been fitted.
- 4 Dress upper edge of lead over tilting fillet and turn it back to form a welt (Fig. 34).
- 5 Chase abutment, insert a cover flashing of Code 4 lead and dress it over vertical upstand of gutter.

ROOF PROTRUSIONS

The treatment of tiling against chimney stacks, skylights and other similar projections through the roof surface should be similar to that described for abutments where appropriate (Fig. 35).

- 1 Make perforations for pipes, chimney stays, supports for ladders etc. weathertight by dressing over and under tiling, with a lead or copper slate to which a sleeve is burned or soldered.
- 2 Boss sleeve around pipe or stay, and seal at top by a collar.

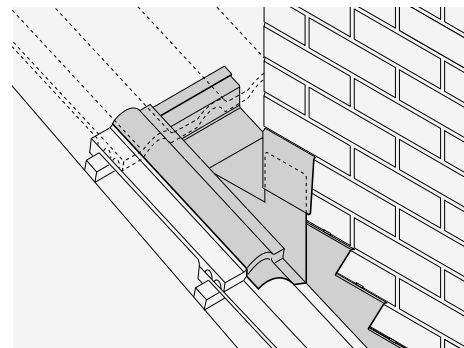


Fig. 34 – Back gutter

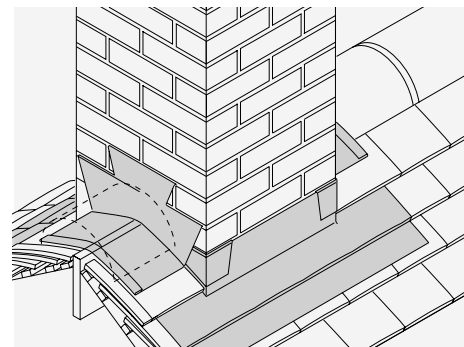


Fig. 35 – Roof chimney at ridge line

FLASHINGS AND WEATHERINGS



Fig. 36 – Saddle at ridge/roof/valley intersection

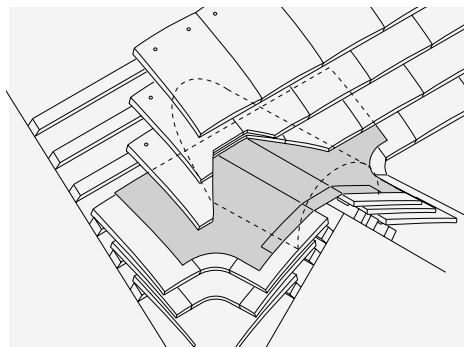


Fig. 37 – Saddle at ridge/roof/intersection

SADDLES

The following details can apply to any type of valley or hip/ridge intersection.

- 1 Use Code 4 lead not less than 450mm square and large enough to give a lap of at least 150mm over gutter lining on each side.
- 2 Saddles should be capable of being readily dressed down when in position (Figs. 36 and 37).

FIXINGS

Clips – clips for flashings are important in all roofing applications and where used should be fixed at 300-500mm centres, depending on the exposure of the building.

Clips may be formed from the following materials:

Lead – only suitable for sheltered locations with a thickness the same as that of the flashing it is fixing, as detailed by the Lead Sheet Association.

Copper – should be 0.6mm thickness (min.) and may be thicker for very exposed locations.

Stainless steel – should be 22swg or 28swg thickness and is used for very exposed locations or where the fixing point is more than 75mm from the free edge of the flashing.

NAILS AND SCREWS

Copper wire nails (with jagged shanks) should be a minimum 25mm long x 10 gauge. Stainless steel annular ring shank wire nails should be a minimum 25mm x 12 gauge. Screws should be brass or stainless steel, minimum 25mm long x 10 gauge.

FLASHINGS AND WEATHERINGS



Flashing and weathering check points*

- Lead can be difficult to work, particularly heavier codes. In cold weather take care not to split or puncture it whilst working.
- Always use proper lead working tools. Hammers are not recommended for dressing lead.
- Nail and/or clip all tiles and slates next to an abutment.
- Fillets of mortar are not recommended at abutments because cracking of mortar brings high risk of failure.
- Galvanized, aluminium, zinc and cut copper nails or tacks should not be used for fixing leadwork.
- Temporarily place a length of cloth beneath lead before dressing down onto lightweight tiles and slates to avoid breakage.
- Avoid contact with aluminium in a marine environment.
- Use patination oil to avoid lead staining.

* Full details on fixing and use of lead flashings and weatherings can be obtained from the Lead Sheet Training Academy: Unit 10, Archers Park, Branbridges Road, East Peckham, Tonbridge, Kent TN12 5HP Tel: 01622 872432 www.leadsheet.co.uk

FIRE STOPPING

The spread of fire within a building or from one property to another can be restricted by providing compartments between one another by a fire resisting construction, one of the most common examples are separating walls between dwellings.

Shown below is general guidance for domestic situations only.

For further information on detailing separating walls between dwelling and other buildings that require a fire resistance please refer to the Building Regulations Approved Document B and/or consult with your local authority Building Control Department.

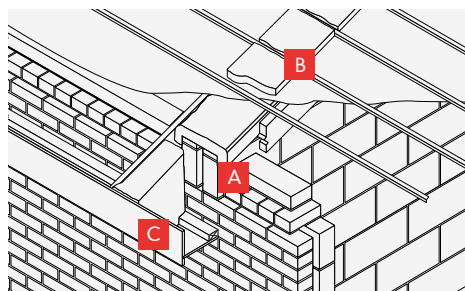


Fig. 38 – Separating wall with fire stop

SEPARATING WALL JUNCTION WITH ROOF

The use of a mortar bedding trowelled onto the wall under and between the battens is not recommended, as gaps are often left under the tiles. Additionally, if differential settlement occurs, this will lead to hogging or humping of the roof tiling above the separating wall.

It is recommended that a glass fibre or similar compressible material is selected to limit the spread of smoke and flame.

The following points should be adopted to ensure a satisfactory detail:

- 1 When trimmed to roof slope, ensure that party wall is 25mm below top edge of adjacent rafters. Mortar if necessary to achieve a fair line.
- 2 Select fire-stopping material of rock wool, slag wool or glass fibre quilt, resilient enough to fill irregular spaces but not so resilient to lift or dislodge tiles.
- 3 Before felting and battening, ensure quilt (A) is laid on top of wall with edges tucked between wall faces and adjoining rafters.

- 4 After felting and battening, ensure lengths of quilt (B) are laid between battens as tiling proceeds or fixed by spot sticking in place before tiling.
- 5 Check eaves void is filled with fire stopping material (C) to achieve a tight fit.
- 6 Fire resistant material must be securely fixed without support from the soffit board (Fig. 40). The following materials can be useful for this purpose:
 - i) Wire reinforced mineral wool 50mm thick.
 - ii) Mineral wool, wired to expanded metal lath.
 - iii) Semi-rigid mineral wool batt, spiked or wedged in place.
 - iv) Compressed mineral board cut to close fit.
 - v) Plywood min. 19mm thick treated with flame retardant.
 - vi) Sand-cement (pre-mixed vermiculite cement) render on expanded metal lath.

Note: Prior to starting work, it is recommended that the Local Authority Building Control Officer is contacted to confirm approval of the proposed work.

RIGID BOARDING/SARKING AND COUNTER BATTENS

In Scotland, some parts of Northern England, and for some types of timber construction, it is traditional to fix rigid or semi-rigid boarding or sarking directly above the rafters.

Boarding or sarking may consist of tongue and grooved or square edged timber boards, plywood, wood wool slabs, fibreboard, particle board, orientated strand board (OSB) or cement particle board as specified in BS 5534.

When using boarding or sarking, it is necessary to fit counter battens above* to provide a drainage path to the eaves gutter beneath the battens for any moisture that may have accumulated beneath the roof covering. The fixings for boards, battens and counter battens should be of sufficient length to resist the design wind loadings, but should provide at least 40mm penetration into the rafter or support and be of at least 3.35mm dia.

* Min. 19mm depth (to prevent the batten splitting upon nailing).

The following is a summary of general requirements to be considered when using rigid sarking or boarding:

- When completing groundwork on roof, first lay underlay onto the sarking boards lapped horizontally and vertically in accordance with guidance shown on pages 12-19.
- Fix counter battens through sarking into rafters by at least 40mm.
- Nail battens above counter battens at required tiling gauge.
- Allow for extra thickness of counter battens and sarking at eaves when fixing fascia or tilting fillet, and at verge, by building up outer layer of brickwork.
- Cut the rigid sarking back at inner leaf of brickwork.
- Lap underlay at ridge over apex and finish sarking and counter battens 15mm short of this apex.

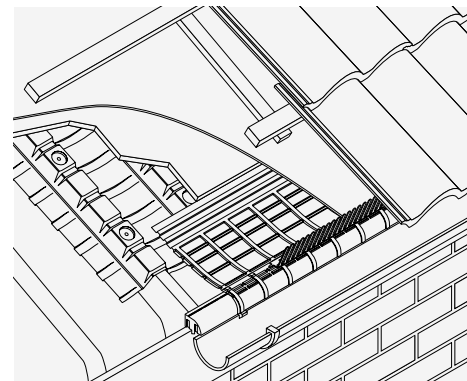


Fig. 39 – Battens and counter battens at eaves above rigid boarding and underlay

- Where ventilated dry fix ridge systems are used, cut sarking and underlay back to provide ventilation.
- The fixing of all tiles should comply with BS 5534 and a site specific fixing specification.

RIGID BOARDING/SARKING AND COUNTER BATTENS

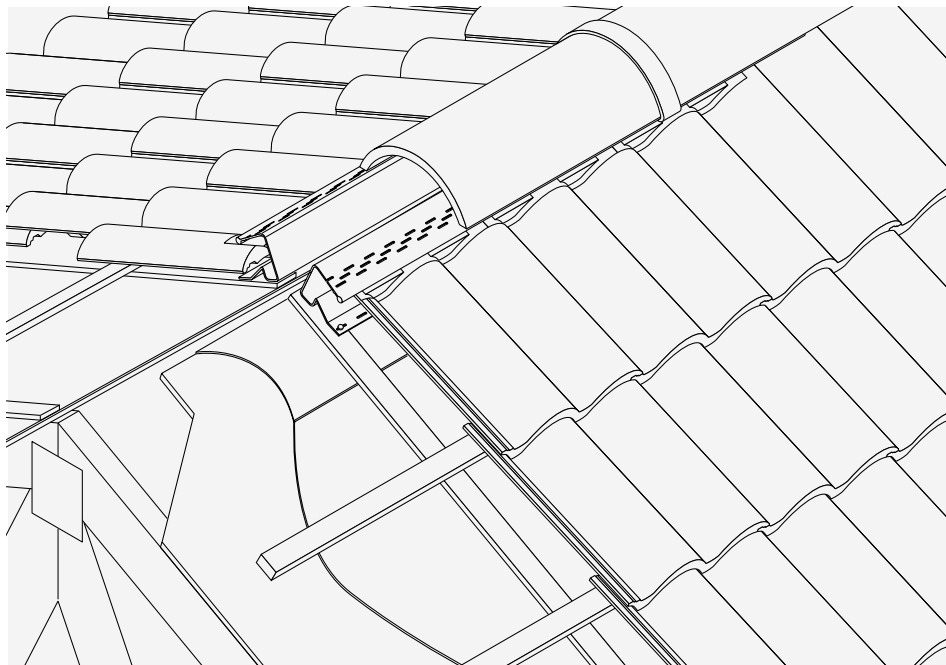


Fig. 40 – Battens and counter battens at ridge above rigid boarding and underlay (cut back at apex), with Marley ventilated dry ridge system

The increased use of the roof void as habitable space has meant that rigid polystyrene insulation boards are now laid above and between the rafters to provide the required thermal insulation. Such designs will require specific detailing with regards to roof ventilation and structural stability. Advice should be obtained from both the insulation and roof membrane manufacturers (such as Marley). Such products require the use of counter battens with specialist fixings to ensure sufficient nail penetration into the rafters and advice should be obtained from the insulation manufacturer.

Other proprietary tile support systems may be used and should be fixed in accordance with the manufacturer's recommendations.

FIXING MATERIALS

TILE FIXINGS

To guard against 'nail sickness', BS 5534 recommends the use of aluminium or stainless steel nails under normal conditions of exposure. Plain or galvanised nails may be used for fixing battens to rafters, but care must be exercised when there is high humidity, or where it is known that certain timber preservative treatments may corrode steel, zinc or aluminium. In such cases, stainless steel nails should be used.

All Marley tile fixings have been tested to the requirements of BS 5534 which includes a test method to establish the resistance of clips, nails and hooks to wind uplift.

TILE NAILS

Nails for use with tiles should be of copper, aluminium, stainless steel, phosphor or silicon bronze. Aluminium nails intended for use with tiles should conform to BS 1202-3 and should be clout head nails of 3.35mm or 2.65mm diameter. The length of nail will be determined by the required wind uplift and the design of the tile.

Stainless steel nails for use with tiles should conform to BS EN 10088-3, grade 302, 304, 315, 316, 321 or 347, and are recommended for coastal areas, areas of high exposure, or where there is a risk from chemical reaction.

OTHER SPECIALIST NAILS

Valley fixing and gutter bonding nails are also available for the fixing of these areas of the roof.

BATTEN NAILS

Nails for use with battens, counter battens and boarding (board sarking) should conform to BS EN 10230-1. They may be uncoated or, for extra protection and in coastal regions, coated by zinc or zinc alloy coating methods specified in BS EN 10230-1.

UNDERLAY NAILS

Nails for use with roofing underlays should be clout head nails of not less than 3.0mm shank diameter and 20mm length made of copper; aluminium alloy or steel coated by any of the zinc or zinc alloy coating methods specified in BS EN 10230-1.

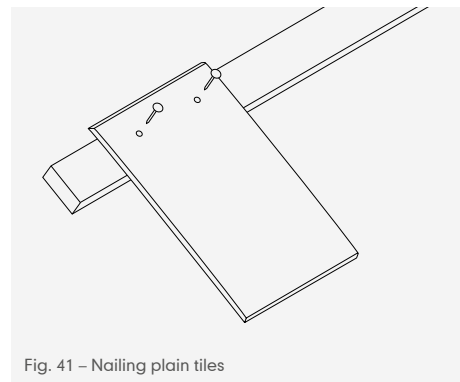


Fig. 41 – Nailing plain tiles

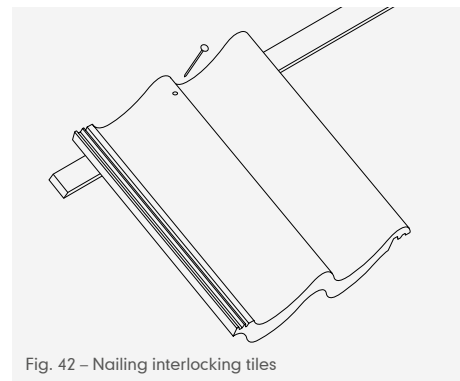


Fig. 42 – Nailing interlocking tiles

FIXING MATERIALS

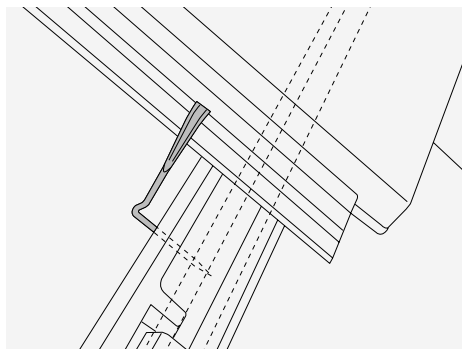


Fig. 43 – SoloFix interlocking tile clip

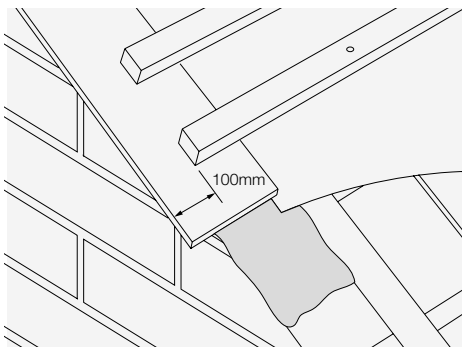


Fig. 44 – Undercloak using fibre cement strip

SOLOFIX TILE CLIPS

Marley now offers, as standard, SoloFix tile clips as an improved means of meeting the greater requirements for clipping stipulated by BS 5534. Made from a unique material called ZiAl, these one-piece clips are 30% quicker to install than their traditional equivalent and can be used in all areas of exposure in the UK.

All Marley proprietary fixings are fully tested and exceed the requirements of BS 5534 in terms of material specification and strength.

SECRET CUT TILE CLIPS

A clip to provide secure mechanical fixing of small pieces of cut tile at hip, valley and other areas where normal fixings are untenable. Compliant with BS 5534.

UNDERCLOAK

Where an undercloak is used as a support for mortar bedding it may take the form of a fibre cement sheet strip 1200mm long x 150mm wide with a roughened surface to assist the mortar bond (Fig. 44).

SLATER'S TUB AND FIXINGS

- All the fixings you need in a tub
- Perfectly shaped to sit safely on roof
- 2000 copper nails (30 x 2.65mm gauge)
- 1000 copper disc rivets
- Complies with BS 5534



Roofing fixing spec

A tool to create fixing specifications based on the geographical location and building dimensions of specific building projects: marley.co.uk/tilefix

FIXING MATERIALS

MORTAR

The mortar used in roof construction should conform to the recommendations given in BS 5534 (Table 6). Mortar should typically consist of the following mixes:

- 1 3:1 with blended sand: Soft sand and sharp sand mix, with the sharp sand making up no less than one third of the sand content, to one part Portland cement and plasticizer in accordance with manufacturers' instructions.
- 2 3:1 with coarse building sand: Some building sands are coarse in nature and have been found to have a size particle distribution in line with a blended mix of fine building sand and sharp sand. Where 70% to 90% of the sand is able to pass through a 0.5mm sieve, this may be used as part of a 3:1 sand cement mix with plasticizer, in accordance with manufacturers' instructions.

Notes: If the use of other mixes is being considered, attention needs to be given to workability of the mix and possible application problems, e.g. the need to avoid unsatisfactory bedding on steep pitches. Guidance on the use of mortar is given in NFRC Technical Bulletin 27 [12].

MORTAR BEDDED APPLICATIONS

- Check correct mortar mix for bedding tiles and fittings.

The following is good practice:

- Wet all products prior to bedding.
- Ensure all bedding surfaces are clean and free from harmful matter.
- Apply a bonding agent to the surface of smooth faced tiles to improve mortar bond.

IMPORTANT: The use of mortar for bedding tiles may be affected by differential movement of the roof structure causing the bond between roof element and tile or slate to be compromised.

BS 5534 states that all mortar bedding must now be accompanied by a mechanical fix.

Fixing materials check points

When fitting the appropriate nails, clips or hooks, the following applies:

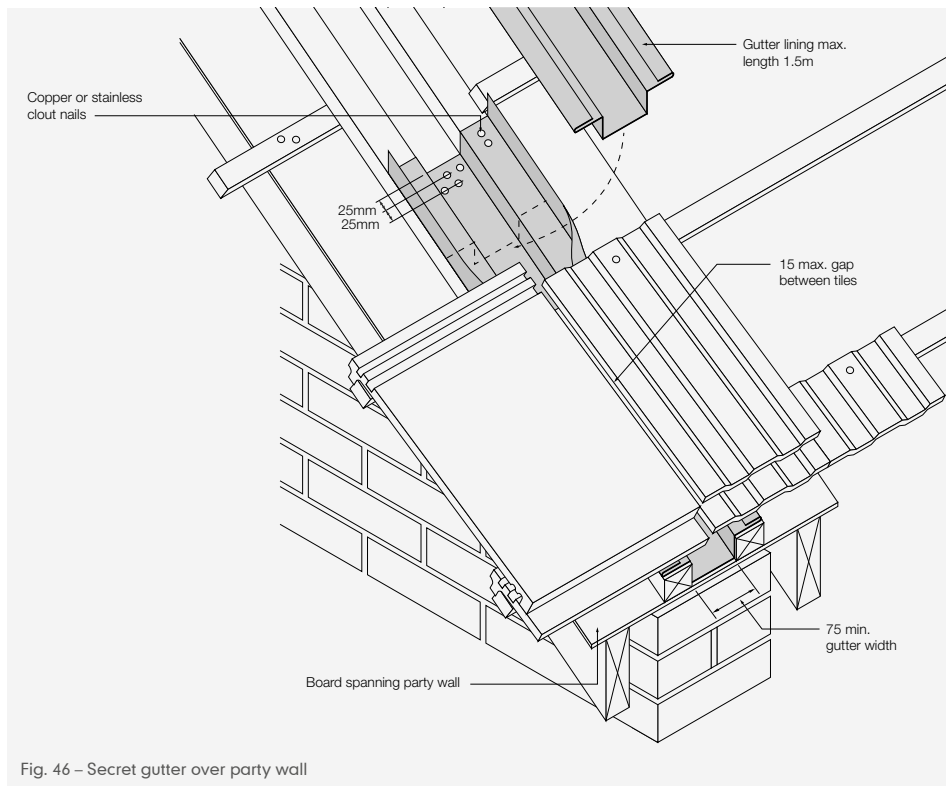
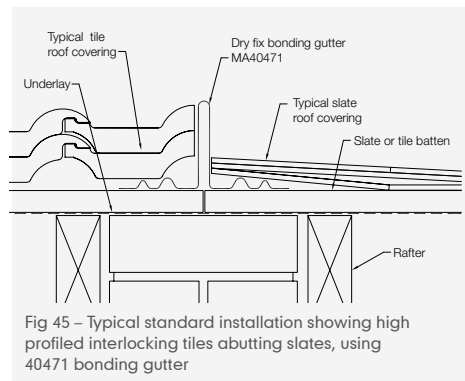
- Nails used to fix tiles should be driven home and/or firmly secured into the centre of the batten or timber to which they are fixed in order to maximise their effect in use.
- Clips used to fix tiles should be located and aligned so as to fit correctly onto the appropriate interlock/headlock in order to maximise their effect in use.
- Clips used to secure verge and valley tiles or slates should be twice nailed to the top of the batten or timber to which they are fixed, with the top of the clip firmly securing the edge of the tiles.
- Always check the fixing specification before starting to lay tiles. If in doubt nail and clip each tile or slate to ensure maximum security.

REPAIR AND REPLACEMENT

ROOF RENEWAL DETAIL

Renewal of roof covering on semi-detached or terraced properties may lead to different tiles or slates being installed than those on a neighbouring property. An effective method of weathering this junction is to use either a Marley GRP dry bonding gutter system or form a secret gutter detail as shown in Fig. 46.

This method is a good alternative to a bedded hip detail which is commonly used.



REPAIR AND REPLACEMENT

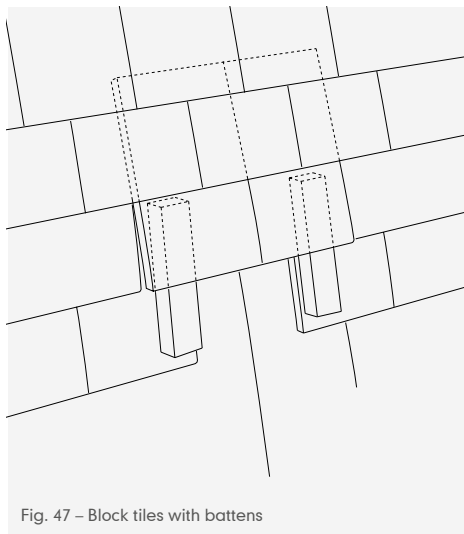


Fig. 47 – Block tiles with battens

PLAIN TILES

Plain tiles are not normally nailed in every course, and in such circumstances the following procedure applies:

- 1 Remove damaged tile by raising up the neighbouring tiles with a timber wedge and sliding the tile out with the nibs clearing the top of the batten. Any nails should be removed and disposed of safely (Fig. 47).
- 2 Insert replacement tile back into position using the same technique in reverse. If required, re-nail the replacement tile using 2 No. 38mm x 2.65mm aluminium nails.

A dab of mastic can be placed on the underside to prevent movement.

INTERLOCKING TILES

Individual tiles or slates that are damaged during or after installation should be replaced as soon as possible using a sound matching unit fixed in accordance with the nailing and/or clipping specification. In some cases, this may not be possible without stripping back a large area of tiling/slating.

Superficial coatings or repairs to damaged units using adhesives or other mechanical devices should not be used as their long term performance may be limited.

If extensive repairs to the roof are required, sectional or complete re-tiling/slating should be considered, as this may be the most practical and economic solution.

Roofs and walls clad with tiles and slates should be treated as fragile, and adequate precautions should be taken, including the use of crawling boards and roof ladders (suitably packed to prevent damage to the roof covering) or access platforms when accessing the roof for the purposes of maintenance or repair.

REPAIR AND REPLACEMENT

Failure to use adequate access equipment can damage the tiles and fixings and may be in contravention of Health and Safety Regulations.

- For a tile that is nailed, the neighbouring tiles should be lifted to expose the nail(s), which should be extracted carefully using a slate ripper or hacksaw blade and disposed of safely. The replacement tile can be inserted using the same procedure and re-fixed to the adjacent fixed tiles by using an epoxy resin adhesive applied to the interlock/overlock and head lap area. Care must be taken not to bridge anti-capillary bars or interlocking water channels so that water can drain freely.
- For a tile that is clipped, the clip can be prised off the interlock and the nail extracted, with the damaged tile removed as described above. The new clip and nail can then be fitted as normal (avoiding the previous nail hole), allowing the clip to rest in the clip recess of the adjacent tile. Hold up the clip, and slide the replacement tile into position, allowing the clip to be released onto the sidelock of the tile.
- For a tile that is both nailed and clipped, it is necessary to establish the position of the tile nail holes of the course directly below the replacement tile. Mark out the corresponding hole positions on the top surface near the tail of the tile. Fit the replacement using the above procedure. Drill a 4mm dia. hole through the top of the replacement tile, directly above the nail hole of the tile below. Secure both courses using a stainless steel screw with cap and washer (40-120mm long dependent on tile depth) to provide a minimum 15mm penetration into batten.
- The above procedure can also be used to secure the tail of the course above the replacement tile.
- If there are a number of damaged tiles that are clipped, it may be necessary to strip back the roof to the nearest verge or valley/hip in order to re-clip the replacement tiles.

Note: It is important that both washer and cap form a waterproof seal around the hole. If necessary, a mastic sealant should be applied around the screw where it passes through the lower tile nail holes.

For individual tiles, some adhesives can be used. Install in accordance with manufacturer's guidelines.



CONCRETE AND CLAY PLAIN TILES

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46 VERGES

47 HIPS

49 VALLEYS

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53 VERTICAL TILING



Dry fix and ventilation systems
For more details, 127-236

SETTING OUT THE ROOF

It is important that the tiler should set out the roof prior to fixing. This will help to save time and avoid unequal overhangs at verges and expensive labour costs in cutting tiles at abutments (Fig. 1).

POSITION OF TOP AND BOTTOM BATTENS

- 1 Batten gauge required must be worked out on site. Fix eaves course batten first and position using one of the following methods:

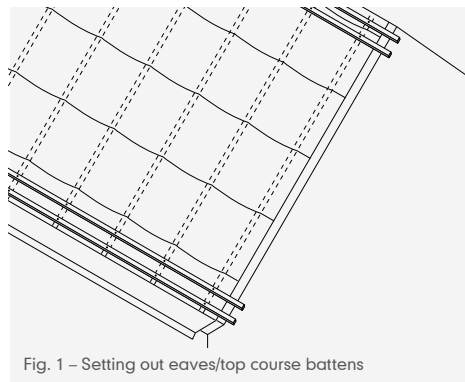


Fig. 1 – Setting out eaves/top course battens

The eaves batten should be set to ensure that the tail of the tile extends over the fascia board by no less than 50mm on the rake (Fig. 2).

Or

Position first full course tile batten at eaves and measure distance from top edge to outside edge of fascia. This distance should approximately equal length of tile less nib depth and gutter overhang.

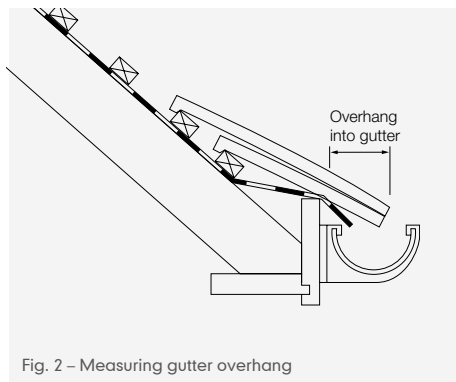


Fig. 2 – Measuring gutter overhang

- 2 Position an additional eaves tile batten below the first full plain tile batten.
- 3 Fix the first full plain tile top course batten so that the ridge tile provides a minimum 65mm cover (Fig. 3).

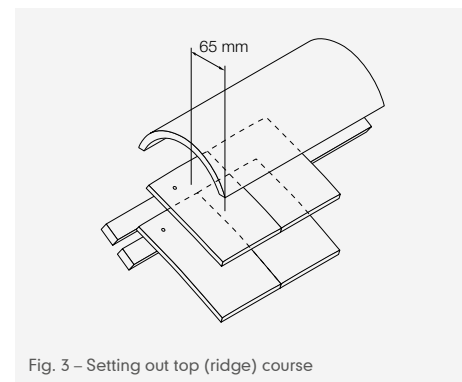


Fig. 3 – Setting out top (ridge) course

SETTING OUT THE ROOF

CALCULATING THE BATTEN GAUGE

- 1 Measure distance between top of full tile batten at eaves and top of full tile batten at ridge/apex.
- 2 Divide distance by maximum gauge of tile being used. Gauge is determined by length of tile less required headlap divided by two, i.e. $\frac{265 - 65}{2} = 100\text{mm}$
- 3 Round figure up to give number of courses up slope as a whole number.
- 4 Divide measured distance by number of courses to give batten gauge.
- 5 The practice of adjusting gauge over last few courses at eaves or ridge is technically acceptable, provided maximum gauge for tile is not exceeded.
- 6 If necessary, tiles should only be cut in ridge course, drilled and nailed.
- 7 Re-check the accuracy of the lap by measuring the exposed margin, which is equal to the gauge required (see above).

HORIZONTAL ALIGNMENT

There are several ways of achieving true horizontal alignment:

- 1 Strike a chalk/ochre line at 90° to perpendicular line (Fig. 4).
- 2 Measure two pieces of timber, each the length of the batten gauge minus width of one batten (advantageous for vertical tile hanging).
- 3 Drive nails through a length of timber the distance of batten gauge apart and protruding approximately 5mm. Scribe required gauge onto underlay.

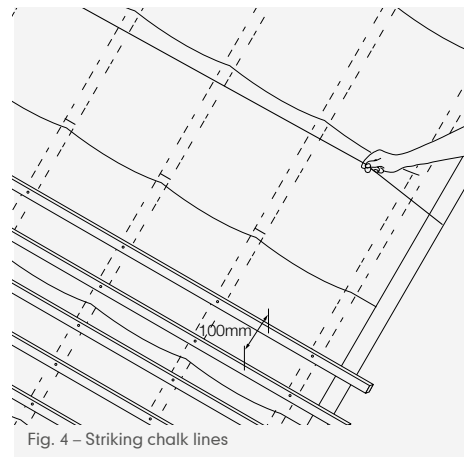


Fig. 4 – Striking chalk lines

SETTING OUT THE ROOF

PERPENDICULAR ALIGNMENT

- 1 Set out roof along eaves starting with correct overhang at right-hand verge.
- 2 Allow a 3mm gap between adjacent Plain tiles.
- 3 Overhang at verges should not be more than 50mm.
- 4 On short eaves, tiles may require cutting where possible. Cut tiles at verges should be avoided but if used should be at least half the width of a full tile.
- 5 Strike perpendicular chalk or ochre lines over eaves to ridge at three tile intervals to coincide with edges of tiles.
- 6 A gauge rod the width of three tiles can be used as an alternative to actual tiles.

COMPLETION OF TILING

- 1 Load out all tiles on the roof evenly before commencing tiling (see page 11).
- 2 Work from right to left (Fig. 5). Depending on fixing specifications, you may leave out third and fourth tiles from left-hand verge and make use of tile battens as a ladder enabling upper part of roof to be reached for fixing ridges.
- 3 On a hipped roof, cut tile and half tiles so that end tiles of each course align with rake of hip.

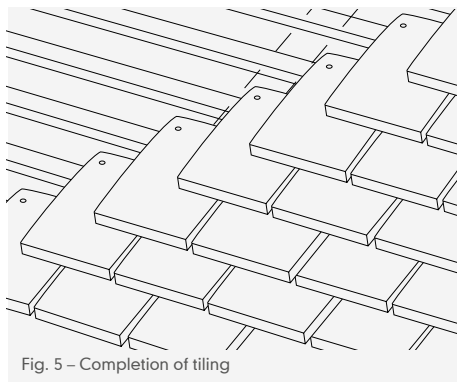


Fig. 5 – Completion of tiling

Setting out check points

- Never exceed maximum gauge for tile used at recommended pitch.
- Avoid cutting tiles wherever possible.
- Never cut bottom edge of a tile.
- Vertical cuts should never be less than half a tile width.
- On adjacent roof slopes of varying pitch, set batten gauge to the lower roof pitch to ensure alignment at intersections.
- Ensure ridge tiles provide a minimum 65mm cover to top course of full length tiles.
- Eaves tiles should lie over the fascia board 50mm on the rake.

EAVES

Eaves have a double course throughout their length using purpose-made eaves tiles for the undercourse.

- 1 Twice nail both courses.
- 2 Eaves course to overhang fascia board so that water discharges into centre of the gutter.
- 3 If gutter is not fixed, an overhang of 50mm should be allowed (Fig. 6).
- 4 A sprocketed eaves detail may be used, provided it is not below 35° pitch.

See page 238 for Eaves fascia heights without ventilation.

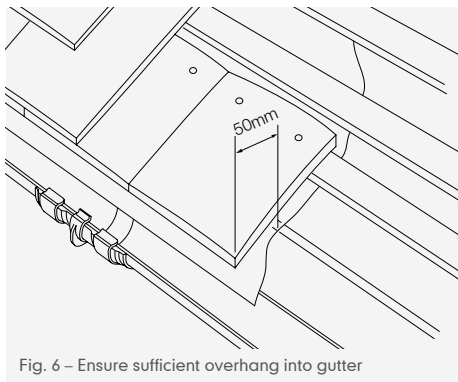


Fig. 6 – Ensure sufficient overhang into gutter

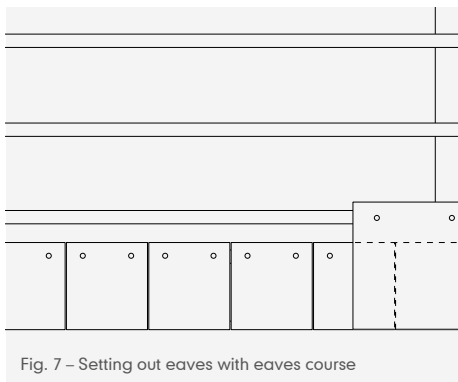


Fig. 7 – Setting out eaves with eaves course

Eaves check points

- Twice nail all eaves tiles.
- Supply support for under-eaves course and eaves course tiles using tilting fillet or fascia board.
- Make allowance for strip ventilators fitted to the top of the fascia when calculating the pitch of the eaves course (see page 128).
- Ensure bottom courses overhang into gutter 50mm.

VERGES

- 1 A plain tile undercloak can be used in place of a fibre cement strip.

- 2 Lay face down with tail edge facing outwards (Fig. 8).

Note: Do not use Plain tiles as an undercloak below 30° pitch.

- 3 Lay verges broken bond with full tiles and tile-and-a-half in alternate courses.

- 4 Bed tiles projecting maximum 50mm over the gable walls or bargeboard.

- 5 Strike off bedding mortar and neatly point in one operation.

- 6 Alternatively, bed tiles in mortar onto a fibre cement undercloak.

- 7 When laid on brickwork or masonry, bed undercloak in mortar and strike off flush with external face of wall, leaving top surface finished smooth and straight; bed tiles forming verge on this undercloak.

- 8 When laid on boarding, nail each undercloak with at least two nails at centres of not more than 300mm.

For plain tile cloak verge tiles, see page 165.

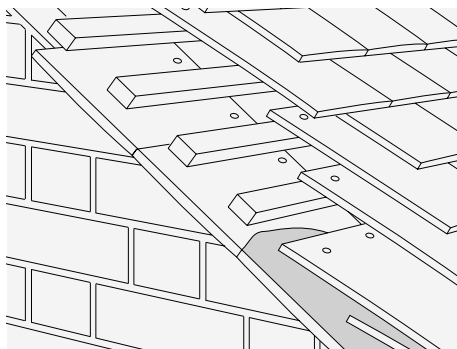


Fig. 8 – Undercloak using Plain tiles

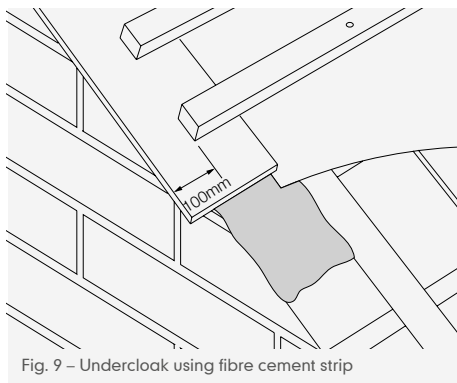


Fig. 9 – Undercloak using fibre cement strip

Verge check points

- Nail all verge tiles.
- All verge tiles must be twice mechanically fixed.
- Always continue underlay across wall cavity and below undercloak (where appropriate).
- Mortared verges should have an overhang of 38 to 50mm.
- Undercloak should have an outward tilt on mortared verges.
- Avoid pointing with a separate mix of mortar.

HIPS

THIRD ROUND HIP TILES

- 1 Edge-bed third round hip tiles onto close mitred tiles with a solid bedding at butt joints.
- 2 Fix a galvanised hip iron at foot of hip as support (Fig. 10).
- 3 Mechanically fix all hip tiles, see page 124.

BONNET HIP TILES*

- 1 Fix supplementary batten to hip tree where required to ensure alignment of bonnet hip tiles and avoid excessive mortar depth.
- 2 Bed in mortar during fixing. Strike bedding off smoothly at lower edges of hip tiles or keep slightly back and point.
- 3 At eaves, solidly bed bonnet hip and fill with dentil or tile slips where possible.
- 4 Straight cut tiles adjacent to each side of bonnet hip to maintain bond and fix with 70mm x 3.35mm aluminium nails (Fig. 11).
- 5 Use tile-and-a-half tiles where necessary, to facilitate cutting adjacent to bonnet hip tiles.

* Can only be used on hips with an equal pitch either side.

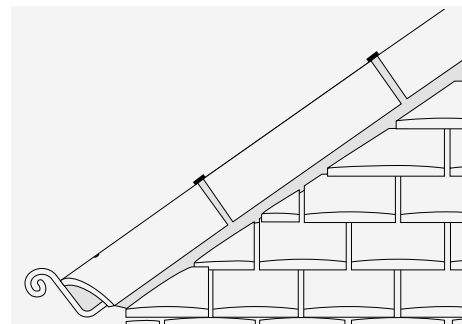


Fig. 10 – Bedded and mechanically fixed third round third hip ridge tiles used as hip capping with hip iron

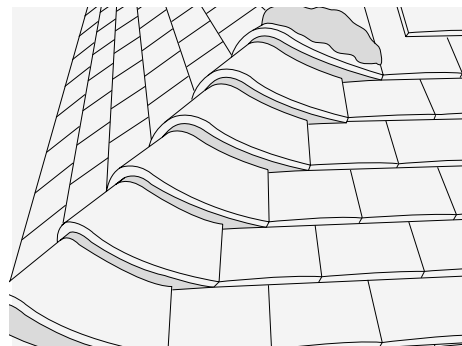


Fig. 11 – Bedded and mechanically fixed bonnet hip tiles

HIPS

CLOSE-FITTING ARRIS HIP AND PURPOSE-MADE HIP TILES

- 1 Fix close-fitting hip tiles with 65mm x 3.35mm aluminium nails penetrating at least 25mm into hip rafter or supplementary batten.
- 2 Bed top of hip tiles to provide seating in mortar.
- 3 Lay and fix bottom hip tile in line with under eaves course.

MITRED HIPS*

- 1 Where tiling does not meet at right angles on plan, cut tile-and-a-half tiles to a close rake to hip line.
- 2 Cut Code 3 lead soakers to extend a min. 100mm either side of hip and fix as required.

* Recommended minimum pitch 30°.



Hip check points

- Fix a suitable hip iron to the base of rafter.
- Close mitre roof tiles where they meet hip and ensure each tile is twice nailed.
- Replace small cuts with tile-and-a-half tiles.
- Mitre hip tiles at ridge junctions ensuring that the end tile does not ride up.
- Cut bottom hip tile to align with eaves.

VALLEYS

VALLEY TILES*

Valleys with plain tiles may be formed with purpose-made valley tiles or open construction, using metal lined valleys.

Valley tiles cannot be used where two roof slopes intersect with different pitches.

- 1 For trussed rafter roofs, support tiling battens at valley where roof slopes intersect.
- 2 Fix timber valley boards between rafters to provide support for tiling battens and valley tiles.
- 3 Lay a strip of underlay at least 600mm wide up length of valley. Overlap on each side with main roofing underlay.

See page 240 for valley widths.

Lay valley tiles without nailing or bedding to main roof tiling (Fig. 12).

- 1 Lay bottom valley tile first and butt adjacent eaves tile to it.
- 2 Keep a true line between valley tiles and main roof tiles.
- 3 Avoid small cut pieces of tile adjacent to valley tile by using tile-and-a-half tiles.

* Can only be used on valleys with an equal pitch either side.

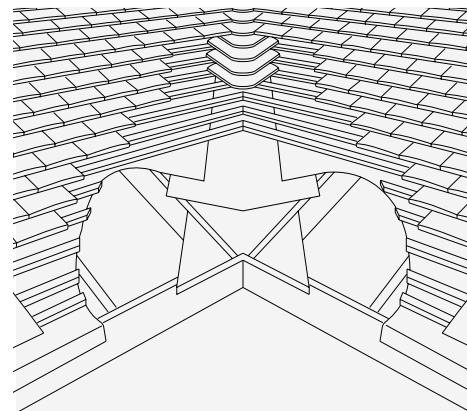


Fig. 12 – Laying valley tiles

VALLEYS

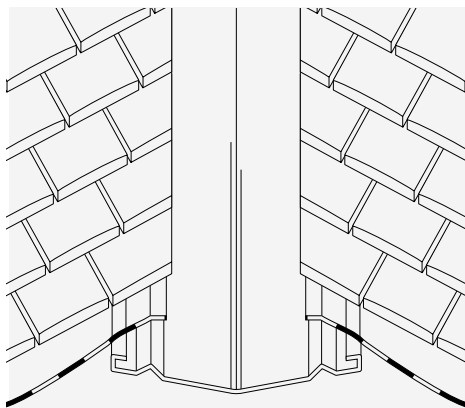


Fig. 13 – Metal valley construction for plain tiles

METAL VALLEYS

Metal valleys may also be used with plain tiles. Exposed raking cut tile-and-a-half tiles should not be bedded in mortar. If concealed mortar is used within the tiling, it should not block the laps.

- 1 Use tile-and-a-half tiles to minimise use of small tile sections at valley.

- 2 Nail all tiles and cut pieces adjacent to valley (Fig. 13) as per the fixing specification.

VALLEY WEATHERINGS

- 1 At head of valley, fix a saddle of minimum Code 4 lead. Length of lap of saddle over valley should be at least 200mm.
- 2 Where ridge intersects a roof slope, step the ridge back where it meets head of intersecting valley; dress a saddle of minimum Code 4 lead under adjacent tiling, and over both valley linings.
- 3 When a valley discharges onto a roof slope (e.g. at dormers), a lead saddle will be required at base of the valley to dress onto adjacent tiling, (see flashings and weatherings pages 24-31).

Valley check points

- Keep an open channel between cut edges of roof tiles (125mm minimum).
- Don't block laps of tiles with mortar since this may cause damming.
- Don't lay bituminous underlay directly beneath a lead valley; heat causes underlay to expand. This may split lead.
- Don't apply mortar direct to lead.
- Nail all tiles either side of valley.
- Valley tiles cannot be used where two roof slopes of different angles intersect.

RIDGES

DUO-PITCH RIDGES

Ridges should be covered using ridge tiles of complementary colour, or contrasting, and texture to that of main roof tiles. Always check that the ridge tile design suits the pitch and type of roof tile being used.

- 1 Edge-bed ridge tiles onto the top course tiles with solid bedding at butt joints (Fig. 14).
- 2 A minimum of 65mm cover should be provided over the last full course tiles.
- 3 Exposed mortar should be neatly pointed.
- 4 Ensure ridges are mechanically fixed using security ridge tiles or the mortar bedded security ridge kit.

RIDGES AT GABLE ENDS

- 1 Allow for mechanically fixing all ridge tiles.
- 2 It is recommended to secure a length of batten along the ridge apex to provide a means of mechanical fix.

- 3 Either drive a nail into the batten to secure a galvanised security ridge wire, or drill a hole – 100mm from the open end – and secure the ridge using a 75mm stainless steel screw.
- 4 Fill fair ends of ridges with mortar inset with pieces of Plain tile and neatly point.

MECHANICALLY FIXING MORTAR BEDDED RIDGES

Marley offer a Mortar bedded security ridge fixing kit to ensure that all mortared ridges are mechanically fixed and meet the requirements of BS 5534.

For full installation details of these kits, see pages 120-126

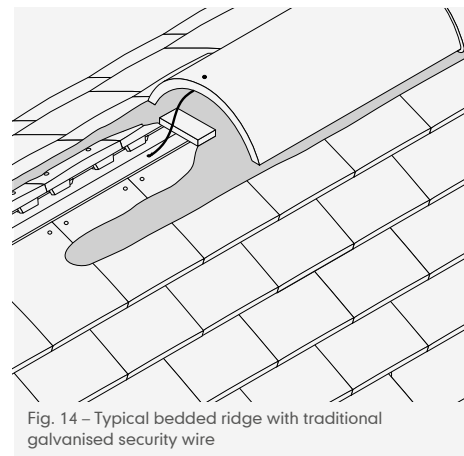


Fig. 14 – Typical bedded ridge with traditional galvanised security wire

MONO-RIDGE (CONCRETE)

- 1 Carry roofing underlay over ridge and cut below vertical leg of mono-ridge tile.
- 2 Lay mono-ridge tiles for Plain and Interlocking profiles as standard ridge tiles and mechanically fix each by using 2 No. 50mm x 10g stainless steel screws (supplied) to timber fascia behind vertical leg (Fig. 15, page 52).

RIDGES

CLAY PLAIN TILE RIDGE

- 1 Suitable for clay plain tiles.
- 2 Security ridge straps are available to attach to clay fittings.
- 3 Maximum rafter pitch 60°. Suitability can vary.
- 4 Fix metal strap to ridge board or supplementary batten
- 5 Provides mechanically fixed ridge tile in line with BS 5534 fixing guidelines (Fig. 16).

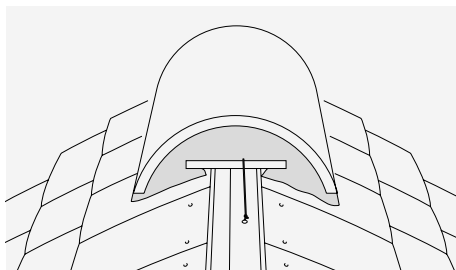


Fig. 15 – Bedded mono-ridge with 2 mechanical fixings

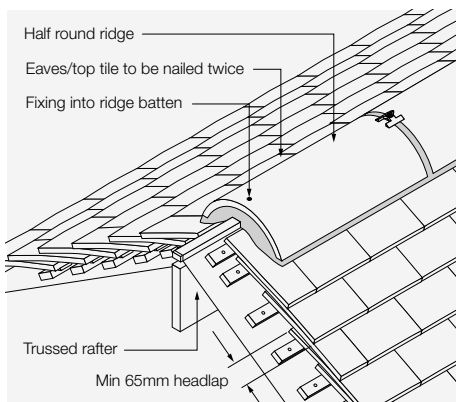


Fig. 16 – Clay bedded ridge using the mortar bedded security ridge kit

Ridge check points

- Nail/clip all top course tiles either side of ridge (clay or concrete).
- Overlap ridge underlay by minimum 150mm.
- Ensure minimum 65mm cover by ridge tile over top course of full length tiles.
- Keep ridge tiles set in a true line.
- Do not over-tighten screws of mono-ridge fixings.
- Mechanically fix all ridges.
- Consideration should be given to tile slips if mortar is greater than 25mm depth.

VERTICAL TILING

The use of plain tiles for the vertical cladding of buildings is traditional in the south east of England where timber framed construction is common.

Elsewhere, plain tiling is often fixed to the external surface of a single leaf masonry wall and comprises decorative pattern tiles which provide both an aesthetic and weatherproof cladding.

UNDERLAY

A moisture barrier, such as our Marley Vapour Permeable Underlay should be provided for all vertical tiling applications, and brick and blockwork construction, an HR (high water vapour resistance) underlay is adequate. For timber framed wall application, an LR (low water vapour resistance) breather membrane with third party certification is recommended.

Underlay should be lapped 100mm horizontally and 150mm vertically, all joints should be staggered and secured by austenitic stainless steel staples or nails.

BATTENS

There should be battens and counter battens fixed to the wall structure and consideration should be given to the use of proprietary fixings such as 'Rawlplug' or 'Hilti' type bolts/fixings for dense concrete and stone masonry walls.

- 1 Provide a moisture barrier for vertical applications. With brick and blockwork, roofing underlay is generally used.
- 2 Lap underlay 100mm horizontally and 150mm vertically and secure with clout nails.
- 3 On timber frame constructions, fix battens to a maximum gauge of 115mm and secure with wire nails to timber studding. Battens to be at least 1.2m in length, sufficient to be supported at each end and intermediately by at least three studs or walls.
- 4 Stagger butt joints over intermediate supports so that not more than three battens are joined in any twelve consecutive supports. Batten ends must be sawn.

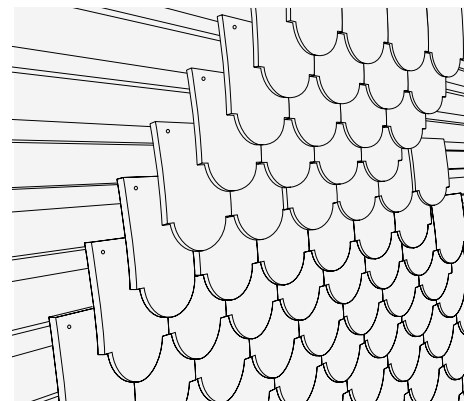


Fig. 17 – Feature tiles laid over battens and counter battens

VERTICAL TILING

FIXING

- 1 Lay vertical plain and feature tiles to a minimum lap of 35mm, maximum gauge 115mm.
- 2 Fix each tile with 2 No. 38mm x 2.65mm aluminium nails.

EAVES

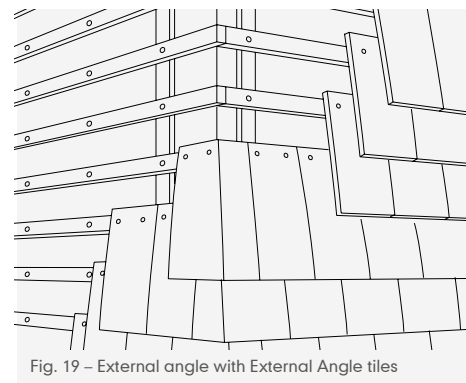
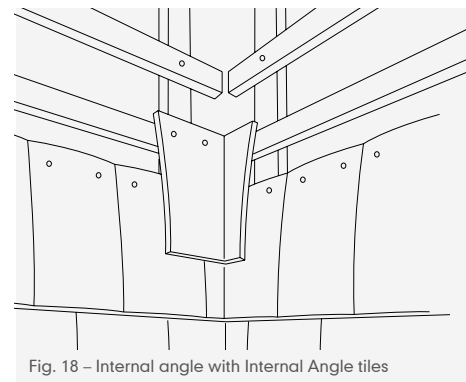
- 1 Lay a double course of tiles at eaves. Form by laying a first course of eaves tiles with a course of full tiles laid broken bond on top.
- 2 Tilt eaves tile a minimum of 65mm from face of groundwork by using a timber fillet.
- 3 Twice nail both eaves courses using 38mm x 2.65mm aluminium nails.

TOP COURSES

- 1 For top tiles, use a course of eaves/top tiles, twice nail each tile as before.
- 2 Where a top course is formed under a window sill, dress a lead flashing down over top course tiles for at least 100mm, cut level or to an approved finish.

ANGLES

- 1 Use purpose-made internal or external angle tiles at all corners. Where necessary, clay angle tiles may require packing to maintain a 'true' line with adjacent plain tiles.
- 2 Left and right hand angles of 90° (or other angle to suit) are available to provide a broken bond with main tiling, to be twice nailed (Figs. 18 and 19).
- 3 For impractical situations i.e. sprocketed tiling, close mitre tiles at corner(s) and weather with lead soakers.
- 4 Corner tiles are nailed through and not hung off lug on rear.



VERTICAL TILING

GABLES: 'WINCHESTER' CUT

This technique avoids the use of small triangular pieces of tile and ensures the secure fixing of the last tile against the main roof verge, by the use of a tile-and-a-half at the end of each course.

'Winchester' cutting is best suited for gable ends where the roof pitch is 40° or more. For lower pitches, the tiling gauge may need to be reduced to 100mm or 90mm in order to avoid too great a played cut.

It is likely that two tile-and-a-half tiles adjacent to one another will be needed to overcome this.

- 1 Leave battening short of rake of verge. This allows fixing of a batten parallel to, but below rake line. The top face of this batten must be flush with the tiling battens so that tiles do not tilt up (Fig. 20).
- 2 Cut tile-and-a-half tiles to angle of rake for each vertical course, keeping cut edge parallel to and below rake (Fig. 21).

- 3 Once tile-and-a-half tiles are positioned, cut adjacent tile to fit. All tile-and-a-half tiles should be twice nailed. This may mean drilling an extra hole after cutting to shape.
- 4 At apex of gable, use a tile-and-a-half tile turned through 45° and cut to shape to finish (Fig. 22).

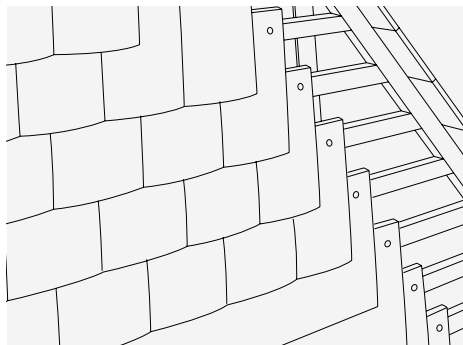


Fig. 20 – Fix battens parallel

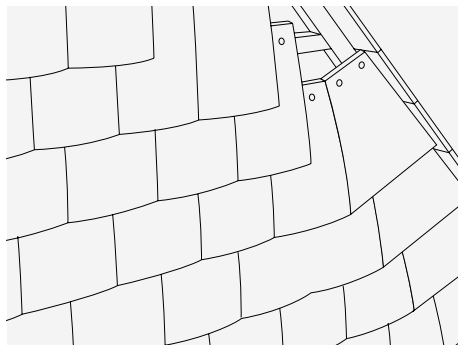


Fig. 21 – Cut tile-and-a-half tile

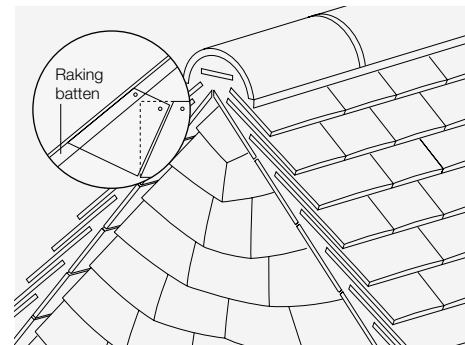


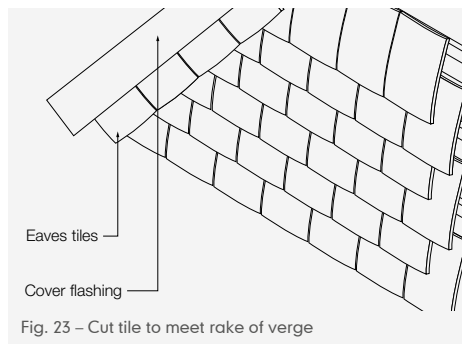
Fig. 22 – Apex of gable

VERTICAL TILING

GABLES: SOLDIER COURSE

This method is used for low pitch roofs below 35° where 'Winchester' cutting is impractical.

- 1 After felting, fix a raking batten close to undercloak/soffit positioned to allow the tiles to hang on their nibs.
- 2 Cut vertical tiles to meet raking batten using tile-and-a-half tiles at end of each course (Fig. 23).
- 3 Fix courses of eaves/tops tiles to raking batten (Fig. 24).

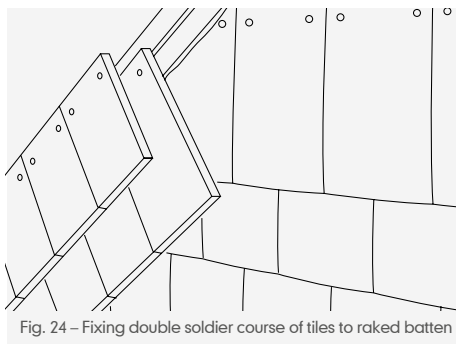


- 4 A cover flashing can be used to cover the soldier course tile nail holes and to the apex.

GABLES: DOUBLE SOLDIER COURSE

An alternative to the single soldier course, where additional protection is required.

- 1 After felting, fix two raking battens close to undercloak/soffit positioned so as to allow the tiles to hang by their nibs.
- 2 Cut vertical tiles to meet lower raking batten using tile-and-a-half tiles at the end of each course.



- 3 Fix courses of standard Plain tiles to lower of two raked battens, then fix course of eaves tiles to remaining (top) raked batten (Fig. 24).
- 4 A cover flashing can be used to cover the soldier course tile nail holes and up to the apex.

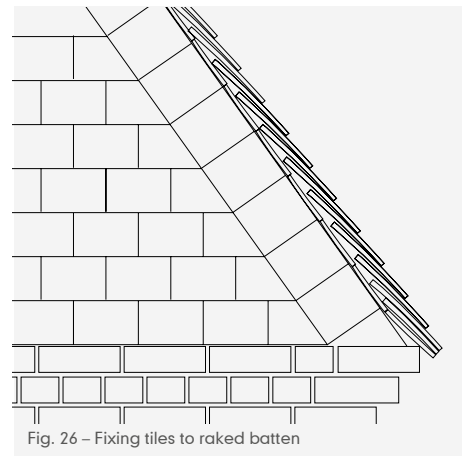
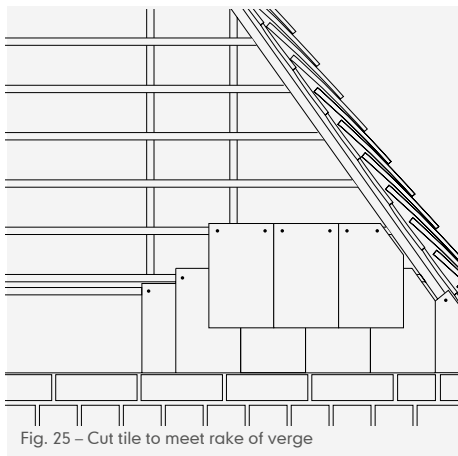
Note: Spot bedding is recommended beneath the laps of cut tiles to prevent wind chatter and damage.

It is not recommended that feature tiles are used for gable ends. If they are, however, use plain tile-and-a-half tiles to complete course beneath rake of the verge.

VERTICAL TILING

GABLES: SUSSEX CUT

- 1 Fix an additional batten onto face of vertical tiling battens and parallel to the verge to allow fixing of cut tiles.
- 2 Form raking cuts using tile-and-a-half tiles as necessary (Fig. 25).
- 3 Fix edge tile close to undercloak/soffit, securing by spot bedding and double nailing into raking batten (Fig. 26).



VERTICAL TILING

ABUTMENTS

Where the tiling meets an abutment, use tile-and-a-half tiles in alternate courses to provide a broken bond.

- 1 When tiling meets a brickwork wall, fix tiles to within 50mm of return.
- 2 A Code 4 lead sheet can be taken a minimum of 75mm behind tiles and turned in a single welt on a vertical counter batten.
- 3 Lead is taken around corner and top edge taken into brickwork mortar joints (Fig. 27).
- 4 If lead soakers are used, slot them between tiles and turn along abutment wall.
- 5 Turn and dress the stepped flashing over soakers.
- 6 When meeting timber cladding or a window jamb, turn flashing behind cladding or return into the jamb (Fig. 28).

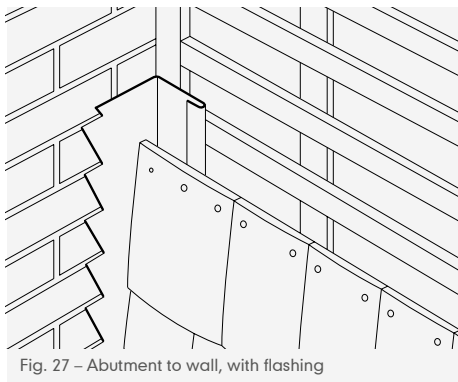


Fig. 27 – Abutment to wall, with flashing

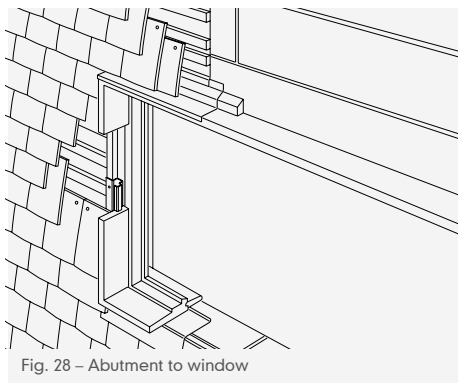


Fig. 28 – Abutment to window


Vertical tiling check points

- Ensure each Plain and feature tile is twice nailed on vertical tiling.
- Use double course of tiles at eaves and top edges
- Always use tile-and-a-half tiles at raking cut abutments.
- Maintain broken bond in all cases.
- Avoid using feature tiles on pitches below 70° unless adequate weathering is provided by additional groundwork.
- Ensure battens are securely fixed to groundwork with suitable fixings.
- For corner tiles ensure they hang off shank of nail rather than the lug on the reverse.



CONCRETE AND CLAY INTERLOCKING TILES

- | | |
|----------------------------------|-----------------------------------|
| 60 SETTING OUT THE ROOF | 79 MAXIMA CLAY PROFILED
TILES |
| 65 EAVES | 87 MELODIE CLAY PROFILED
TILES |
| 67 VERGES | 94 LINCOLN CLAYPROFILED
TILES |
| 69 HIPS | 103 EDEN CLAY PANTILES |
| 71 VALLEYS | |
| 73 RIDGES | |
| 75 ASHMORE
INTERLOCKING TILES | |

 **Dry fix and ventilation systems**
For more details, see pages 127-236

SETTING OUT THE ROOF

It is important that the tiler should set out the roof prior to fixing. This will help to save time and avoid unequal overhangs at verges and expensive labour costs in cutting tiles at abutments (Fig. 1).

POSITION OF TOP AND BOTTOM BATTENS

- 1 Batten gauge required must be worked out on site. Fix eaves course batten first and position using one of the following methods:

- 2 The eaves batten should be set to ensure that the tail of the tile extends over the fascia board by no less than 50mm on the rake (Fig. 2).

Or

- 3 Position eaves batten and measure distance from top edge to outside edge of fascia. This distance should be approximately equal to length of tile less nib depth and gutter overhang e.g. (Mendip length 420mm, nib depth 20mm, overhang 50mm hence = $420\text{mm} - 20\text{mm} - 50\text{mm} = 350\text{mm}$).

For Melodie overhang into gutter, see specific installation instructions on pages 87-93.

- 4 Fix top course batten so that ridge tile provides a minimum 75mm cover to top course tile (Fig. 3).

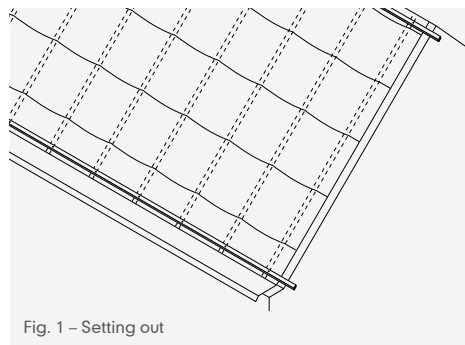


Fig. 1 – Setting out

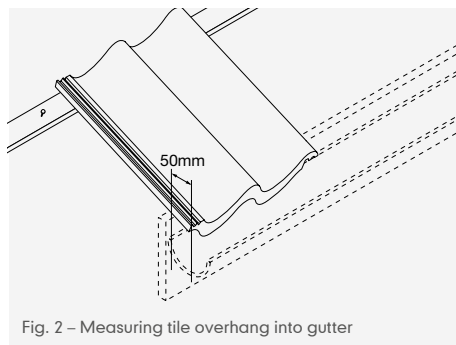


Fig. 2 – Measuring tile overhang into gutter

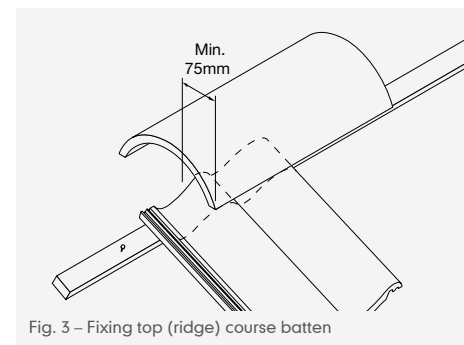


Fig. 3 – Fixing top (ridge) course batten

SETTING OUT THE ROOF

CALCULATING THE BATTEN GAUGE

- 1 Measure distance between top of eaves batten and top of ridge batten.
- 2 Divide distance by maximum gauge of tile being used.
- 3 Round figure up to give number of courses up slope as a whole number.
- 4 Divide measured distance by number of courses to give batten gauge.
- 5 The practice of adjusting gauge over last few courses at eaves or ridge is technically acceptable, provided maximum gauge for tile is not exceeded.
- 6 It is important, with deeply profiled tiles, to maintain a fixed gauge up roof to avoid a 'dog leg' diagonal.
- 7 If necessary, tiles should only be cut in ridge course, drilled and nailed.

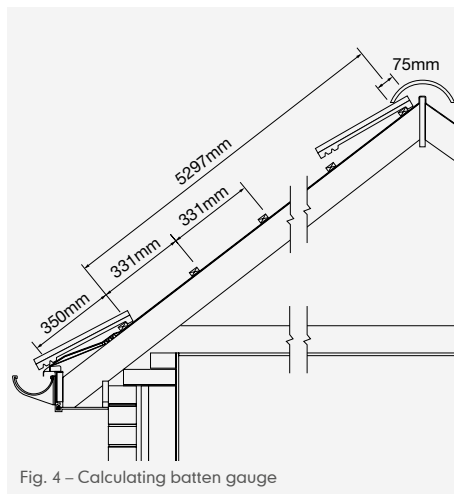


Fig. 4 – Calculating batten gauge

EXAMPLE (FIG. 4)

Distance eaves to ridge batten:	5297mm
Max. gauge for Mendip tiles:	345mm
No. of courses $(5297 \div 345) = 15.35$	16
15.35 rounded up:	
Batten gauge $(5297 \div 16):$	331mm

Notes: The above applies only to a roof pitch with no features such as dormers, chimneys etc. Batten gauges between all such fixed points should be calculated individually.

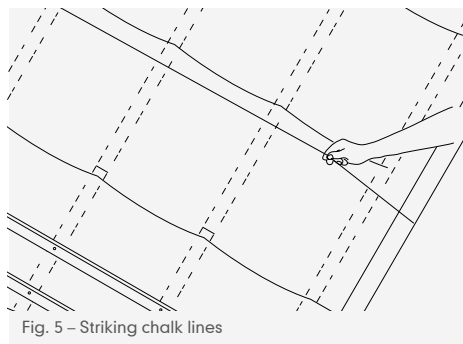
Where two roof slopes of varying pitch intersect, batten gauge should be set to the lower pitch or longer rafter length.

SETTING OUT THE ROOF

HORIZONTAL ALIGNMENT

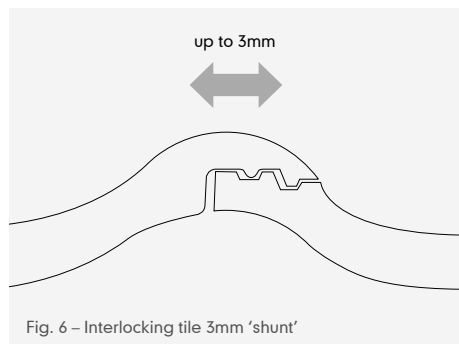
There are several ways of achieving true horizontal alignment:

- 1 Strike a chalk/ochre line at 90° to perpendicular line (Fig. 5).
- 2 Measure two pieces of timber, each length of batten gauge minus width of one batten (advantageous for vertical tile hanging).



PERPENDICULAR ALIGNMENT

- 1 Set out roof along eaves starting with correct overhang at right hand verge.
- 2 Correct overhang on left hand verge can be achieved using full tiles by opening or closing side lap between tiles.
- 3 Marley interlocking tiles allow a tolerance ('shunt') of approximately 3mm in side lock for adjustment (Fig. 6).
- 4 Overhang at verges should not be more than 50mm.



- 5 On a short eaves, tiles may require cutting. Cut tiles at verges should be at least half width of a full tile. Half tiles are available for use at verges with Modern and Edgemere (produced in pairs for cutting on site) to enable broken bond laying.
- 6 Strike perpendicular chalk or ochre lines over eaves to ridge at three tile intervals to coincide with edges of tiles.
- 7 A gauge rod the width of three tiles can be used as an alternative to actual tiles.

SETTING OUT THE ROOF

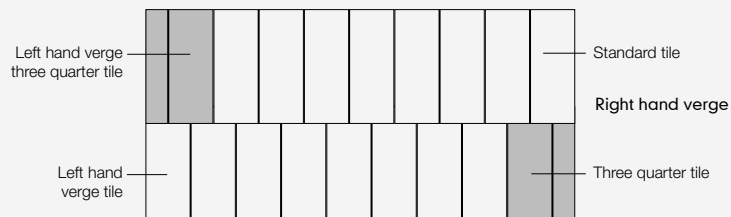
ACHIEVING BROKEN BOND PATTERN (DUO MODERN AND DUO EDGEMERE)

Duo Modern and Duo Edgemere

interlocking tiles are laid quarter bonded, using half or three-quarter width tiles at verges, cut on site.

- 1 Ensure that the eaves course right hand or left hand verge starts with either a three-quarter width, half width or standard tile as indicated in Figs. 7 and 8.
- 2 Continue subsequent courses of slates laid in a quarter bond, ensuring that left and right verge tiles are cut as either half tiles, three quarter tiles or standard tiles (see Fig. 8).
- 3 Mechanically fix all tiles by either nailing, clipping, or nailing and clipping in accordance with the recommended fixing specification.

OPTION 1



OPTION 2

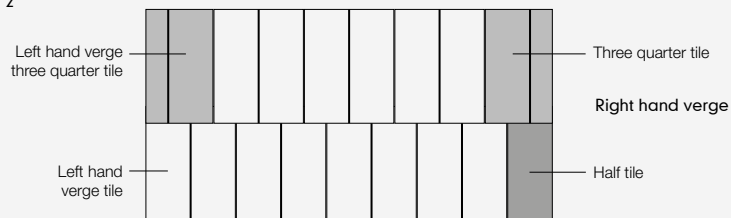
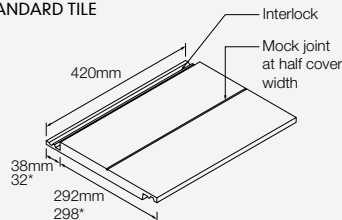


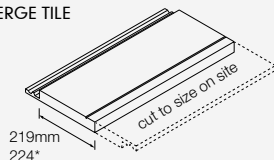
Fig. 7 – Two tile laying options to achieve broken bond

SETTING OUT THE ROOF

STANDARD TILE



LH VERGE TILE



RH VERGE TILE

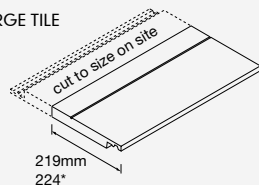


Fig. 8 – Cutting dimensions for LH and RH verge (Duo Modern and Duo Edgemere)

* dimension for Duo Edgemere

COMPLETION OF TILING

- 1 Load out all tiles on the roof evenly before commencing tiling (see page 11).
- 2 Work from right to left (Fig. 9). Depending on fixing specifications, you may leave out some tiles towards left-hand verge and make use of tile battens as a ladder enabling upper part of roof to be reached for fixing ridges.
- 3 On a hipped roof, cut tiles so that end tiles of each course align with rake of hip.

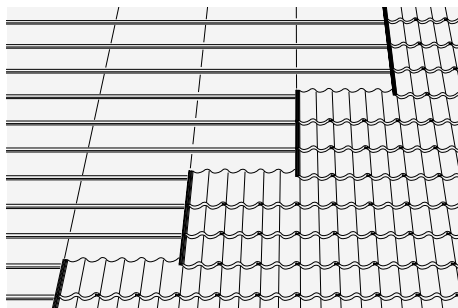


Fig. 9 – Completion of tiling

Setting out check points

- Never exceed maximum gauge for tile used at recommended pitch.
- Avoid cutting tiles wherever possible.
- Never cut bottom edge of a tile.
- Vertical cuts should never be less than half a tile width.
- On adjacent roof slopes of varying pitch, set batten gauge to the lower roof pitch to ensure alignment at intersections.
- Ensure ridge tiles provide a minimum 75mm cover to top course tiles.
- Eaves tiles should lie over the fascia board 50mm on the rake.

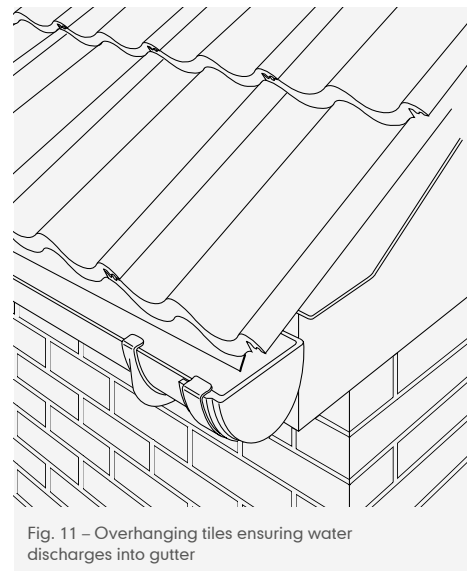
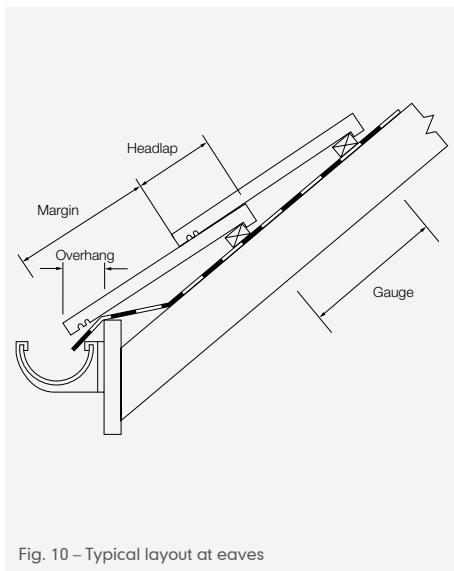
EAVES

INTERLOCKING TILES

- 1 Lay out full course of eaves tiles.
- 2 Eaves tiles should overhang the fascia board 50mm (Fig. 10).
- 3 If gutter is not fixed, an overhang of min. 50mm should be allowed (Fig. 11).

Note: Fascia heights shown in tables on page 132. Assume the 50mm distance is measured between bottom right corner of tile and fascia board, that is bottom corner of overlock.

- 4 Fit underlay protector or draw underlay taut over tilting fillet and front edge of fascia board before fixing.



EAVES

- 4 Fix eaves course tiles with nail or purpose-made eaves clip nailed to top of fascia board (Fig. 12).

- 5 If fascia board has been fixed at right height, eaves course will automatically be at correct pitch.

Note: Sprockets are not recommended with interlocking tiles.

- 6 Eaves ventilation should be provided for all new projects without a vapour control layer.

- 7 For deep profile tiles, nail comb filler to top of fascia board (Fig. 13).

Note: Eaves ventilation can be achieved unobtrusively by using Marley Universal eaves ventilation systems (10mm and 25mm). See page 238 for Eaves fascia heights without ventilation.

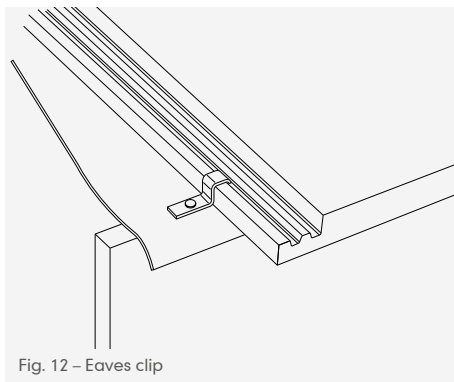


Fig. 12 – Eaves clip

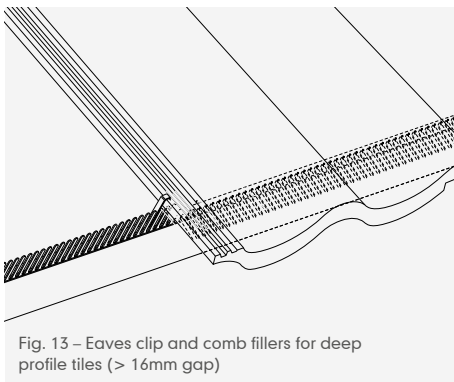


Fig. 13 – Eaves clip and comb fillers for deep profile tiles (> 16mm gap)

Eaves check points

- Nail or clip all eaves tiles as per fixing specification recommendations.
- Make sure eaves course does not tilt backwards.
- Where appropriate, fit correct eaves comb filler strip.
- Use Marley Eaves Ventilation Systems
- If above is not used, a tilting fillet or fascia must take its place.
- Eaves tiles should lie over the fascia board 50mm on the rake.

VERGES

GROUNDWORK

- 1 Form verges by bedding tiles onto undercloak of fibre cement strip (1200mm x 150mm).
- 2 Lay undercloak rough side upwards, closely butted together, with a slight tilt outwards to provide drip at outside edge.
- 3 Level off irregularities in brickwork by laying undercloak onto a buttering of mortar, bringing height up to adjacent rafter.
- 4 Carry roofing underlay over cavity wall and cover by inside edge of undercloak.
- 5 When laid on boarding, nail each length of undercloak at maximum of 300mm centres.

TILING BATTENS

- 1 Tiling battens should finish 100mm from edge of brickwork or bargeboard.
- 2 Place undercloak below battens, overhanging by maximum of 50mm (Fig. 14).
- 3 Provide about 50mm of mortar width.
- 4 Ensure that batten ends remain clear.
- 5 Bed all verge tiles and fix either by nailing or clipping as required by fixing specification.

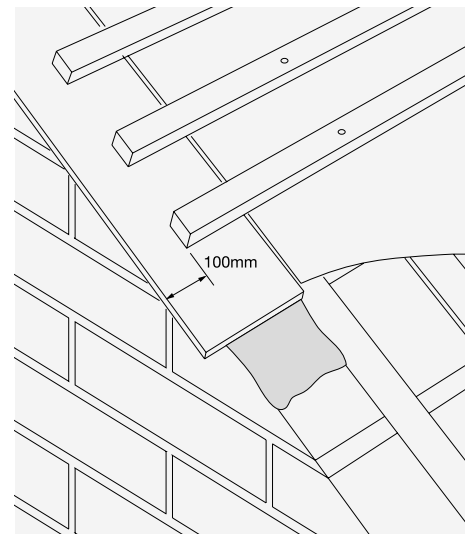


Fig. 14 – Fibre cement undercloak fitted over tiling batten

VERGES

EXTERNAL CLIPPING

- 1 When required, nail verge clips to top of battens with upstand level with edge of undercloak (Fig. 15).
- 2 Under normal conditions, set roof out to avoid cutting. Where not possible, ensure cut tiles are symmetrical at both verges.
- 3 Remove interlocks where necessary to facilitate the fixing of external verge clips.
- 4 Strike all mortar bedding off flush and neatly point.

VERGE AT EAVES

- 1 Verges at eaves should overhang by same amount as rest of tiling.
- 2 Adjust or remove small piece of undercloak to prevent first tile from riding up.

CLOAK VERGES FOR INTERLOCKING TILES

See pages 158-164.

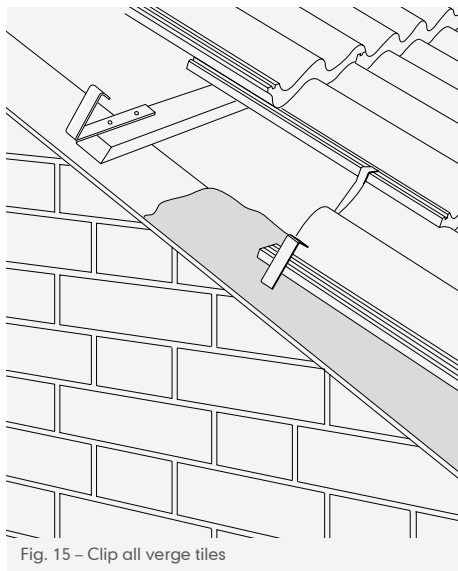


Fig. 15 – Clip all verge tiles

Verge check points

- Twice mechanically fix all verge tiles.
- Continue underlay across wall cavity and below undercloak (where appropriate).
- Mortared verges should have an overhang of 38 to 50mm.
- Undercloak should have an outward tilt on mortared verges.
- Avoid pointing with a separate mix of mortar.

Note: It is recommended that tiles are not swept up at verges.

HIPS

GROUNDWORK

Hips should be weathered by covering the junction of the tiles, often achieved by securing hip tiles along the length of hip.

- 1 Mitre tiling battens and fix to continuous structural member.
- 2 Fix a galvanised hip iron minimum 5mm thick at base of hip tree with two 5mm diameter nails, or suitable screws.
- 3 Cut tiles closely to rake of hip.
- 4 Edge-bed, hip tiles with solid bedding at butt joints, onto roof tiles. Ensure they are mechanically fixed.
- 5 Position first hip tile at foot to line of tiling at eaves and fill open (fair) end with mortar inset with pieces of tile. Neatly point.
- 6 Edge and solid bed hip tiles continuing along length of hip (Fig. 16). Ensure all hips are mechanically fixed.
- 7 For Mendip, Wessex and Anglia, lay a course of dentil slips into pans and bed in mortar.

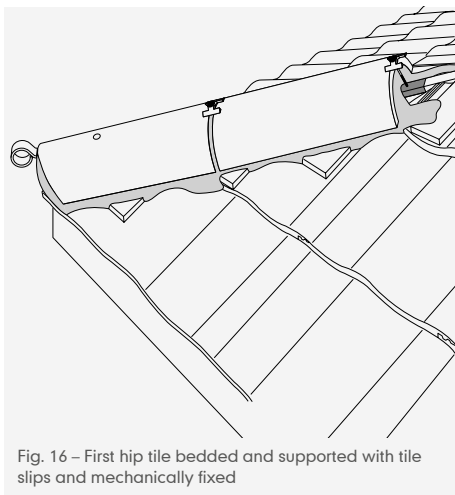


Fig. 16 – First hip tile bedded and supported with tile slips and mechanically fixed

HIP/ROOF APEX JUNCTION

- 1 Mitre junction of hip and roof apex using a standard three-way mitre and solid bed (Fig. 17).
- 2 In all situations, it is recommended that a lead saddle Code 4 is used beneath the apex junction.
- 3 Where a bedded hip tile meets a dry ridge line, height of bedding should be the same as that of profiled filler units so that ridge/hip height is even.
- 4 Use secret cut tile clips to mechanically fix any small pieces of cut tile.

HIPS

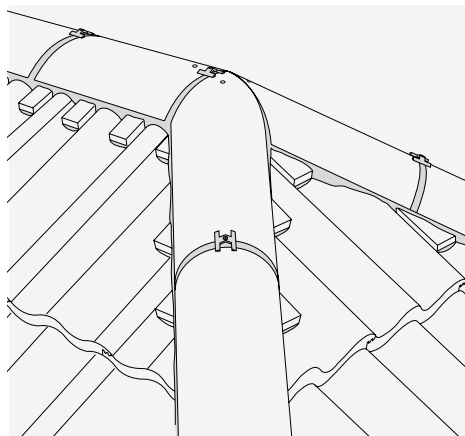


Fig. 17 – At ridge hip junction, cut tiles with three-way mitre to ensure continuous line

MECHANICALLY FIXING MORTAR BEDDED HIPS

Marley offer a Mortar bedded security hip fixing kit to ensure that all mortared ridges are mechanically fixed and meet the requirements of BS 5534. For full installation details of these kits, see pages 124-126.

Hip check points

- Fix a suitable hip iron to the base of rafter.
- Close mitre roof tiles where they meet hip and ensure each tile is nailed or clipped.
- Bed and fix all small pieces of tile.
- Mitre hip tiles at ridge junctions ensuring that the end tile does not ride up.
- Cut bottom hip tile to align with eaves.
- Ensure all hip tiles are mechanically fixed.

VALLEYS

METAL VALLEYS

Sheet metal valleys can be used at roof pitches down to 15°, and are especially useful where a valley forms a junction between slopes of different pitch.

Metal used to form the valley should be not less than 500mm wide, and should extend a minimum of 250mm up each side of the valley (Fig. 18).

VALLEY WIDTHS

A traditional valley gutter width of 125mm is satisfactory for most gutter lengths. For pitches below 35°, or valley lengths exceeding 5 metres, valley width may require increasing to cope with the additional flow experienced during storm conditions.

SUPPORT FOR METAL VALLEY LININGS

- 1 Support all metal linings adequately along their entire length.
- 2 Valley boards for valleys below 30° pitch may be inset into suitably housed traditional rafters, or fitted between trussed rafters.
- 3 Lay a 4mm thick ply lining board over valley boards to provide a smooth surface for metal lining.
- 4 If roof pitch is 35° or more, valley boards may be laid on top of the rafters and the tiling battens swept up to valley by packing them with timber furring pieces. (This detail is not recommended for small valleys, such as at dormers, where sweep of tile courses will be clearly visible).

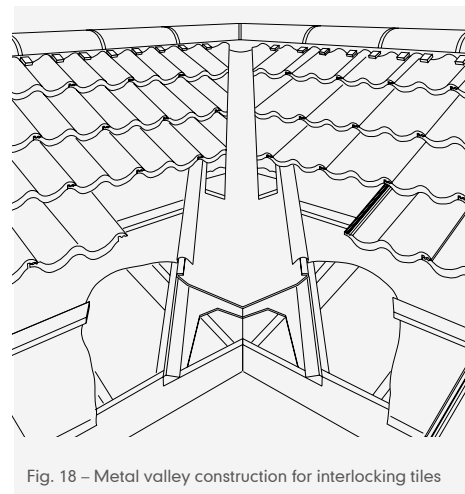


Fig. 18 – Metal valley construction for interlocking tiles

VALLEYS

LEAD SHEET VALLEYS

Where lead is used, use minimum Code 4, preferably Code 5. To avoid staining, the Lead Sheet Association recommends an application of patination oil immediately after the lead is fixed.

- 1 Dress metal lining down tightly onto lay boards and fix in lengths not exceeding 1500mm with copper nails across the top of each piece.
- 2 Laps should be a min. 150mm although below 30°, this increases to 290mm min. at 15° valley pitch (see LSTA recommendations).
- 3 Dress metal lining over tilting fillets at each side of valley and tack to form a welt.
- 4 Restrict any fixings down sides to top third of each piece of gutter lining.
- 5 Cut roofing underlay so that it laps over tilting fillets.
- 6 Cut roof tiles to a rake and bed with mortar onto a suitable undercloak laid onto lead lining. Ensure that tile interlocks are kept free and a gap is maintained between tilting fillets and mortar bedding.
- 7 Never lay mortar directly onto lead as there is a risk of differential movement causing mortar to crack and lead to split.
- 8 Nail or clip all tiles adjacent to valley and ensure small tile cuts are well bedded in mortar, using Marley secret cut tile clips.



Valley check points

- Keep an open channel between cut edges of roof tiles (125mm minimum).
- Do not block interlock laps of tiles with mortar since this may cause water damming.
- Do not lay bituminous underlay directly beneath a lead valley; heat causes underlay to expand. This may split lead.
- Do not apply mortar direct to lead.
- Tile slips or undercloak beneath mortar bedding is generally recommended to prevent differential movement between the mortar and lead lining.
- Twice mechanically fix all tiles either side of valley.

RIDGES

DUO-PITCH RIDGES

The apex of the roof should be covered using ridge tiles of complementary colour, or contrasting, and texture to that of main roof tiles. Always check that the ridge tile design suits the pitch and type of roof tile being used. (See Marley Roofing Product Catalogue).

- 1 Edge-bed ridge tiles onto the top course tiles with solid bedding at butt joints (Fig. 19) and ensure all ridges are mechanically fixed.

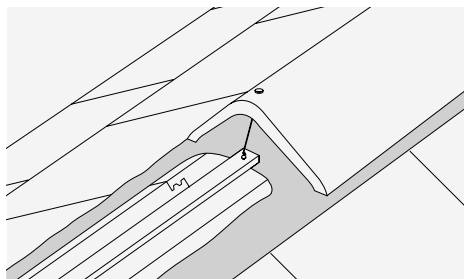


Fig. 19 – Bedded ridge tile using mortar bedded security ridge fixing

- 2 A minimum of 75mm cover should be provided over top course tiles.
- 3 Exposed mortar should be neatly pointed.

RIDGES WITH TRADITIONAL SECURITY WIRE FIXING

- 5 Drive a nail into batten and attach a Security Ridge tile to it using the galvanised wire provided in tile (Fig. 20) (concrete ridges), or security strap (clay ridges).

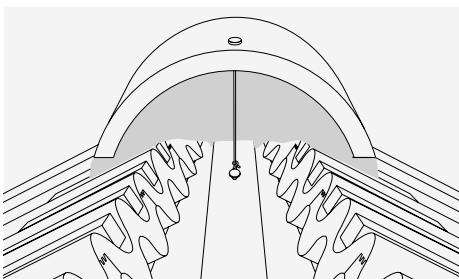


Fig. 20 – Security Ridge fixing at gable ends (concrete ridges)

- 6 Fill fair ends of ridges with mortar inset with pieces of Plain tile and neatly point.
- 7 Our mechanical fixing kit should be used to provide a second mechanical fix.

DENTIL SLIPS

- 9 For Mendip, Wessex, Anglia or Double Roman (optional) tiles, lay dentil slips into pans of top courses.
- 10 A mortar bed approx 10mm thick should be provided to bed the dentil slip onto (Fig. 21).

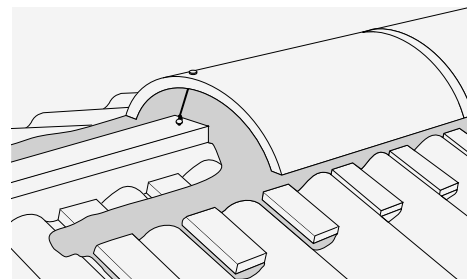
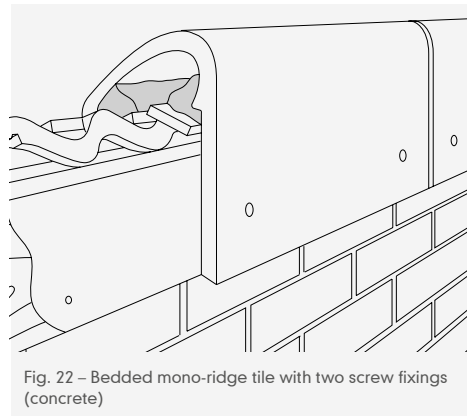


Fig. 21 – Mortar bedded ridge using dentil slips for deep profiled tiles

RIDGES

MONO-RIDGE

- 1 Carry roofing underlay over ridge line and cut below vertical leg of mono-ridge tile.
- 2 Lay mono-ridge tiles for Interlocking profiles as standard ridge tiles and mechanically fix each by using 2 No. 50mm x 10g stainless steel screws to timber fascia behind vertical leg (Fig. 22) (concrete mono-ridge tiles only).



MECHANICALLY FIXING MORTAR BEDDED RIDGES

Marley offer a Mortar bedded security hip fixing kit to ensure that all mortared ridges are mechanically fixed and meet the requirements of BS 5534.

For full installation details of these kits, see pages 121-123.

Ridge check points

- Nail and/or clip all top course tiles either side of ridge.
- Bed dentil slips in mortar in pans of deep profile tiles.
- Overlap ridge underlay by minimum 150mm.
- Ensure minimum 75mm cover by ridge tile over top course.
- Keep ridge tiles set in a true line.
- Do not over-tighten screws to fix mono-ridge tiles.
- Ensure all ridge tiles are mechanically fixed.

ASHMORE INTERLOCKING TILES

Ashmore single lap interlocking roof tiles have a 'mock bond' joint to give the appearance of two traditional double-lap plain tiles when laid on the roof. Tiles are laid single lap with a broken bond, utilising left hand and right hand 3/4 tiles for use in alternate courses at verges and abutments. Tile-and-a-half tiles are also available to assist with setting out to hips and valleys to avoid small cut sections of tile.

SETTING OUT

- 1 Position eaves course batten first and measure distance from top of outer edge of fascia. This should be equal to length of tile, less nib and tile overhang to centre line of gutter width, i.e. 267mm less 50mm (overhang) less 28mm (nib width and indent) = 189mm from outer edge of fascia or tilting fillet. Top course batten should be fixed so that ridge tile provides a minimum 75mm cover over top course tiles.

- 2 Measure distance between the top of eaves batten and top of ridge course batten. Divide distance by 190mm (maximum gauge of Ashmore tile). Round this figure up to give number of courses up roof slope as a whole number.

Divide measured distance by number of courses to give required batten gauge.

Note: Batten gauges between fixed points should be calculated individually.

- 3 Where two roof slopes of varying pitch intersect, set batten gauge to the lower pitch or longer rafter length.
- 4 The practice of adjusting gauge over last few courses at eaves or ridge is technically acceptable, provided maximum gauge is not exceeded. Tiles should only be cut at top, and drilled, nailed/clipped as required.

- 5 Horizontal alignment can be checked by striking a chalk/ochre line at 90° to vertical line.
- 6 Check perpendicular alignment by setting out roof along eaves starting with correct overhang at the right hand verge. Overhang at left hand verge can be achieved using full and 3/4 tiles by opening or closing side lock shunt (max. verge overhang 50mm).
- 7 Cut tiles at verge should never be less than 3/4 the width of a standard tile, unless cut from a tile-and-a-half tile.

ASHMORE INTERLOCKING TILES

FIXING

Before commencing to tile the roof, check to ensure the correct fixing specification is being used.

Ashmore tiles should be mechanically fixed in the following manner:

Step A: All tiles requiring once nailing should be nailed through right hand nail hole using a 45mm x 3.35mm aluminium or stainless steel nail.

Step B: Tiles requiring clipping should be nailed through the left hand nail hole using a 45mm x 3.35mm aluminium or stainless steel nail and clipped using Ashmore stainless steel wire clip, which is located over side lock of tile with tail push fitted under back edge of the nailed course of tiles beneath.

EAVES

- 1 The eaves course of tiles may be fixed by either nailing or clipping, or both.
- 2 Purpose made eaves clips are nailed to fascia board and located over side lock of the eaves course tile (Fig. 23).
- 3 Eaves course must be laid at same pitch as remainder of roof.
- 4 Care should be taken to adjust height of fascia or tilting fillet to accommodate any eaves vent strips (see tables on page 132).

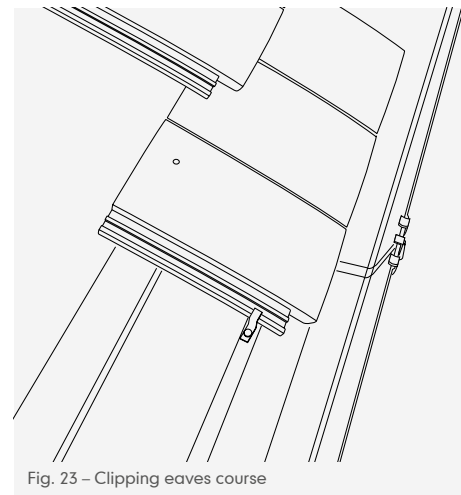


Fig. 23 – Clipping eaves course

ASHMORE INTERLOCKING TILES

BEDDED VERGES

- Verges should be formed using standard tiles with left hand or right hand 3/4 width verge tiles in alternate courses. Standard tiles on left hand verges will require the sidelock to be removed (Fig. 24).
- Form verges by mortar bedding tiles onto an undercloak of fibre reinforced cement strip (1200mm x 150mm).
- Lay undercloak rough side up and closely butted together with a slight tilt outwards to provide a drip edge with a maximum 50mm overhang from brickwork gable or bargeboard.
- Provide 65mm width of mortar to bed all verge tiles and fix each verge tile by twice nailing and clipping as per specification.
- Use purpose made verge clips on both left hand and right hand verges and twice nailed to battens with upstand level with edge of the undercloak.

- Strike all mortar bedding off flush and neatly point in one operation.

For Ashmore Dry verge system, see pages 147-152.

RIDGES

- Roof apices may be covered using Marley segmental ridge tiles or any other ridge tile design suitable for the pitch of the roof (see Marley Roofing Product Catalogue).
- Edge-bed all mortar bedded ridge tiles onto top course of tiles with solid bedding at butt joints.
- Support mortar at butt joints with pieces of cut tile.
- Ensure that a minimum 75mm cover is provided by ridge tile over top course of tiles with any exposed mortar neatly pointed (Fig. 25).
- Ensure all ridge tiles are mechanically fixed.

Note: For details of Marley Dry Ridge systems refer to pages 188-206.

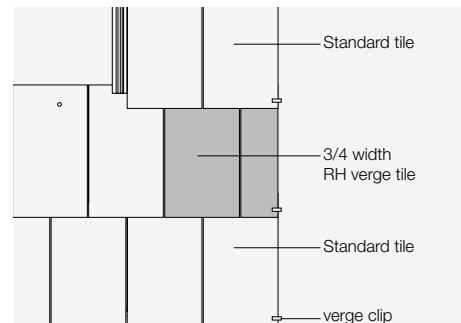


Fig. 24 – Typical bedded verge (right hand)

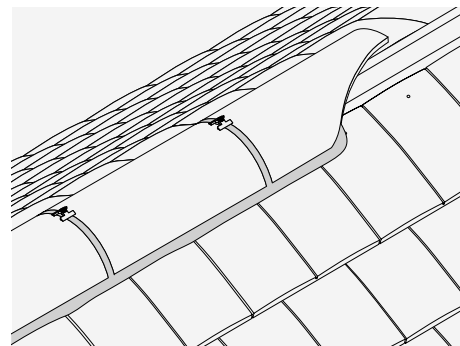


Fig. 25 – Typical bedded ridge

ASHMORE INTERLOCKING TILES

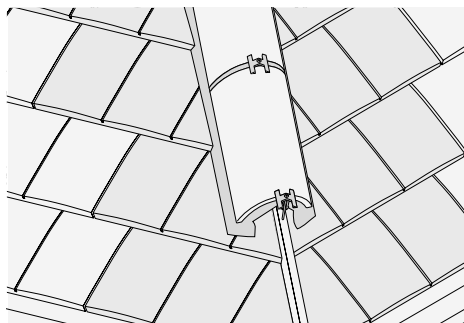


Fig. 26 – Typical bedded hip using third round ridge units as hip capping, tile-and-a-half tiles shown shaded

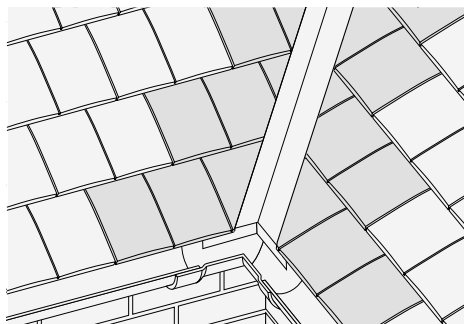


Fig. 27 – Typical bedded valley – tile-and-a-half tiles shown shaded

HIPS

Hips should be formed using tile-and-a-half tiles, each tile being twice nailed or nailed and clipped.

- 1 Cut tiles to rake of hip and cover with third round hip tiles or alternative suitable hip tiles, edge bedded, with solid bedding at butt joints, onto adjacent tiles. Support mortar at butt joints with pieces of cut tile.
- 2 Ensure that a minimum 75mm cover is provided by hip tile over adjacent courses of tiles with any exposed mortar neatly pointed.
- 3 Fix a hip iron at base of hip rafter and shape first hip tile at front to align with tiling at the eaves (Fig. 26).
- 4 Ensure all hip tiles are mechanically fixed.
- 5 Mitre junction of hip and ridge, using a concealed lead saddle in exposed locations.

Note: For details of Marley dry hip systems refer to pages 170-181.

VALLEYS

Valleys should be formed using tile-and-a-half tiles, each tile being nailed and clipped.

- 1 Cut tiles to rake of valley trough, leaving a clear channel of minimum 125mm wide.
- 2 Form valley with either a metal lining (Code 4 lead sheet) of not less than 500mm wide (see LSA recommendations) or with the Marley GRP dry valley (low profile).
- 3 Bed raking cut tiles at edges of valley using mortar, ensuring that there is adequate space kept clear behind mortar to avoid water capillarity (Fig. 27).

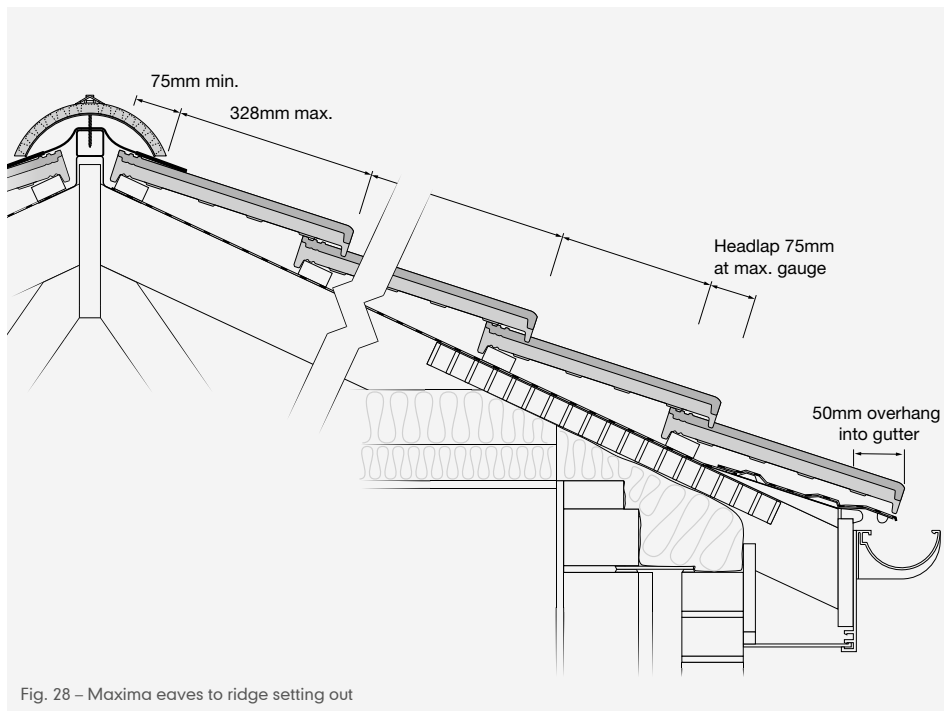
Note: For details of Marley Universal dry valley system refer to pages 182-185.

MAXIMA CLAY PROFILED TILES

Maxima single lap clay interlocking roof tiles have the appearance of a double roman when laid on the roof. Tiles are laid single lap straight bonded, utilising special left hand verge finishing tiles at bedded verges and at abutments. Dentil slips are also available for bedded ridges and hips.

SETTING OUT – VERTICAL COVERAGE

- 1 Tile battens should be set out at a max. spacing of 328mm to ensure a minimum headlap of 75mm. Maxima tiles have an open gauge making them easy to install.
- 2 Position the eaves course batten to allow the bottom edge of the eaves course tiles to overhang the fascia board so that water discharges into the centre of the gutter. If no gutter is fixed an overhang of minimum 50mm should be allowed for.
- 3 Measure the distance between the top of the eaves batten and the top of the ridge course batten which should be fixed so that the ridge tile provides a minimum 75mm cover over top course tile.



MAXIMA CLAY PROFILED TILES

- 4 Divide the distance by 328mm, the maximum gauge of the Maxima tile. Round this figure up to give the number of courses up the roof slope as a whole number. Divide the measured distance by the number of courses to give the required batten gauge.

Note: Batten gauges between fixed points should be calculated individually.

- 5 The practice of adjusting the gauge over the last few courses at eaves or ridge is technically acceptable provided the maximum gauge is not exceeded, although the resulting distortion of the diagonal lines may not be aesthetically acceptable.

Tiles should be nailed using a 45mm x 3.35mm aluminium nail and clipped at the top course.

LINEAR COVERAGE

The average linear coverage (cover width) of the Maxima tile is 300mm. There is a 3mm adjustment (shunt) built into the side interlocks to aid setting out across the roof.

- 1 Lay a course of tiles along the eaves length, setting the tiles at the average linear coverage, and make adjustment in the shunt to allow for a 38-50mm overhang at the verges.
- 2 Ensure that a Maxima left hand verge finishing tile is used to complete the linear tile array and that the verge overhang is equal on both left and right hand verges.

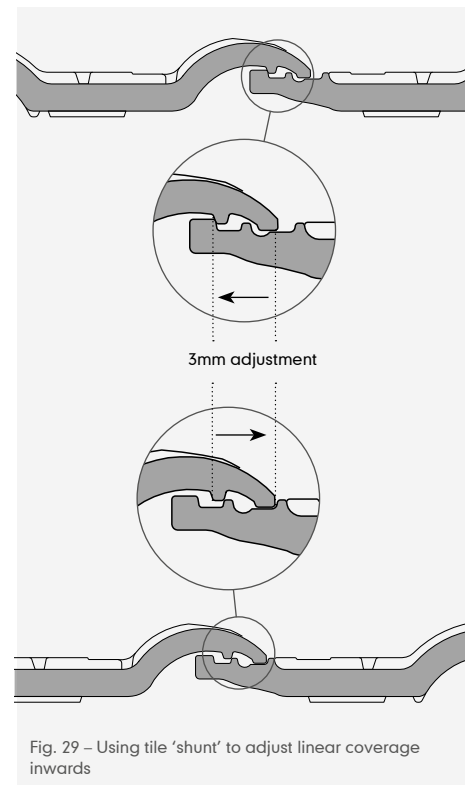


Fig. 29 – Using tile 'shunt' to adjust linear coverage inwards

MAXIMA CLAY PROFILED TILES

USING A GAUGING ROD

- 1 An alternative method is to use a gauging rod (a short length of batten) and mark the position of three tiles with their sidelocks fully closed, then mark the position of the three tiles 'open'. Set the average coverage by making a third mark midway between the two previous two marks on the rod. Use this third position to set out the linear coverage on both eaves and top course battens.
- 2 Strike a chalk or ochre line from the eaves to ridge at each mark so that the tiles can be laid to a straight perpendicular alignment.

ALIGNMENT AND CUTTING OF TILES

Horizontal alignment can be checked by striking a chalk or ochre line at 900mm to the vertical line. Perpendicular alignment should be checked by setting out the roof along the eaves, starting with the correct overhang at the right hand verge.

- 1 The left hand verge can be achieved using special left hand verge finishing tiles (38-50mm verge overhang).
- 2 Cut tiles at the verge should be avoided wherever possible, but if this is unavoidable, should never be less than half the width of the standard tile.

GENERAL FIXING

Before commencing to tile the roof, check to ensure the correct fixing specification is being used. Load out all sides of the roof uniformly, randomly mixing tiles from different pallets.

- 1 Maxima tiles should be laid straight bonded, commencing at the right hand side of the roof and working from right to left.
- 2 The following is the minimum specification for fixing Maxima tiles:

A – Tiles requiring once clipping should be fixed using a one piece SoloFix tile clip, located over the side lock of the tile (Fig. 30).

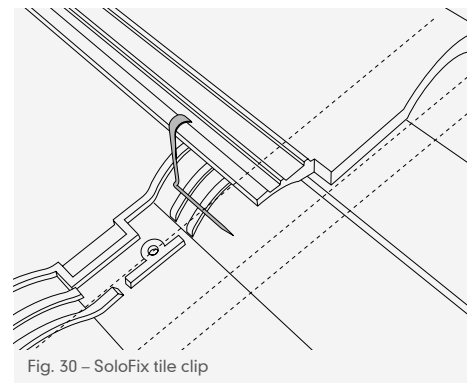


Fig. 30 – SoloFix tile clip

B – Tiles requiring clipping and nailing (side and head) should be fixed using a SoloFix tile clip, located over the side lock of the tile, and head nailed using a 45mm x 3.35mm aluminium nail.

- 3 All roof tiles should be mechanically fixed in accordance with BS 5534. For rafter pitches of 55° and over, the tail of each tile should also be mechanically fixed using SoloFix.

MAXIMA CLAY PROFILED TILES

EAVES

The eaves course tiles should be laid at the same pitch as the remainder of the roof with the fascia board or tilting fillet fixed at the correct height, taking account of any over fascia ventilation strip.

- 1 The roof underlay should be laid over the tilting fillet or eaves vent strip and into the gutter.
- 2 All eaves course tiles should be twice fixed; nailed and/or clipped using a purpose-made Maxima eaves clip nailed to the fascia or tilting fillet (Fig. 32).
- 3 A comb filler strip should be fitted above the fascia/tilting fillet/eaves vent strip to prevent the ingress of birds or vermin.
- 4 Position the eaves course batten to allow the bottom edge of the eaves course tiles to overhang the fascia board so that water discharges into the centre of the gutter; if no gutter is fixed an overhang of minimum 50mm should be allowed for.

See page 238 for 'Fascia Heights'.

UNIVERSAL EAVES VENT SYSTEM

10 and 25mm Universal eaves vent systems are available for Maxima tiles, see pages 128-132.

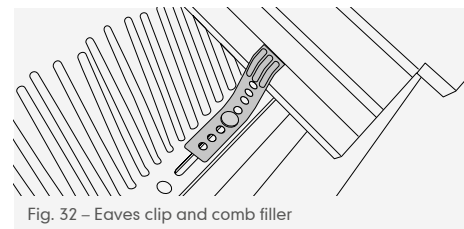


Fig. 32 – Eaves clip and comb filler

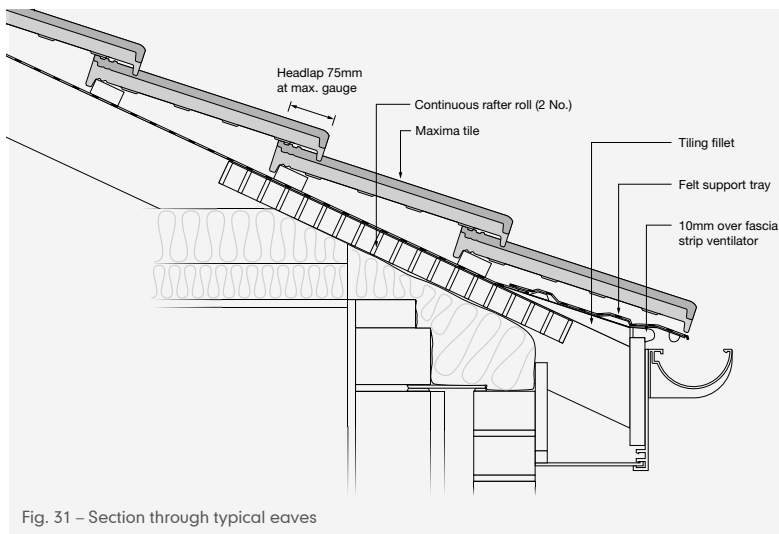


Fig. 31 – Section through typical eaves

MAXIMA CLAY PROFILED TILES

BEDDED VERGES

Verges should be formed using standard tiles for right hand verges with special left hand verge finishing tiles for left hand verges.

- 1 Verges should be formed by mortar bedding the tiles onto an undercloak of fibre reinforced cement strip (1200mm x 150mm).
- 2 Lay the strips of undercloak rough side up and closely butted together, with a slight tilt outwards to provide a drip edge with a 38-50mm overhang from the brickwork gable or bargeboard.

For Cloak verges, see pages 162-164.

- 3 Provide 65mm width of mortar to bed all verge tiles. Fix each verge tile with at least two mechanical fixings.
- 4 Head nail each verge tile using 45 x 3.25mm aluminium nails and purpose-made Maxima verge clips – both left hand and right hand.

- 5 Twice nail the verge clips to the battens with two 25 x 3.35mm aluminium nails and ensure the upstand is level with the undercloak.
- 6 Strike all mortar bedding off flush and neatly point in one operation.

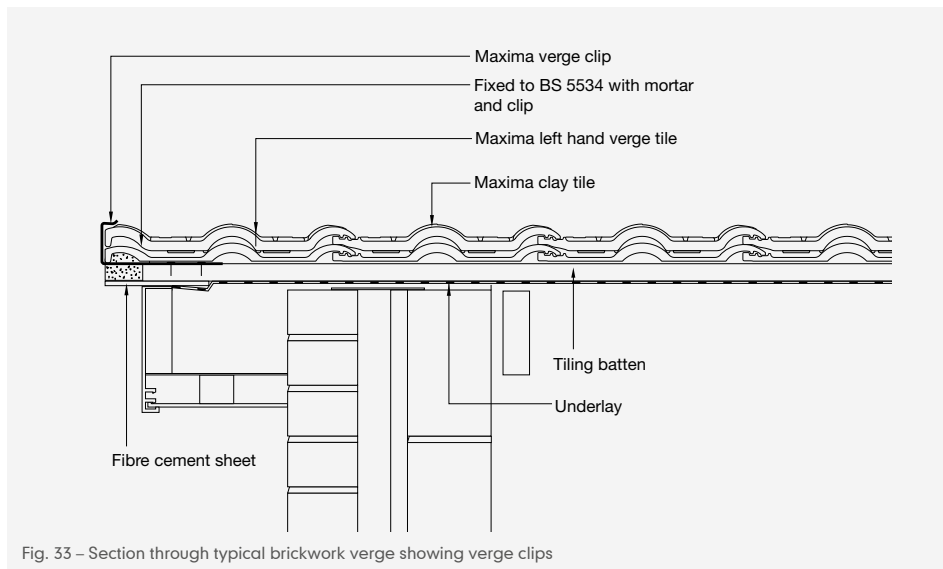


Fig. 33 – Section through typical brickwork verge showing verge clips

MAXIMA CLAY PROFILED TILES

RIDGES WITH 457mm SEGMENTAL RIDGE – BEDDED RIDGES

The roof apex should be covered using concrete segmental ridge tiles onto the top course of tiles with dentil slips bedded into the pans.

- 1 Ensure that a minimum 75mm cover is provided by ridge tile over the top course of tiles with any exposed mortar neatly pointed.
- 2 Bedded ridges must also be mechanically fixed using the Marley mortar bedded security ridge fixing kit, see pages 121-123.

UNIVERSAL RIDGEFAST

For use with concrete segmental ridges and Maxima tiles, RidgeFast provides a simple and rapidly installed, dry fixed ridge system (see pages 188-194).

A Block end ridge tile should be used at the gable end.

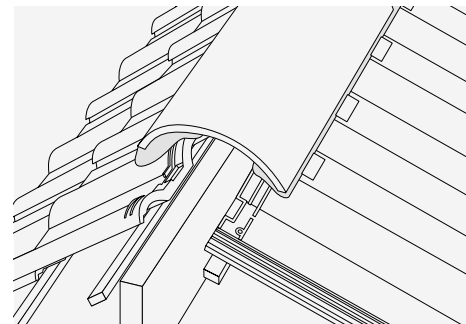


Fig. 34 – Bedded 457mm segmental ridge with security ridge fixing kit

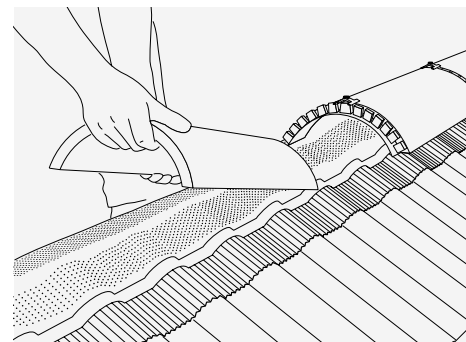


Fig. 35 – Ridge tiles laid with Universal RidgeFast unions

MAXIMA CLAY PROFILED TILES

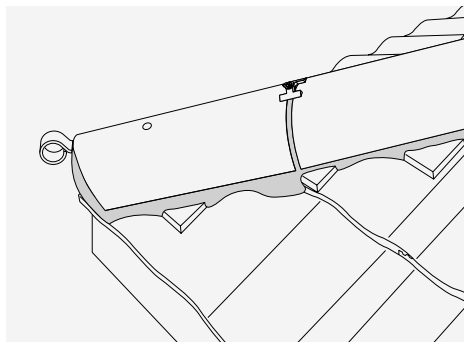


Fig. 36 – Mechanically fixed hip tiles

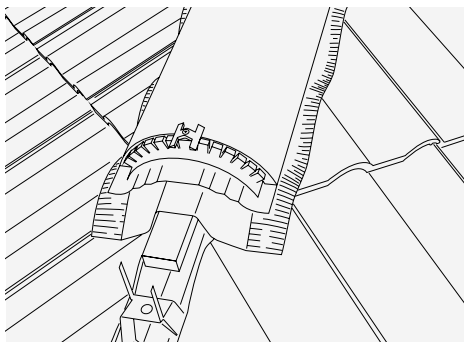


Fig. 37 – HipFast with Maxima clay interlocking tiles

BEDDED HIPS WITH 457MM THIRD ROUND HIP

- 1 Cut tiles to the rake of the hip and cover with concrete third round hip tiles, edge bedded, with dentil slips bedded in the pans of the adjacent raking cut tiles (Fig. 36).
- 2 Ensure that a minimum 75mm cover is provided by the hip tile over the adjacent courses of tiles with any exposed mortar neatly pointed.
- 3 Fix a hip iron at the base of the hip rafter and shape the first hip tile at the front to align with the tiling at the eaves. Secure by drilling a 6mm diameter hole through the tile 100mm from the end and screwing a 75mm screw into the batten. Mitre the junction of the hip and ridge, using a lead saddle in exposed locations.
- 4 Mortar bedded hip tiles must also be mechanically fixed using the Marley mortar bedded security hip fixing kit, see Fig. 36 and pages 124-126.

UNIVERSAL HIPFAST

For use with 457mm concrete third round hip tiles and Maxima tiles (Fig. 37), Universal HipFast is a simple and rapidly installed, dry fix hip system, see pages 170-175.

A third round stop end hip tile should be at the hip end.

MAXIMA CLAY PROFILED TILES

VALLEYS

- 1 Cut tiles to the rake of the valley trough, leaving a clear channel of minimum 125mm wide.
- 2 Form the valley with either a metal lining (Code 4 or 5 lead sheet) of not less than 500mm wide (see LSTA recommendations) or with a Marley Universal Dry Valley (see pages 182-185).
- 3 For mortar bedded valleys, bed raking cut tiles at the edges of the valley using mortar, ensuring that tile interlocks are kept free and there is adequate space kept clear behind the mortar to avoid water capillarity.
- 4 Ensure the mortar is laid onto a fibre cement undercloak strip above the lead valley gutter lining.
- 5 All tiles adjacent to the valley should be twice fixed and any small cut pieces of tile should be mechanically fixed using Marley purpose-made head and tail clips.

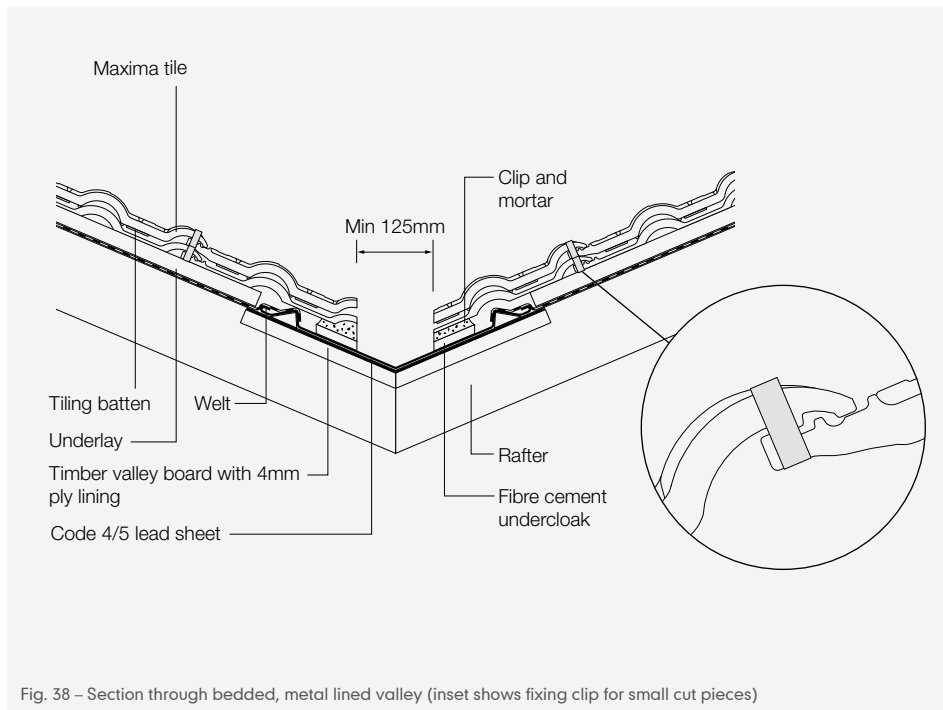


Fig. 38 – Section through bedded, metal lined valley (inset shows fixing clip for small cut pieces)

MELODIE CLAY PROFILED TILES

Melodie single lap clay interlocking roof tiles have the appearance of a traditional single pantile when laid on the roof. Tiles are laid single lap with a straight bond, utilising special left hand verge finishing tiles at bedded verges and at abutments. Dentil slips are also available for bedded ridges and hips.

SETTING OUT – VERTICAL COVERAGE

- 1 The tile battens should be set out at a maximum spacing of 348mm to ensure a minimum headlap of 92mm. Melodie tiles have a built in head lock adjustment which allows the gauge to be reduced within the range 348-314mm (Fig. 39).

When setting out the batten gauge for the Melodie tile, lay a sample set of seven to ten tiles on a flat surface with headlaps and interlocks engaged. Lay the tiles first with a tight headlock and calculate the average margin. Relay the tiles with an open headlock and recalculate the margin. The gauge used to set out the roof battens should equal a figure between these two averages.

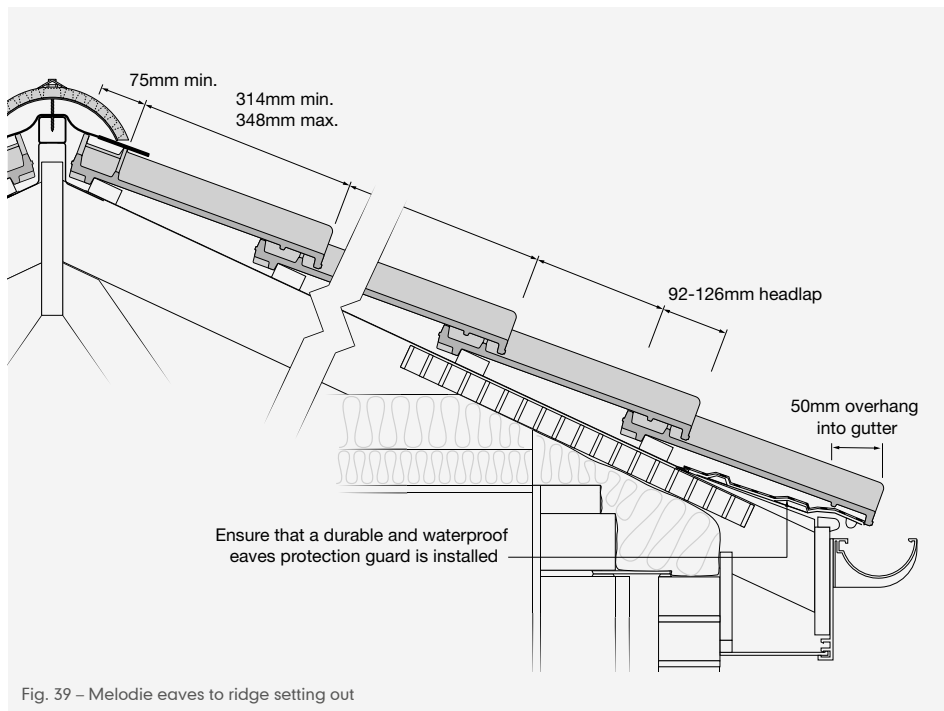


Fig. 39 – Melodie eaves to ridge setting out

MELODIE CLAY PROFILED TILES

Where two roof slopes of varying pitch intersect, the batten gauge should be set to the lower or longer rafter pitch.

- 2 Position the eaves course batten to allow the bottom edge of the eaves course tiles to overhang the fascia, due to the position of the interlock; an 80mm overhang of the fascia board with suitable gutter profile / positioning will be required.

Note: Depending on the gutter type, width and roof build up, a supplementary support in the form of a proprietary eaves support guard to channel any water away into the gutter may be required – alternative methods to drain any water that enters the interlock/drainage channel may be used.

- 3 Measure the distance between the top of the eaves batten and the top of the ridge course batten which should be fixed so that the ridge tile provides a minimum 75mm cover over top course tile.
- 4 Divide the distance by 348mm, the maximum gauge of the Melodie tile. Round this figure up to give the number of courses up the roof slope as a whole number. Divide the measured distance by the number of courses to give the required batten gauge.

Note: Batten gauges between fixed points should be calculated individually.

- 5 The practice of adjusting the gauge over the last few courses at eaves or ridge is technically acceptable provided the maximum gauge is not exceeded, although the resulting distortion of the diagonal lines may not be aesthetically acceptable.
- 6 Tiles should be nailed using a 45mm x 3.35mm aluminium nail and clipped at the top course.

LINEAR COVERAGE

The average linear coverage (cover width) of the Melodie tile is 209mm. There is a 4mm adjustment (shunt) built into the side interlocks to aid setting out across the roof.

- 1 Lay a course of tiles along the eaves length, setting the tiles at the average linear coverage, and make adjustment in the shunt to allow for a 38–50mm overhang at the verges.

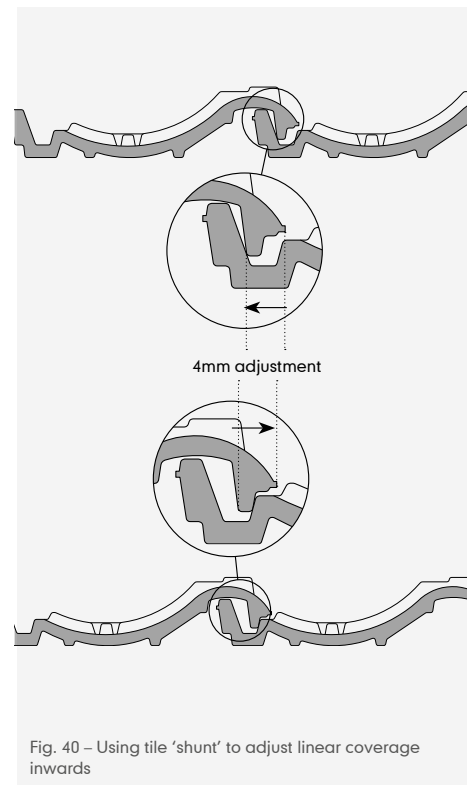


Fig. 40 – Using tile 'shunt' to adjust linear coverage inwards

MELODIE CLAY PROFILED TILES

- 2 Ensure that a Melodie left hand verge finishing tile is used to complete the linear tile array and that the verge overhang is equal on both left and right hand verges.

USING A GAUGING ROD

- 1 An alternative method is to use a gauging rod (a short length of batten) and mark the position of three tiles with their sidelocks fully closed, then mark the position of the three tiles 'open'. Set the average coverage by making a third mark midway between the previous two marks on the rod. Use this third position to set out the linear coverage on both eaves and top course battens.
- 2 Strike a chalk or ochre line from the eaves to ridge at each mark so that the tiles can be laid to a straight perpendicular alignment.

ALIGNMENT AND CUTTING OF TILES

Horizontal alignment can be checked by striking a chalk or ochre line at 900mm to the vertical line. Perpendicular alignment

should be checked by setting out the roof along the eaves starting with the correct overhang at the right hand verge.

- 1 The left hand verge can be achieved using special left hand verge finishing tiles (38-50mm verge overhang).
- 2 Cut tiles at the verge should be avoided wherever possible, but if this is unavoidable, should never be less than half the width of the standard tile.

GENERAL FIXING

Before commencing to tile the roof, check to ensure the correct fixing specification is being used. Load out all sides of the roof uniformly, randomly mixing tiles from different pallets.

- 1 Melodie tiles should be laid straight bonded, commencing at the right hand side of the roof and working from right to left.
- 2 The following is the minimum specification for fixing Melodie tiles:

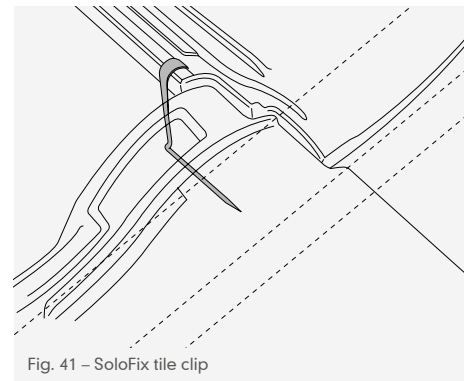


Fig. 41 – SoloFix tile clip

A – Tiles requiring once clipping should be fixed using a one piece SoloFix tile clip, located over the side lock of the tile (Fig. 41).

B – Tiles requiring clipping and nailing (side and head) should be fixed using a SoloFix tile clip), located over the side lock of the tile, and head nailed using a 45mm x 3.35mm aluminium nail.

MELODIE CLAY PROFILED TILES

EAVES

The eaves course tiles should be laid at the same pitch as the remainder of the roof with the fascia board or tilting fillet fixed at the correct height, taking account of any over fascia ventilation strip.

- 1 The roof underlay should be laid over the tilting fillet or eaves vent strip and into the gutter.
- 2 All eaves course tiles should be twice fixed; nailed and/or clipped using a purpose-made Melodie eaves clip nailed to the fascia or tilting fillet (Fig. 43).
- 3 A comb filler strip should be fitted above the fascia/tilting fillet/eaves vent strip to prevent the ingress of birds or vermin.
- 4 Position the eaves course batten to allow the bottom edge of the eaves course tiles to overhang the fascia, due to the position of the interlock; an 80mm overhang of the fascia board with suitable gutter profile or positioning to allow for the overhang will be required.

See pages 132 and 238 for 'Fascia heights'.

Note: Depending on the gutter type, width and roof build up, a supplementary support in the form of a proprietary eaves support guard to channel any water away into the gutter may be required – alternative methods to drain any water that enters the interlock/drainage channel may be used (Fig. 44).

UNIVERSAL EAVES VENT SYSTEM

10 and 25mm Universal eaves vent systems are available for Melodie tiles, see pages 128-132.

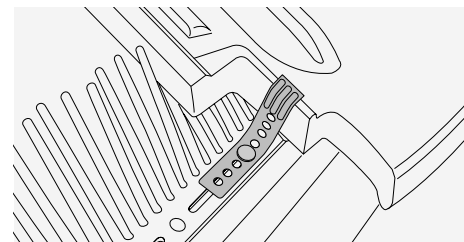


Fig. 44 – Eaves clip and comb filler

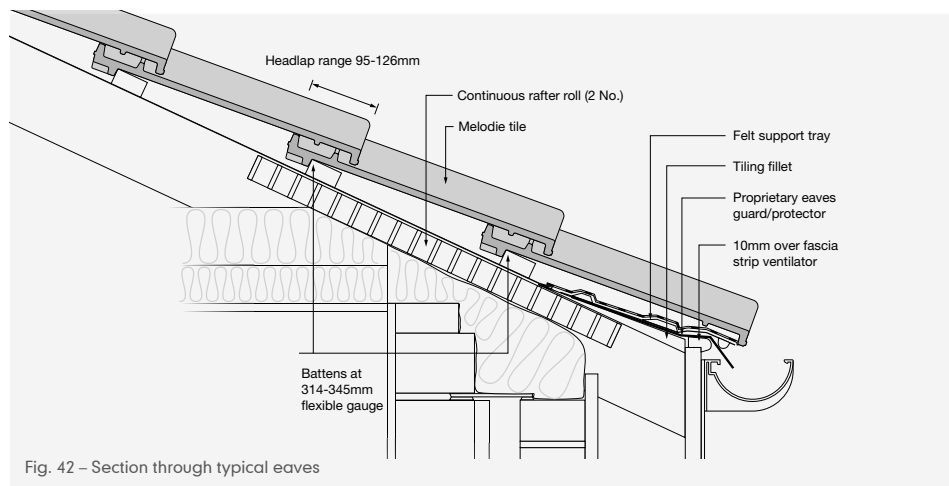


Fig. 42 – Section through typical eaves

MELODIE CLAY PROFILED TILES

BEDDED VERGES

Verges should be formed using standard tiles for right hand verges with special left hand verge finishing tiles for left hand verges.

- 1 Verges should be formed by mortar bedding the tiles onto an undercloak of fibre reinforced cement strip (1200mm x 150mm).
- 2 Lay the strips of undercloak rough side up and closely butted together, with a slight tilt outwards to provide a drip edge with a 38-50mm overhang from the brickwork gable or bargeboard.
- 3 Provide 65mm width of mortar to bed all verge tiles. Fix each verge tile with at least two mechanical fixings.
- 4 Head nail each verge tile using 45 x 3.25mm aluminium nails and purpose-made Melodie verge clips – both left hand and right hand.
- 5 Twice nail verge clips to battens with two 25mm x 3.35mm aluminium nails and ensure upstand is level with undercloak.
- 6 Strike all mortar bedding off flush and neatly point in one operation.

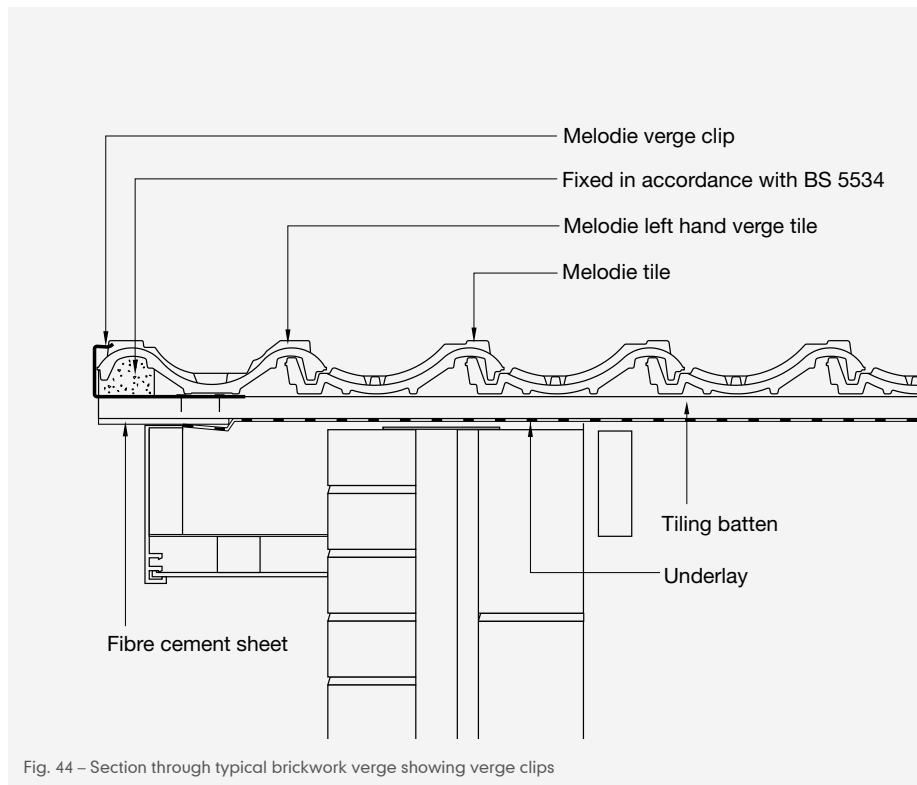


Fig. 44 – Section through typical brickwork verge showing verge clips

MELODIE CLAY PROFILED TILES

RIDGES WITH 457MM SEGMENTAL RIDGE – BEDDED RIDGES

The roof apex should be covered using concrete segmental ridge tiles onto the top course of tiles with dentil slips bedded into the pans.

- 1 Ensure that a minimum 75mm cover is provided by the ridge tile over the top course of tiles with any exposed mortar neatly pointed.
- 2 Mortar bedded ridges must also be mechanically fixed (Fig. 45) using the Marley mortar bedded security ridge kit (see pages 121-123).

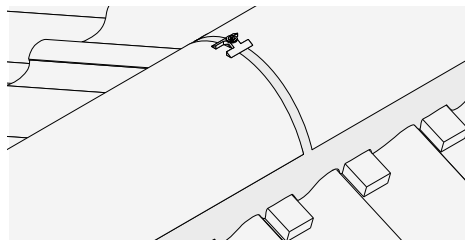


Fig. 45 – Bedded Segmental Ridge with security ridge kit

UNIVERSAL RIDGEFAST

For use with concrete segmental ridges and Melodie tiles, RidgeFast provides a simple and rapidly installed, dry fixed ridge system (see pages 188-194).

A Block end ridge tile should be used at the gable end.

BEDDED HIPS WITH 457MM THIRD ROUND HIP

- 1 Cut tiles to the rake of the hip and cover with concrete third round hip tiles, edge bedded, with dentil slips bedded in the pans of the adjacent raking cut tiles.
- 2 Ensure that a minimum 75mm cover is

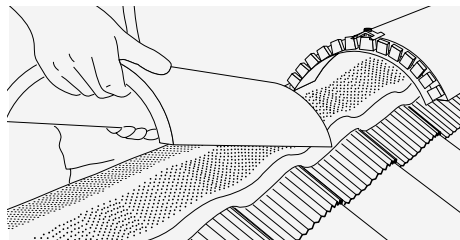


Fig. 46 – Ridge tiles laid with Universal RidgeFast unions

provided by the hip tile over the adjacent courses of tiles with any exposed mortar neatly pointed.

- 3 Fix a hip iron at the base of the hip rafter and shape the first hip tile at the front to align with the tiling at the eaves. Secure by drilling a 6mm diameter hole through the tile 100mm from the end and screwing a 75mm screw into the batten. Mitre the junction of the hip and ridge, using a lead saddle in exposed locations.
- 4 Mortar bedded hip tiles must also be mechanically fixed using the Marley mortar bedded security hip fixing kit (see pages 124-126).

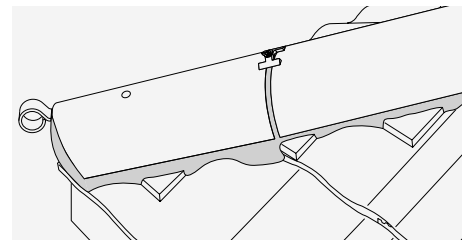


Fig. 47 – Mechanically fixed hip tiles

MELODIE CLAY PROFILED TILES

UNIVERSAL HIPFAST

For use with 457mm third round hip tiles, Universal HipFast is a simple and rapidly installed dry fix hip system, see pages 170-175.

A third round stop end hip tile should be at the hip end.

VALLEYS

- 1 Cut tiles to rake of the valley trough, leaving a clear channel of minimum 125mm wide.

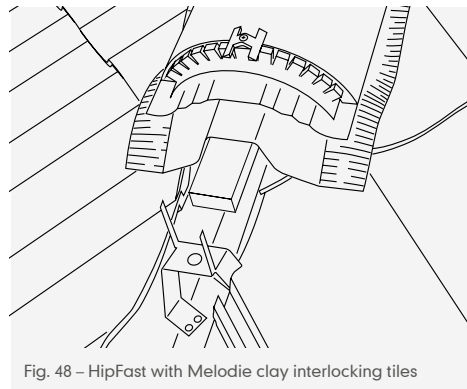


Fig. 48 – HipFast with Melodie clay interlocking tiles

- 2 Form the valley with either a metal lining (Code 4 or 5 lead sheet) of not less than 500mm wide (see LSA recommendations) or with a Marley Universal Dry Valley see pages 182-185.
- 3 For mortar bedded valleys, bed raking cut tiles at the edges of the valley using mortar, ensuring that tile interlocks are kept free and there is adequate space kept clear behind the mortar to avoid water capillarity.
- 4 Ensure the mortar is laid onto a fibre cement undercloak strip above the lead valley gutter lining.
- 5 All tiles adjacent to the valley should be twice fixed and any small cut pieces of tile should be mechanically fixed using Marley purpose-made head and tail clips.

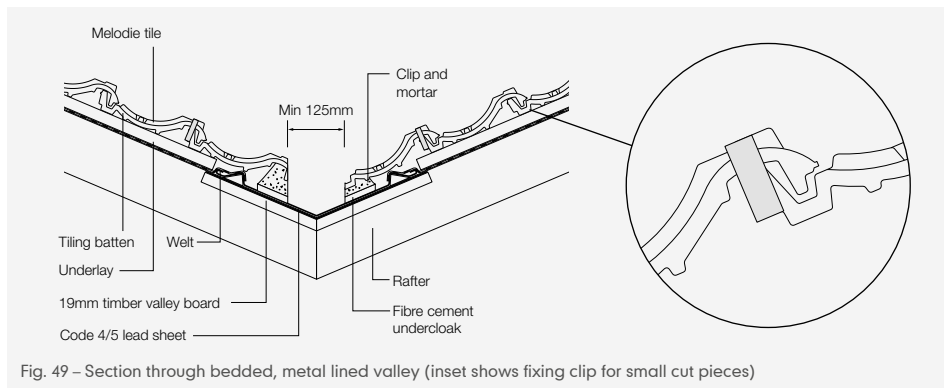


Fig. 49 – Section through bedded, metal lined valley (inset shows fixing clip for small cut pieces)

LINCOLN CLAY PROFILED TILES

Lincoln clay interlocking roof tiles have the appearance of a traditional clay pantile when laid on the roof. Tiles are laid single lap with a straight bond, using left hand verge tiles at verges and abutments.

Clay interlocking ridges and hips are compatible with Marley's mortar fixing kits and Universal dry fix accessories. Dentil slips are also available for traditionally bedded ridges and hips.

SETTING OUT – VERTICAL COVERAGE

- 1 Lincoln tiles have an open gauge, which can be adjusted up to a maximum spacing of 295mm to ensure a minimum headlap of 75mm (Fig. 50). Where two roof slopes of varying pitch intersect, the batten gauge should be set to the lower or longer rafter pitch.
- 2 Position the eaves course batten to allow the bottom edge of the eaves course tiles to overhang the fascia board, so that water discharges into the centre of the gutter.

If no gutter is fixed an overhang of a minimum of 50mm should be allowed for.

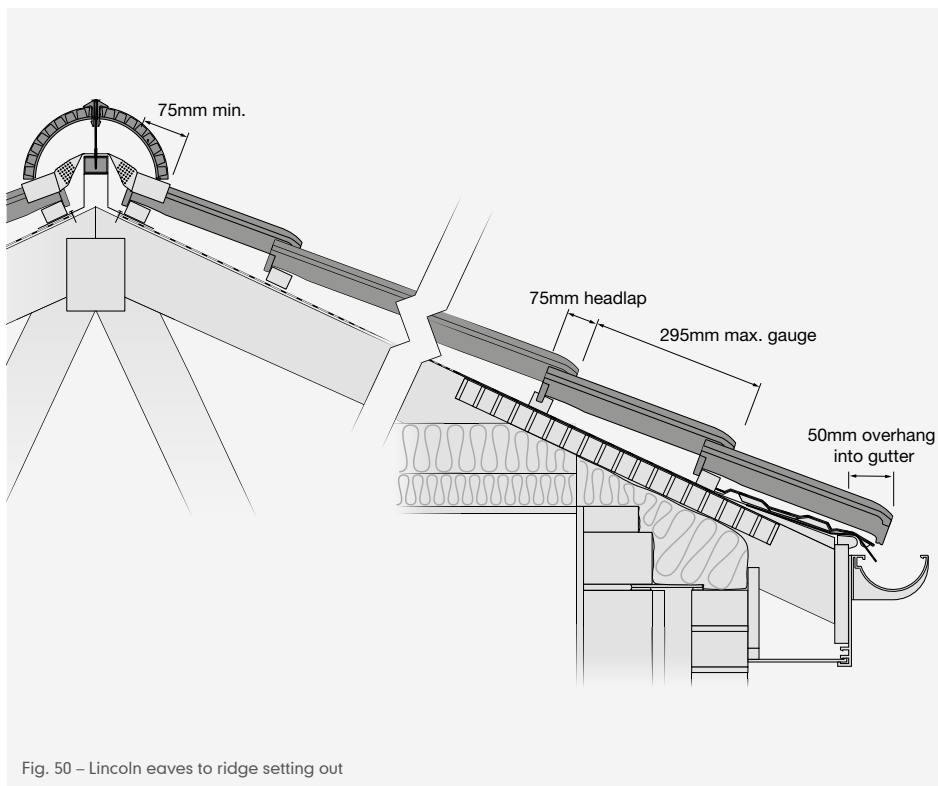


Fig. 50 – Lincoln eaves to ridge setting out

LINCOLN CLAY PROFILED TILES

- 3 Measure the distance between the top of the eaves batten and the top of the ridge course batten, which should be fixed so that the ridge tile provides a minimum 75mm cover over top course tile.
- 4 To maintain the chosen headlap, for example 120mm, divide the distance by 250mm and round this figure up to give the number of courses up the roof slope as a whole number. Divide the measured distance by the number of courses to give the required batten gauge.
- 5 The practice of adjusting the gauge over the last few courses at eaves or ridge is technically acceptable provided the maximum gauge is not exceeded. Care should be taken however, as the diagonal lines may not be aesthetically acceptable.
- 6 Tiles should be nailed using a 38mm x 3.35mm aluminium nail and clipped with SoloFix. Both fixings must be used at the top course.

LINEAR COVERAGE

The average linear coverage (cover width) of the Lincoln tile is 222mm. There is up to 5mm adjustment (shunt) built into the side interlocks to aid setting out across the roof.

- 1 For maximum adjustment, particularly with clay tiles, it is recommended to lay the first course of tiles with intermediate shunt of 2mm. This enables some closure to be made for best fit, working up the roof.
- 2 Ensure that a Lincoln left hand verge tile is used to complete the linear tile array and that the verge overhang of 38mm-50mm is equal on both left and right hand verges.

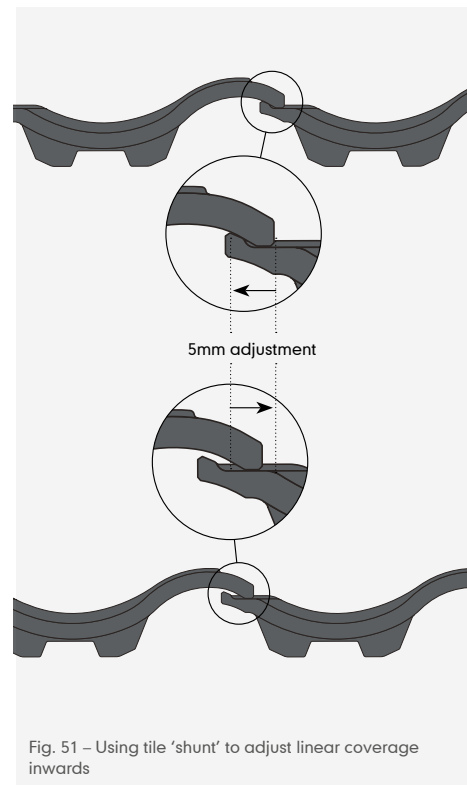


Fig. 51 – Using tile 'shunt' to adjust linear coverage inwards

LINCOLN CLAY PROFILED TILES

USING A GAUGING ROD

- 1 An alternative method is to use a gauging rod (a short length of batten) and mark the position of three tiles with their sidelocks fully closed, then mark the position of the three tiles 'open'. Set the average coverage by making a third mark midway between the two previous two marks on the rod.

Use this third position to set out the linear coverage on both eaves and top course battens.

- 2 Strike a chalk or ochre line from the eaves to ridge at each mark so that the tiles can be laid to a straight perpendicular alignment.

ALIGNMENT AND CUTTING OF TILES

Horizontal alignment can be checked by striking a chalk or ochre line at 900mm to the vertical line. Perpendicular alignment should be checked by setting out the roof along the eaves starting with the correct overhang at the right hand verge.

- 1 The left hand verge can be achieved using special left hand verge finishing tiles (38-50mm verge overhang).
- 2 Cut tiles at the verge should be avoided wherever possible, but if this is unavoidable, they should never be less than half the width of the standard tile.

GENERAL FIXING

Before commencing to tile the roof, check to ensure the correct fixing specification is being used. Load out all sides of the roof uniformly, randomly mixing tiles from different pallets.

Lincoln tiles should be laid straight bonded, commencing at the right hand side of the roof and working from right to left.

- 1 Tiles can be fixed using a 38mm x 3.35mm aluminium nail.
- 2 Tiles requiring once clipping should be fixed using a one piece SoloFix tile clip, located over the side lock of the tile (Fig. 52).

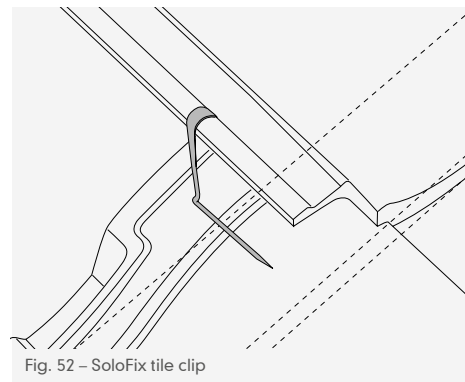


Fig. 52 – SoloFix tile clip

- 3 Tiles requiring clipping and nailing (side and head) should be fixed using a SoloFix tile clip, located over the side lock of the tile, and head nailed using a 38mm x 3.35mm aluminium nail.

LINCOLN CLAY PROFILED TILES

EAVES

The eaves course tiles should be laid at the same pitch as the remainder of the roof with the fascia board or tilting fillet fixed at the correct height, taking account of any over fascia ventilation strip.

- 1 The roof underlay should be laid over the tilting fillet or eaves vent strip and into the gutter (Fig. 53).
- 2 All eaves course tiles should be twice fixed; nailed with 38mm x 3.35mm aluminium nail and clipped using a Lincoln eaves clip nailed to the fascia or tilting fillet (Fig. 54).
- 3 A comb filler strip should be fitted above the fascia/tilting fillet/eaves vent strip to prevent the ingress of birds or vermin.
- 4 Position the eaves course batten to allow the bottom edge of the eaves course tiles to overhang the fascia board by 50mm into the gutter.

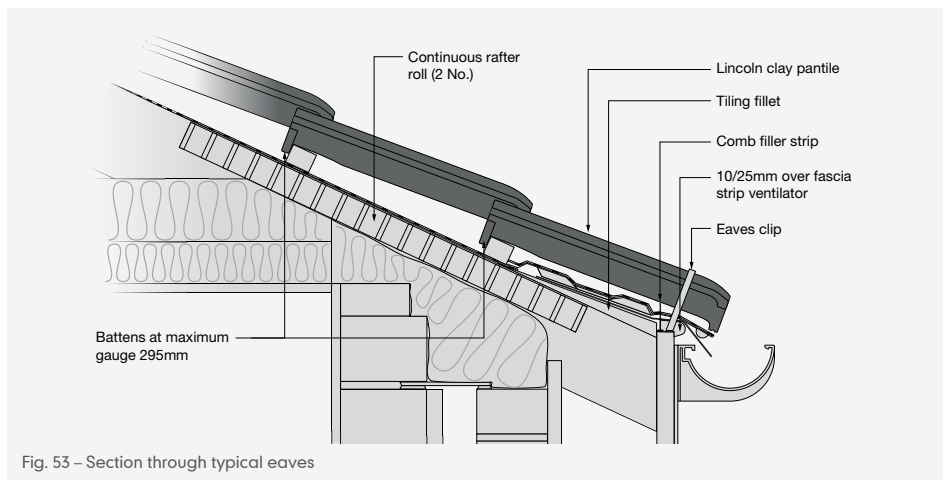


Fig. 53 – Section through typical eaves

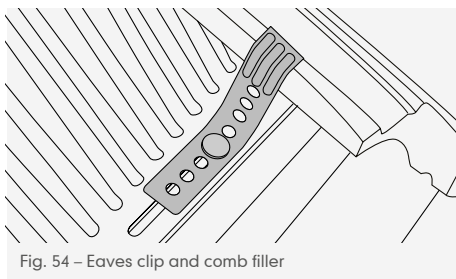


Fig. 54 – Eaves clip and comb filler

LINCOLN CLAY PROFILED TILES

BEDDED VERGES

Verges should be formed using standard tiles for right hand verges with special left hand verge tiles for left hand verges.

- 1 Verges should be formed by mortar bedding the tiles onto an undercloak of fibre reinforced cement strip (1200mm x 150mm).
- 2 Lay the strips of undercloak rough side up and closely butted together, with a slight tilt outwards to provide a drip edge with a 38-50mm overhang from the brickwork gable or bargeboard.
- 3 Provide 65mm width of mortar to bed all verge tiles. Fix each verge tile with at least two mechanical fixings.
- 4 Head nail each verge tile using 38mm x 3.35mm aluminium nails and purpose-made Lincoln verge clips (left hand and right hand).
- 5 Twice nail the verge clips to the battens with two 38mm x 3.35mm aluminium nails and ensure upstand is level with the undercloak.
- 6 Strike all mortar bedding off flush and neatly point in one operation.

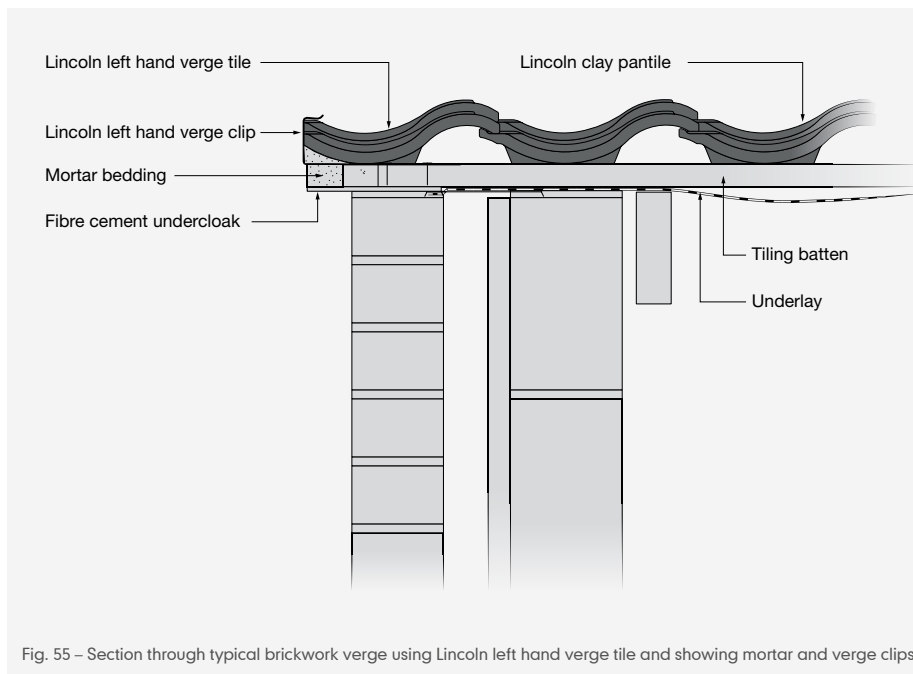


Fig. 55 – Section through typical brickwork verge using Lincoln left hand verge tile and showing mortar and verge clips

LINCOLN CLAY PROFILED TILES

UNIVERSAL RIDGEFAST

For use with 375mm clay half round ridges, RidgeFast provides a simple and rapidly installed dry fixed ridge system (Fig 56). A 375mm clay ridge end tile, which is pre-holed for fixing, should be used at the gable ends.

100mm x 4.8mm screw packs for deep ridges should be used for fixing the union clamps (see page 192).

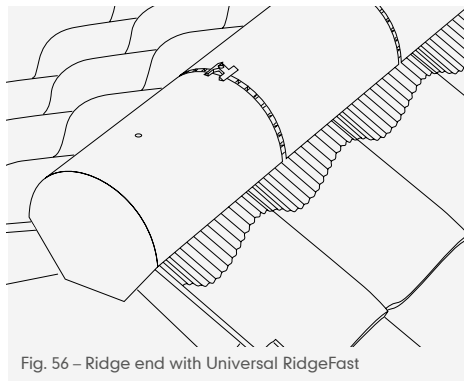


Fig. 56 – Ridge end with Universal RidgeFast

RIDGES WITH 375mm HALF ROUND RIDGES

The roof apex should be covered using 375mm clay half round ridge tiles, edge bedded onto the top course of tiles, with dentil slips bedded into the pans.

- 1 Ensure that a minimum 75mm cover is provided by the ridge tile over the top course of tiles with any exposed mortar neatly pointed.

- 2 Mortar bedded ridges should also be mechanically fixed using Marley mortar bedded security ridge fixing kits and 100mm x 4.8mm screw packs for deep ridges (Fig. 57).
- 3 Marley recommend finishing the ridge with a 375mm half round ridge end tile, which is pre-holed for fixing. Ridge ends should be fixed using 100mm x 4.8mm screw packs for deep ridges.

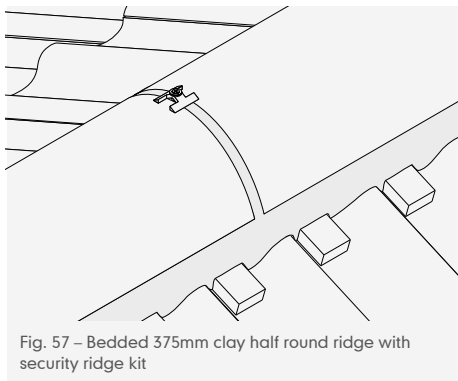


Fig. 57 – Bedded 375mm clay half round ridge with security ridge kit

LINCOLN CLAY PROFILED TILES

BEDDED HIPS WITH 375mm THIRD ROUND HIP

- 1 Cut tiles to the rake of the hip and cover with 375mm clay third round hip tiles, edge bedded, with dentil slips bedded in the pans of the adjacent raking cut tiles.
- 2 Ensure that a minimum 75mm cover is provided by the hip tile over the adjacent courses of tiles with any exposed mortar neatly pointed.
- 3 Mortar bedded hip tiles must also be mechanically fixed using Marley mortar bedded security hip fixing kits (Fig. 58).

- 4 Marley recommend finishing the hip with a 375mm third round hip end tile, which is pre-holed for fixing.
- 5 Mitre the junction of the hip and ridge, using a lead saddle in exposed locations.

UNIVERSAL HIPFAST

For use with 375mm clay third round hip tiles, HipFast provides a simple and rapidly installed, dry fixed ridge system. A 375mm clay hip end tile, which is pre-holed for fixing, should be used at the hip ends (Fig. 59). See pages 170-175.

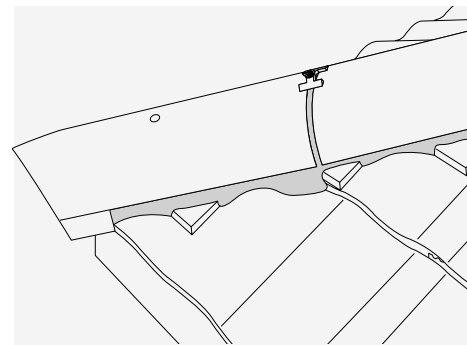


Fig. 58 – Hip end tile with mortar bedded security fixing kit

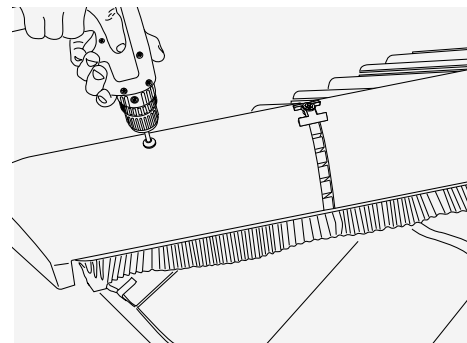


Fig. 59 – Mechanically fixed hip end using HipFast system

LINCOLN CLAY PROFILED TILES

BEDDED VALLEY

- 1 Cut tiles to the rake of the valley trough, leaving a clear channel of minimum 125mm wide.
- 2 Form the valley with either a metal lining (Code 4 or 5 lead sheet) of not less than 500mm wide (see LSTA* recommendations).
- 3 Bed raking cut tiles at the edges of the valley using mortar, ensuring that tile interlocks are kept free and there is adequate space kept clear behind the mortar to avoid water capillarity.
- 4 Ensure the mortar is laid onto a fibre cement undercloak strip above the lead valley gutter lining.
- 5 All tiles adjacent to the valley should be twice fixed and any small cut pieces of tile should be mechanically fixed using Marley head clips or retention clips (Fig. 60).

* Lead Sheet Training Academy

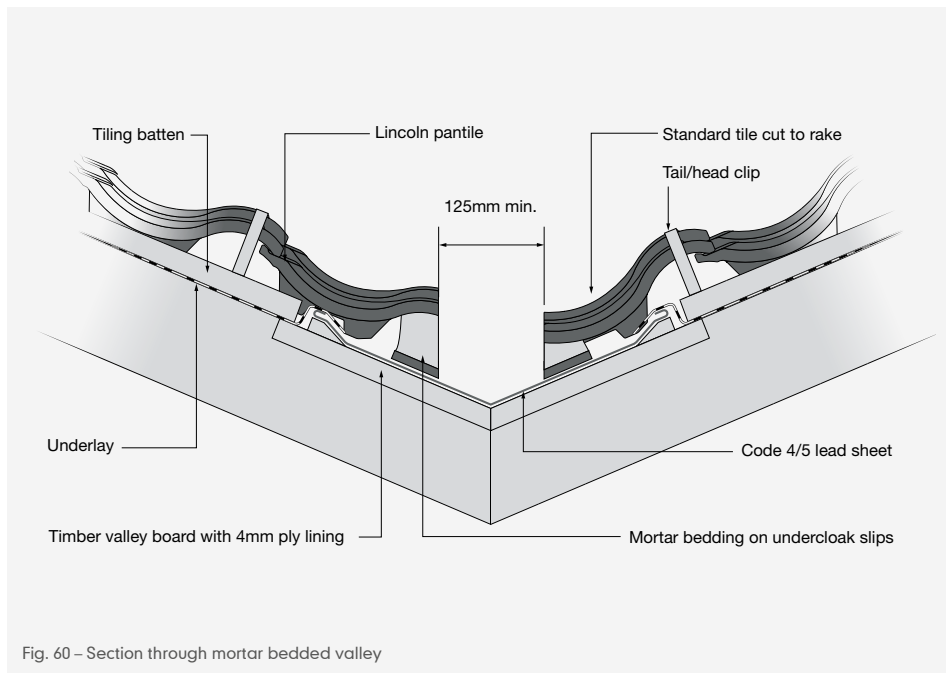


Fig. 60 – Section through mortar bedded valley

UNIVERSAL GRP VALLEY

Labels in the diagram include:

- Battens at max. 295mm gauge
- SoloFix clip
- Lincoln clay pantiles cut to angle of valley
- Tail/head clip
- Tiling batten
- High profile dry valley trough
- 19mm (min.) timber valley board
- Underlay
- Rafter
- Lincoln clay pantile

Fig. 61 – Section through Universal GRP valley

EDEN CLAY PANTILES

Marley Eden clay pantiles are laid single lap to a fixed gauge and with a straight bond, using left and right hand finishing tiles at verges and abutments.

Clay ridge and hip tiles are compatible with Marley's mortar bedded security fixing kits and Universal dry fix accessories for Eden clay pantiles. Dentil slips are also available for traditionally bedded ridges and hips.

SETTING OUT THE ROOF

When setting out the tile courses from eaves to ridge, it is important that the eaves course and the top course are set correctly (Fig. 1).

The eaves course should be set so that the tail of the tile allows for any water being discharged does so into the centre of the gutter. If no gutter is present at the time of tile installation, then a 50mm minimum overhang should be allowed for.

The top course should be set so that minimum 75mm over lap of the ridge tile can be achieved.

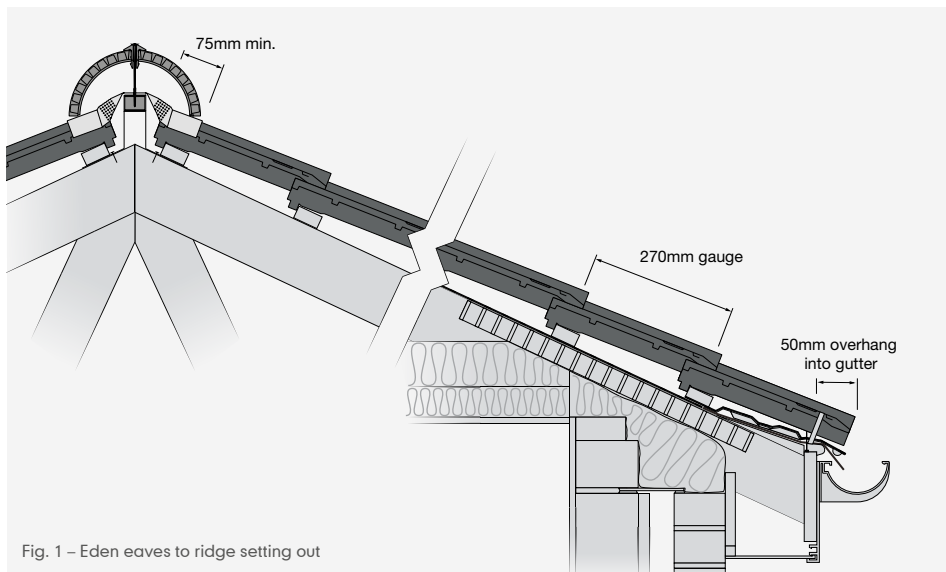


Fig. 1 – Eden eaves to ridge setting out

Once the eaves and top courses have been set, the gauge of the courses between is then found by measuring from the top of the eaves batten to the top of the top batten, dividing this distance by the tiles gauge, which is 270mm.

EDEN CLAY PANTILES

LINEAR COVERAGE

The average linear coverage (cover width) of the Eden tile is 215mm.

Ensure that an Eden left or right hand finishing tile is used to complete the linear tile array. Ensure that the overhang at the verge is no more than 50mm.

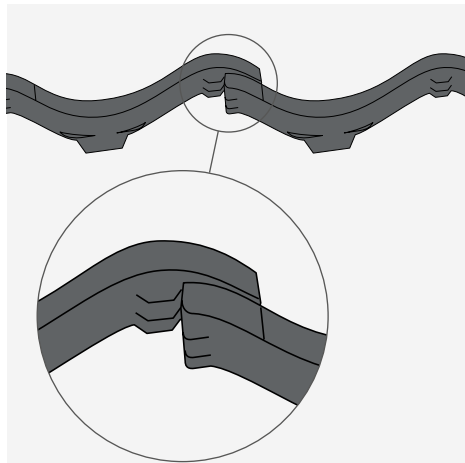


Fig. 2 – Full engagement of adjacent Eden tiles

USING A GAUGING ROD

- 1 An alternative method is to use a gauging rod (a short length of batten) and mark the position of two or three tiles when fully engaged.

Use the gauging rod to set out the linear coverage on both eaves and top course battens.

- 2 Strike a chalk or ochre line from the eaves to ridge at each mark so that the tiles can be laid to a straight perpendicular alignment.

CUTTING EDEN TILES

On occasion it is impossible to set out fixed gauge single lap clay tiles to achieve a full course at the ridge.

Therefore either the top or eaves course must be cut/trimmed to size, i.e. at the top course, the top of the tile is cut off and the remainder of the tile is re-drilled on site to form a new nail hole or if shortening the eaves course is required, trimming the top right shoulder of the tile will allow them to be closed up.

Cut tiles at the verge should be avoided wherever possible, but if this is unavoidable, they should never be less than half the width of the standard tile.

GENERAL FIXING

Before commencing to tile the roof, check to ensure the correct fixing specification is being adhered to. Load out all sides of the roof uniformly, randomly mixing tiles from different pallets.

Eden tiles should be laid straight bonded, commencing with a right hand finishing tile and working from right to left.

- 1 Tiles can be fixed using a 45mm x 3.35mm aluminium nail.
- 2 Tiles requiring once clipping should be fixed using a one piece SoloFix tile clip, located on the left hand side of the tile where a clip fixing channel is present (Fig. 3).
- 3 Tiles that require two mechanical fixings can utilise a combination of SoloFix, verge and Eaves clips in conjunction with the nail fixing.

EDEN CLAY PANTILES

EAVES

The eaves course tiles should be laid at the same pitch as the remainder of the roof with the fascia board or tilting fillet fixed at the correct height, taking account of any over fascia ventilation strip.

- 1 The roof underlay should be laid over the tilting fillet or eaves vent strip and onto the felt support tray (Fig. 4).
- 2 All eaves course tiles should be twice fixed; nailed with 45mm x 3.35mm aluminium nail and clipped using a Eden eaves clip nailed to the fascia or tilting fillet.
- 3 A comb filler strip should be fitted above the fascia/tilting fillet/eaves vent strip to prevent the ingress of birds or vermin (Fig. 5).

For fascia heights, see page 132.

UNIVERSAL EAVES VENT SYSTEM

10 and 25mm Universal eaves vent systems are available for Eden tiles, see pages 128-132.

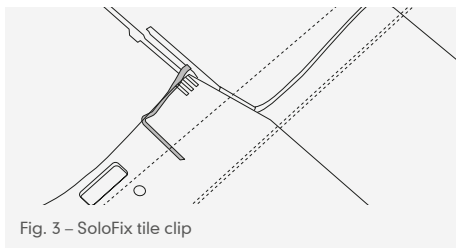


Fig. 3 – SoloFix tile clip

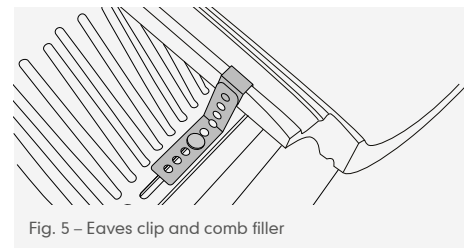


Fig. 5 – Eaves clip and comb filler

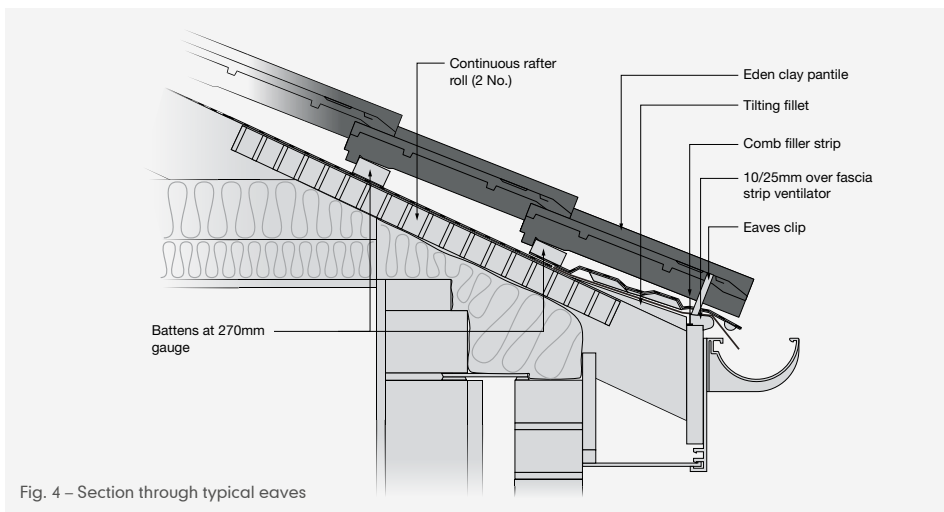


Fig. 4 – Section through typical eaves

EDEN CLAY PANTILES

BEDDED VERGES

Verges should be formed using left and right hand tiles (Fig. 6).

- 1 Verges should be formed by mortar bedding the tiles onto an undercloak of fibre reinforced cement strip (1200mm x 150mm).
- 2 Lay the strips of undercloak rough side up and closely butted together, with a slight tilt outwards to provide a drip edge with a 38-50mm overhang from the brickwork gable or bargeboard.
- 3 Provide 65mm width of mortar to bed all verge tiles. Fix each verge tile with at least two mechanical fixings.
- 4 Nail each verge tile using 45mm x 3.35mm aluminium nails and (left hand and right hand).
- 5 Twice nail the verge clips to the battens with two 38mm x 3.35mm aluminium nails and ensure upstand is level with the outside edge of the undercloak.
- 6 Strike all mortar bedding off flush and neatly point in one operation.

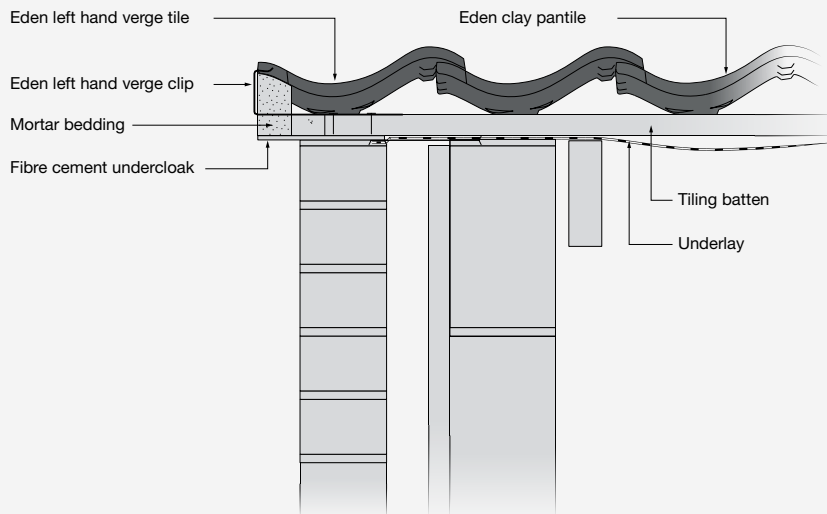


Fig. 6 – Section through typical brickwork verge using Eden left hand verge tile and showing mortar and verge clips

EDEN CLAY PANTILES

BEDDED RIDGES

Bedded ridges with 375mm half round ridges (Figs. 7 and 8)

The roof apex should be covered using 375mm clay half round ridge tiles, edge bedded onto the top course of tiles, with dentil slips bedded into the pans.

- 1 Ensure that a minimum 75mm cover is provided by the ridge tile over the top course of tiles with any exposed mortar neatly pointed.
- 2 Mortar bedded ridges should also be mechanically fixed using Marley mortar bedded security ridge fixing kits and 100mm x 4.8mm screw packs for deep ridges.
- 3 Marley recommend finishing the ridge with a 375mm half round ridge end tile, which is pre-holed for fixing. Ridge ends should be fixed using 100mm x 4.8mm screw packs for deep ridges.

For further details on mortar bedded security ridge fixing kits, including batten height settings, see pages 121-123.

UNIVERSAL RIDGEFAST

For use with 375mm clay half round ridges, RidgeFast provides a simple and rapidly installed dry fixed ridge system. A 375mm clay ridge end tile, which is pre-holed for fixing, should be used at the gable ends.

100mm x 4.8mm screw packs for deep ridges should be used for fixing the union clamps.

For further details on Universal RidgeFast components and batten height settings, see pages 188-194.

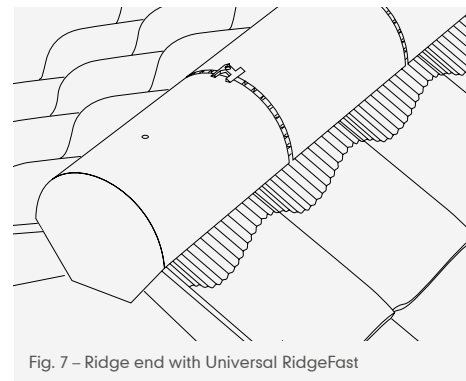


Fig. 7 – Ridge end with Universal RidgeFast

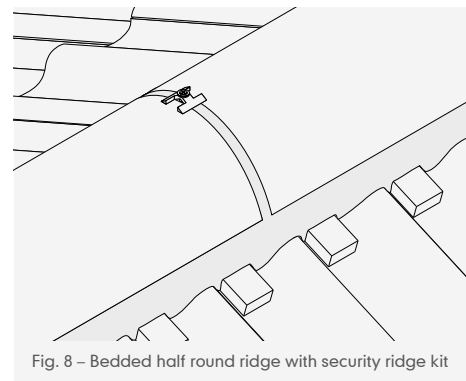


Fig. 8 – Bedded half round ridge with security ridge kit

EDEN CLAY PANTILES

BEDDED HIPS WITH 375mm THIRD ROUND HIP (FIG. 9)

- 1 Secure with a combination of nailing and clipping, utilizing either the secret cut tile clip for a mechanical fixing or head clip and tail clips.

Cut tiles to the rake of the hip and cover with 375mm clay third round hip tiles, edge bedded, with dentil slips bedded in the pans of the adjacent raking cut tiles.

- 2 Ensure that a minimum 75mm cover is provided by the hip tile over the adjacent courses of tiles with any exposed mortar neatly pointed.
- 3 Mortar bedded hip tiles must also be mechanically fixed using Marley mortar bedded security hip fixing kits (Fig. 9).
- 4 Marley recommend finishing the hip with a 375mm third round hip end tile, which is pre-holed for fixing.

- 5 Mitre the junction of the hip and ridge, using a lead saddle in exposed locations.

For further details of mortar bedded security hip fixing kits, including batten height settings, see pages 124-126.

UNIVERSAL HIPFAST

For use with 375mm clay third round hip tiles, HipFast provides a simple and rapidly installed, dry fixed ridge system. A 375mm clay hip end tile, which is pre-holed for fixing, should be used at the hip ends (Fig. 10).

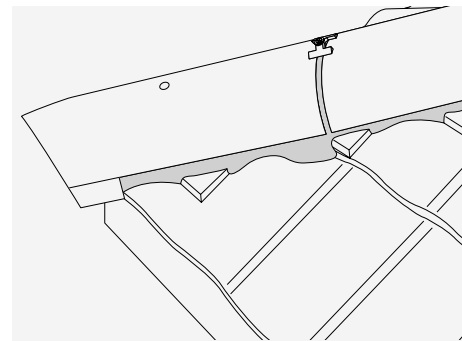


Fig. 9 – Hip end tile with mortar bedded security fixing kit

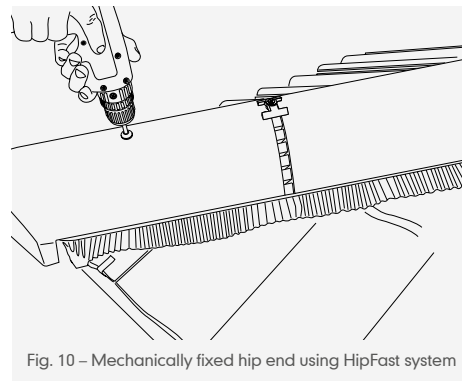


Fig. 10 – Mechanically fixed hip end using HipFast system

EDEN CLAY PANTILES

BEDDED VALLEY (FIG. 11)

- 1 Cut tiles to the rake of the valley trough, leaving a clear channel of minimum 125mm wide.
- 2 Form the valley with either a metal lining (Code 4 or 5 lead sheet) of not less than 500mm wide (see LSTA recommendations).
- 3 Bed raking cut tiles at the edges of the valley using mortar, ensuring that tile interlocks are kept free and there is adequate space kept clear behind the mortar to avoid water capillarity.
- 4 Ensure the mortar is laid onto a fibre cement undercloak strip above the lead valley gutter lining to prevent cracking from expansion.
- 5 All tiles adjacent to the valley should be twice fixed and any small cut pieces of tile should be mechanically fixed with a combination of nailing and clipping, utilizing either the secret cut tile clip for a mechanical fixing or head clip and tail clips.

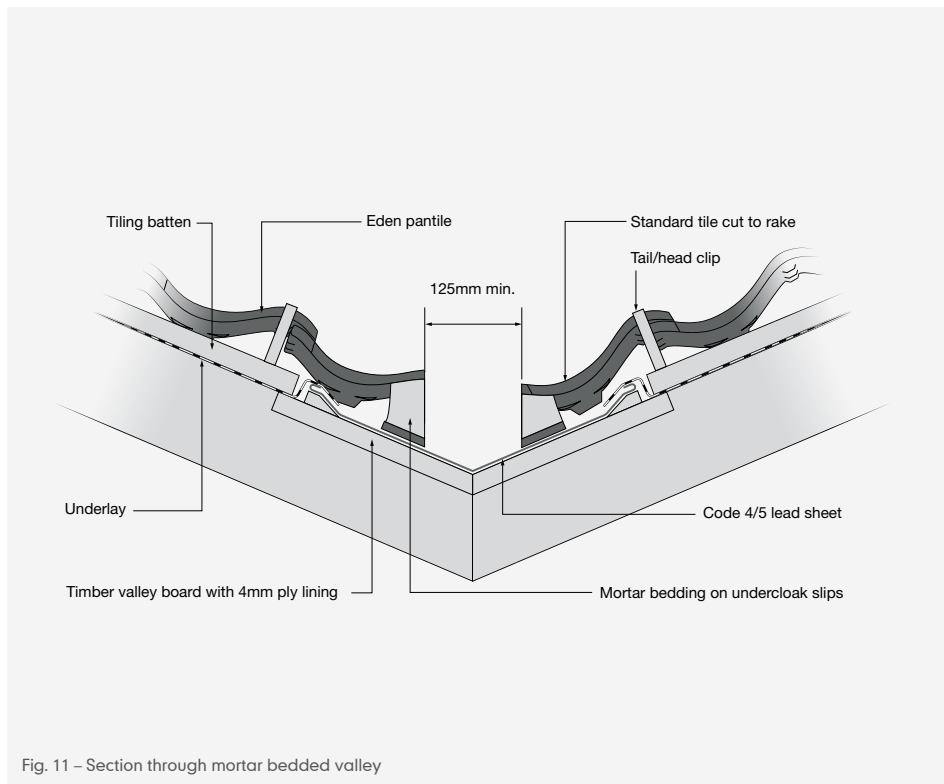


Fig. 11 – Section through mortar bedded valley

EDEN CLAY PANTILES

UNIVERSAL GRP VALLEY

The Marley Universal high profile dry valley system (Fig. 12) is suitable for use with Eden clay pantiles.

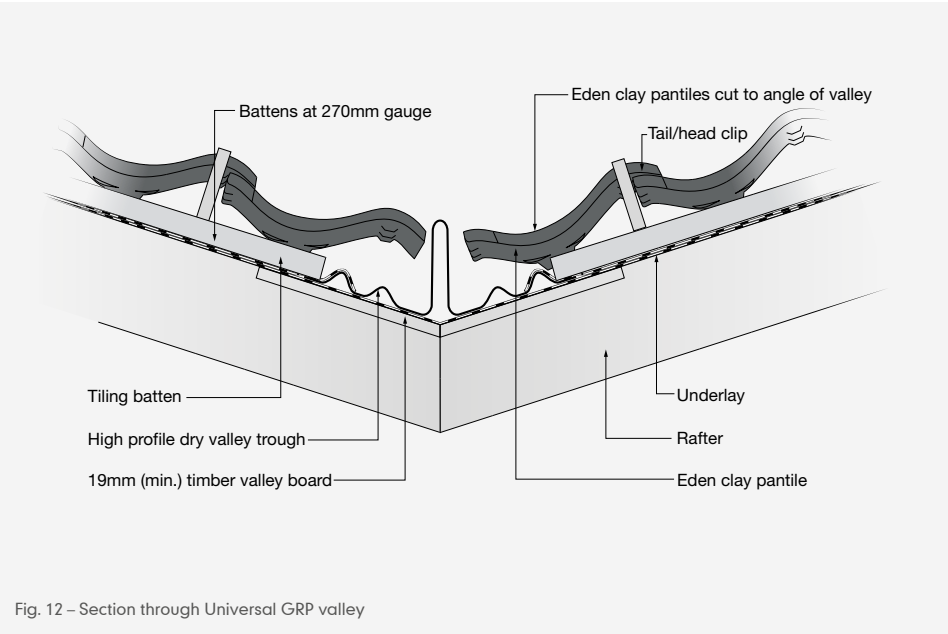


Fig. 12 – Section through Universal GRP valley



SHINGLES AND SHAKES

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- 113 GENERAL LAYING
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- 117 HIPS AND VALLEYS
- 118 VERTICAL APPLICATIONS
- 119 COVERAGE

SETTING OUT

The shingles should be fixed at the appropriate gauge directly onto roofing battens.

Shingles should be spaced 5mm apart and be nailed or stapled twice. The nails/staples should be fixed 19mm in from the edge and 38mm above the butt of the course above.

Joints in any one course should have a side lap of not less than 38mm from the joint in adjacent courses and in any 3 courses, no 2 joints should align. Battens should be strong and stiff enough to withstand the proposed loading and provide adequate fixing and alignment.

They should comply to BS 5534. Marley recommends JB Red factory graded battens, 25 x 38mm. A vapour permeable type underlay that meets annex A BS 5534 is recommended.

Shingle can be used over a variety of roof types – boarded roofs, metal decks and warm roof construction. Care should be taken to follow current building regulations and individual specifications can be determined in conjunction with the insulation

manufacturer. Counter battens are used to create a vented space over the insulation where a water impermeable membrane must be used.

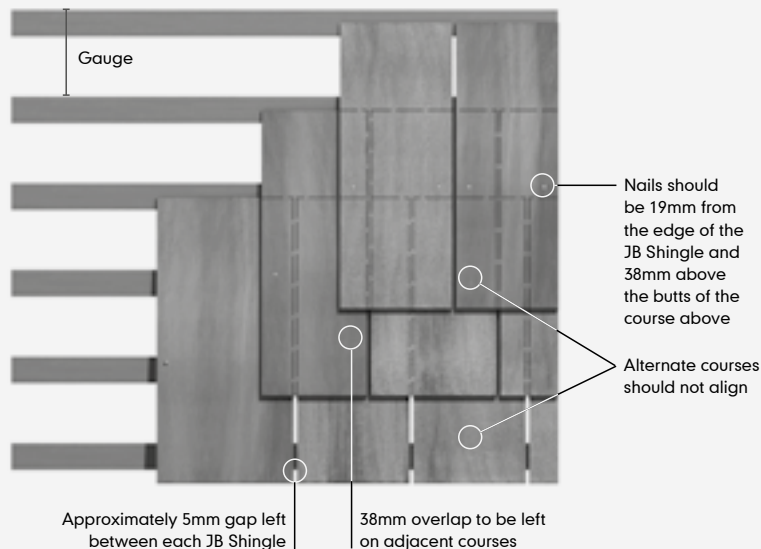


Fig. 1 – Setting out. Note: to allow for adequate airflow, counter battens should be used for all applications

GENERAL LAYING

- 1 Getting started: Spend some time selecting the best face of the shingles.
- 2 A double eaves course is required and should overhang 38mm into the gutter (Fig. 2)

A broken bond pattern should be maintained and shingles should be twice nailed or stapled.

- 3 Mark batten location with a chalk line to establish correct fixing position (Fig 3).

- 4 Continue laying courses of shingles up roof slope (Fig. 4).
- 5 Shingles can be easily trimmed to size using a straight edge and sharp knife (Fig. 5).

FIXINGS

Marley recommends 2 x 31mm x 1.8mm silicon bronze nails per shingle and 4 x 45mm x 2.65mm silicon bronze nails for Hip & Ridge capping.

CONDITIONING

Marley recommend that all timber handled on site is managed as per BS 8000-5 and 6: 1990 Workmanship on Building Sites.



Fig. 2



Fig. 3



Fig. 4



Fig. 5

GENERAL LAYING

FIXING GUIDELINES

The corrosive nature of WRC (Western Red Cedar) extractives requires the use of corrosion-resistant nails or fixings particularly in applications where the timber may get wet. Iron and copper nails rapidly decompose and deteriorate, leaving holes in the timber where the nails used to be after only 1-2 years, the timber may also stain. Where there are lead or other metal flashings, care should be taken to avoid contact between the cedar and the metal. It is recommended that bituminous paint is applied as an effective barrier, or that GRP or other inert valleys or flashings are used.

When used as vertical cladding, to prevent cladding coming into direct contact with porous or wetted surfaces, Marley recommend use of either a damp proof membrane or flashing, or leaving a sufficient gap. In all cases, a gap of 150-200mm should be left below the bottom of the cladding and ground level.

The cedar should always be kept clear of any flashings below, by at least 10mm. The top edges should also be well protected.

Projecting roofs and overhangs – these provide protection to cladding and joinery products during service and result in the product being only partly exposed to the elements. This can result in uneven appearance.

Care must be taken with cedar as it has a high tannin content. Any runoff water may cause a build up of a brown coating on the surface of any metal detailing or flashings. Consideration must be given at the design stage to ensure water is drained away to the outside of the wall. These can be removed using oxalic acid.

Oxalic-acid based products – these will remove extractives bleed and iron stains but are ineffective against mildew. After application of these products, the timber should be thoroughly rinsed with clean water and completely dried before re-coating.

Note the manufacturer's health and safety instructions when using this product.

Important: Do not use wire brushes or wire wool for surface cleaning or preparation.

See the TRADA External Timber Cladding Guide for full details.

WASTE DISPOSAL

WRC should be treated as softwood for on site disposal, and can be disposed of with other site softwood waste. It is suggested that recycling opportunities are explored with a responsible waste management company.

Shingles installation video

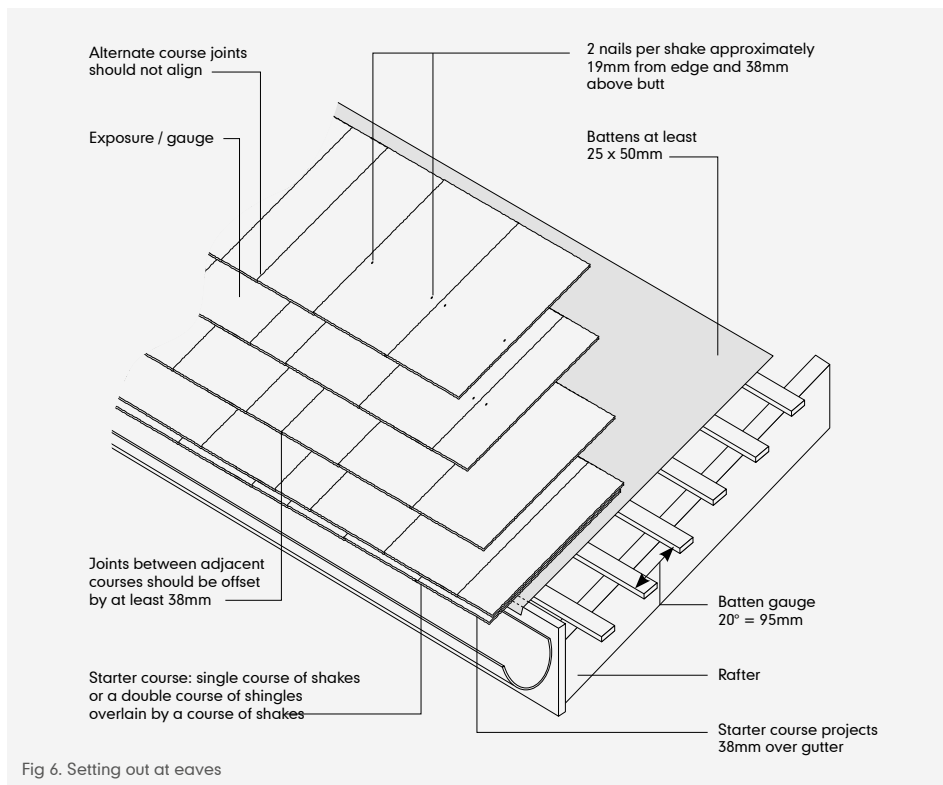


Watch a quick video at marley.co.uk/shingles or scan the QR code shown.

EAVES

A double course of shingles should be used as a starter course at the eaves.

The shingles should project at least 38mm beyond the eaves protection, or if a gutter is used, at least to the centre line of the gutter. They should extend 38mm over the verge or gable moulding/barge board.

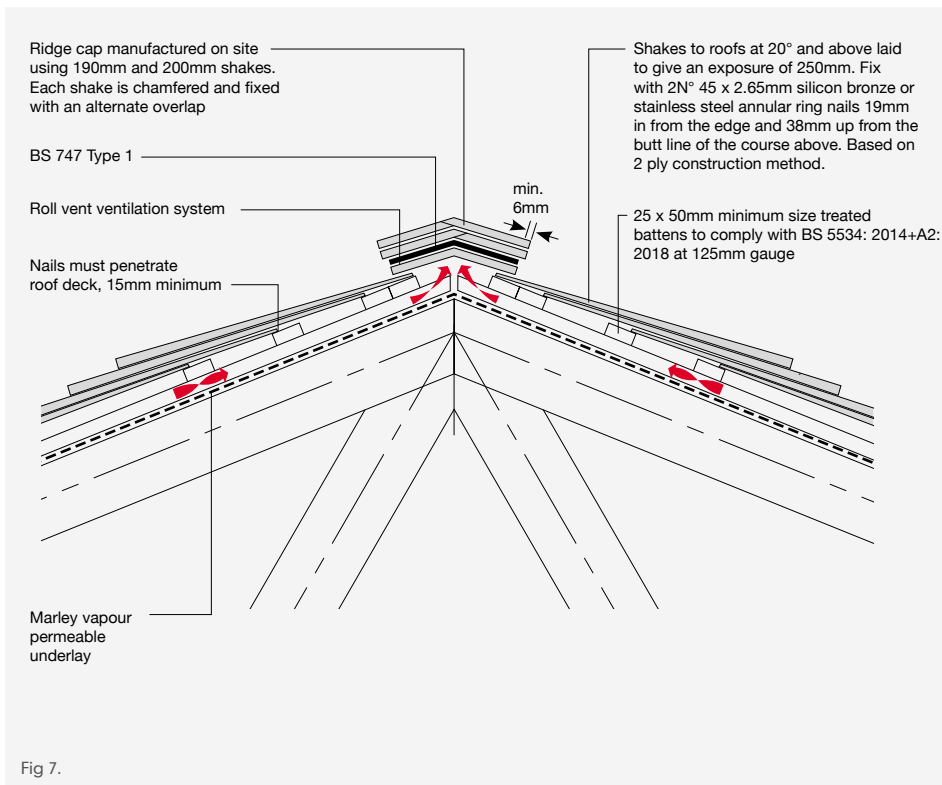


RIDGES

- 1 Trim shingles to size to create shortened ridge course. Lay along length of ridge, fixing each shingle twice.
- 2 Using pre-formed ridge units, lay along the ridge, ensuring a minimum overlap equal to the shingle gauge on the roof covering. Ridge units should be twice nailed, once either side of the ridge line.

HIPS AND RIDGES

To speed up and simplify installation, use pre-formed hips and ridges. When installing, start at each edge and work towards the middle.



HIPS AND VALLEYS

- 1 Hips may be formed on site by hand.
A piece of felt should be used beneath each capping piece. Ventilation should be at eaves level and a Roll Vent ridge ventilator is available from Marley.
- 2 Valleys should be code 5 lead (or as specified), should be at least 375mm in width and should be coated with patination oil or bituminous paint where contact is made with the shakes. The shakes should lap the lead by not less than 178mm on each side.

Flashings should be in accordance with good building practice and coated with patination oil or bituminous paint where contact is made with the shakes.

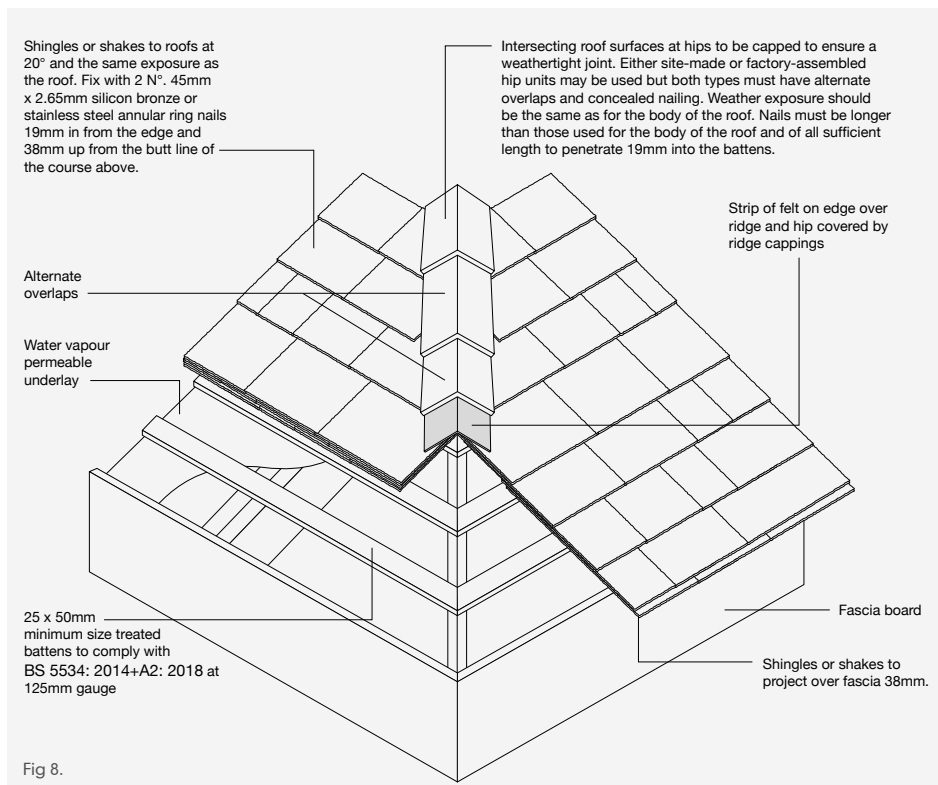


Fig 8.

VERTICAL APPLICATIONS

Shingles and shakes are applied in the same manner as for roofing, except there need only be a two ply (2 thicknesses of shingle) rather than 3 for roofing. They are nailed directly onto battens that can be fixed to masonry or studs. A breather paper is used behind the battens. Double coursing can give attractive shadow lines. Here, shingles are applied at an extended gauge but with two courses together.

Staggered butts can also be effective. Outside corners are laced with an alternate overlap and inside mitred with a flashing behind.



COVERAGE

SHINGLES

Coverage by application table (FiveX). All quantities are exact, an allowance should be made for waste and cutting.

Use	Max. gauge	Coverage per bundle	JB Red battens per m ²	Laid weight kg/m ²
Vertical cladding				
75-90°	175mm	3.20m ²	5.7 metres	5.0 kg
Roofs				
22-74°	125mm	2.28m ²	8.0 metres	7.0 kg
14- 21°	95mm	1.73m ²	10.5 metres	9.3 kg

HIP AND RIDGE CAPPINGS

Marley supply pre-formed hips and ridges – each bundle has 36 pieces, 18 right hand and 18 left hand mitres. These are fixed alternately at the same gauge as the roof.

Use	Max. gauge	Coverage per bundle	Silicon bronze nails
Roofs			
22-74°	125mm	4.5m	0.05kg per m
14- 21°	95mm	3.4m	0.065kg per m

Do not use ridge or hip cappings on slopes above 45°.

SHAKES

Shakes can be applied at a variety of gauges depending on their length and application. There are three main applications; two for roofing, dependent on the pitch and one for vertical cladding.

Type	Vertical	2 ply	3 ply
600mm and resawn gauge	209mm	250mm	190mm
	coverage	2.12m ²	1.83m ²
			1.39m ²
Battens	290mm	3.5m per m ²	4.0m per m ²
		5.3m per m ²	

N.B. These are exact areas and do not allow for cutting and wastage. For simple roofs allow approximately 5% but for complex roofs with significant amounts of cutting this can be up to 20%.

- 1 Double starter course – 1 bundle of shingles for every 9 linear metres (2 courses) or 1 bundle of shakes for every 7.5m
- 2 Valleys – 2 bundles for every 7.5 lin.m.
- 3 Hips and ridges – 2 bundles for every 7.5 lin.m (traditional method)

MORTAR BEDDED SECURITY FIXING KITS

121 SECURITY RIDGE FIXING KIT (code 54365)

124 SECURITY HIP FIXING KIT (code 54366)

▲
Dry fix and ventilation systems
For more details, see pages 127-236.



SECURITY RIDGE FIXING KIT

- 1 Felt and batten roof in the normal way, but before fixing the top course battens, secure a ridge batten bracket to each rafter centrally at apex using the nails supplied.

To establish the point to bend the legs of the ridge batten bracket, parallel to the rafters, a short length of top course batten should be temporarily nailed into place either side of the ridge, onto which a tile is laid. Position a ridge tile centrally onto the roof tiles and offer up a ridge

batten bracket against the rafter. The bracket should be bent at the best position to achieve a minimum 20mm screw penetration into the ridge tree (1 or 2 tiling battens) (Fig. 1). For Marley tiles and slates, refer to the batten setting height table and Fig. 7, page 123.

Place the ridge batten(s) along the length of the ridge between the perforated straps of the ridge batten brackets. Bend over the straps and nail securely to the ridge batten using the nails supplied. Joints in

the battens should be made over a bracket to ensure the ends are secured.

- 2 Lay the top edges of the roofing underlay (or additional length) loosely over the ridge batten and secure the top course battens such that the appropriate ridge tile headlap can be maintained (Fig. 2).
- 3 Finish tiling the roof up to the ridge (Fig. 3).

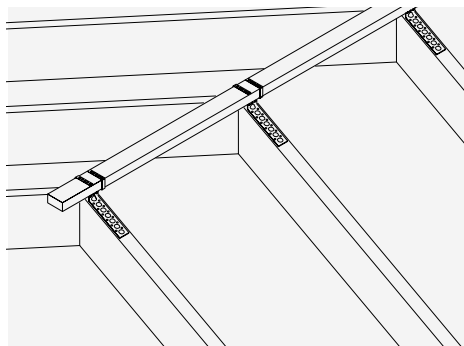


Fig. 1 – Secure ridge batten brackets and fix ridge batten

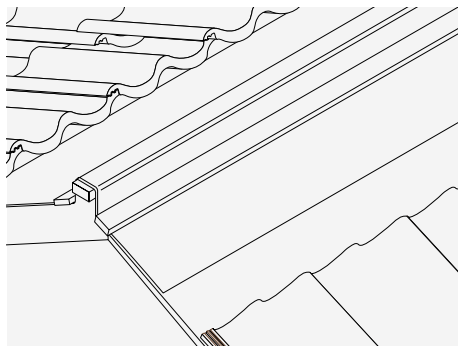


Fig. 2 – Lay underlay over ridge batten

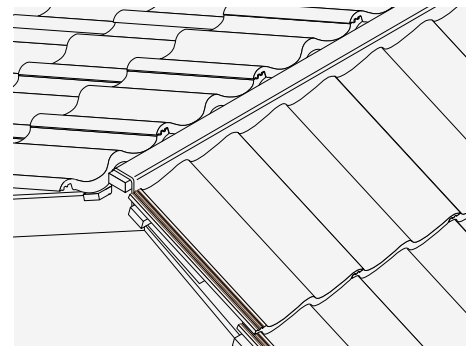


Fig. 3 – Tile to ridge

SECURITY RIDGE FIXING KIT

- 4 Edge bed the ridge tiles along the roof in the normal way using dentil slips where needed and solid bed the butt joints (Fig. 4).
- 5 To mechanically fix the ridge tiles push a plastic ridge clamp centrally between the ridge tiles into the wet mortar and secure in place by driving the 75mm stainless steel screw provided into the ridge batten. Do not over tighten (Fig. 5). When using clay ridge with interlocking pantiles, you will require a 100mm deep ridge screw pack (Code 70000, sold separately).
- 6 Repair any displaced mortar at the ridge tile joints.
- 7 End ridge tiles need to be secured by drilling a 6mm dia. hole through the ridge tile, 100mm from the open end, and driving one of the 75mm long s/steel screws supplied into the ridge batten (Fig. 6).

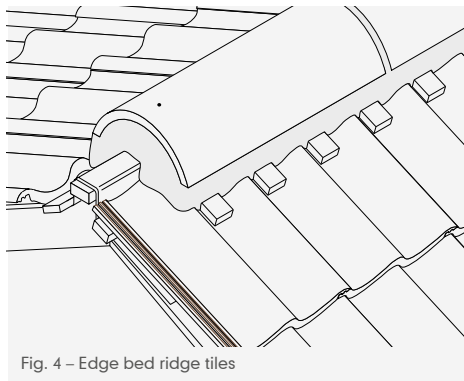


Fig. 4 – Edge bed ridge tiles

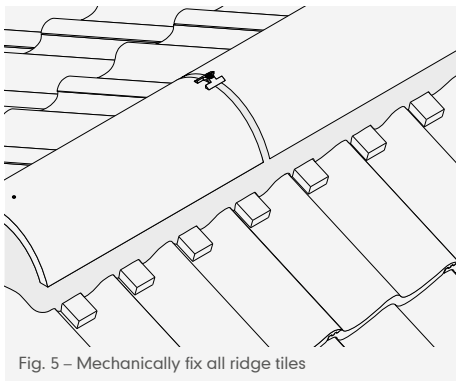


Fig. 5 – Mechanically fix all ridge tiles

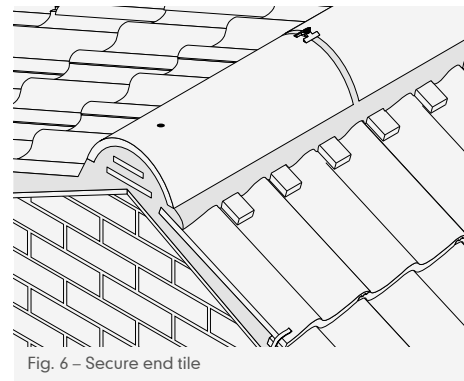


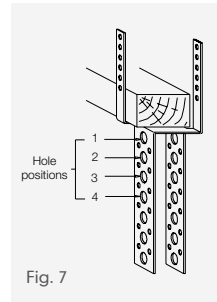
Fig. 6 – Secure end tile

SECURITY RIDGE FIXING KIT

BATTEN HEIGHT SETTING*

The first figure gives ridge batten height (in mm), figure in brackets gives hole positions at which ridge batten bracket legs are bent to fix to rafter

Tile	Ridge type	Roof pitch											
		12.5°	15°	17.5°	22.5°	25°	30°	35°	40°	45°	50°	55°	60°
Anglia	Segmental Ridge			50 (4)	50 (3)	50 (3)	50 (3)	50 (3)	50 (2)	50 (2)	50 (1)	50 (1)	50 (1)
Ashmore	Segmental Ridge				50 (1)	50 (1)	50 (1)	50 (1)	25 (1)	25 (1)			
	Modern Ridge				50 (1)	50 (1)	50 (1)	50 (1)	25 (1)	25 (1)			
Concrete Plain	Segmental Ridge							50 (2)	50 (1)	50 (1)	25 (1)	25 (1)	25 (1)
	Modern Ridge							50 (1)	50 (1)	25 (2)	25 (1)	25 (1)	
Double Roman	Segmental Ridge			50 (3)	50 (2)	50 (2)	50 (2)	50 (1)	50 (1)	25 (2)	25 (1)	25 (1)	
Eden	Segmental Ridge			50 (4)	50 (3)	50 (3)	50 (3)	50 (3)	50 (2)	50 (2)	50 (1)	50 (1)	50 (1)
Edgemere range	Segmental Ridge			50 (2)	50 (1)	50 (1)	50 (1)	50 (1)	25 (1)	25 (1)	25 (1)		
	Modern Ridge			50 (2)	50 (1)	50 (1)	50 (1)	50 (1)	25 (1)	25 (1)	25 (1)		
Fibre cement slates	Segmental Ridge		50 (1)	50 (1)	50 (1)	50 (1)	50 (1)	25 (1)	25 (1)				
	Modern Ridge		50 (1)	50 (1)	50 (1)	50 (1)	25 (1)	25 (1)					
Lincoln	Segmental Ridge			50 (4)	50 (3)	50 (3)	50 (3)	50 (3)	50 (2)	50 (2)	50 (1)	50 (1)	50 (1)
Ludlow Plus	Segmental Ridge				50 (2)	50 (2)	50 (1)	50 (1)	50 (1)	25 (1)	25 (1)		
	Modern Ridge				50 (2)	50 (2)	50 (1)	50 (1)	25 (1)	25 (1)			
Ludlow Major	Segmental Ridge			50 (2)	50 (2)	50 (2)	50 (2)	50 (1)	50 (1)	25 (1)	25 (1)	25 (1)	
	Modern Ridge			50 (2)	50 (2)	50 (2)	50 (1)	50 (1)	50 (1)	25 (1)	25 (1)		
Maxima	Segmental Ridge				50 (2)	50 (2)	50 (2)	50 (2)	50 (1)	50 (1)	25 (1)	25 (1)	25 (1)
Melodie	Segmental Ridge	50 (4)	50 (4)	50 (4)	50 (3)	50 (3)	50 (3)	50 (3)	50 (2)	50 (2)	50 (1)	50 (1)	50 (1)
Mendip/Wessex	Segmental Ridge		50 (3)	50 (3)	50 (3)	50 (3)	50 (2)	50 (2)	50 (1)	50 (1)	50 (1)	25 (1)	25 (1)
	Modern Ridge		50 (3)	50 (3)	50 (3)	50 (2)	50 (2)	50 (2)	50 (1)	50 (1)			
Modern/Duo Modern	Segmental Ridge			50 (2)	50 (2)	50 (2)	50 (1)	50 (1)	25 (1)	25 (1)	25 (1)		
	Modern Ridge			50 (2)	50 (1)	50 (1)	50 (1)	25 (2)	25 (1)	25 (1)			
Natural slates	Segmental Ridge		50 (1)	50 (1)	50 (1)	50 (1)	50 (1)	25 (1)	25 (1)				
	Modern Ridge		50 (1)	50 (1)	50 (1)	50 (1)	25 (1)	25 (1)					



*Please note that this table is a guide only - not site specific - based on the requirement to provide a minimum 15mm penetration as stated in BS5534. For further information please contact our technical team on the following 01283 722330.

SECURITY HIP FIXING KIT

- 1 Felt and batten roof in the normal way, mitring the tiling battens at the hip. Secure the mitred ends to the hip tree or continuous structural member.
- 2 Fix a galvanised hip iron, minimum 4mm thick, at the base of the hip tree with two 5mm diameter nails or suitable screws.
- 3 Tile roof leaving an 80mm gap between the raking cut tiles and slates laid adjacent to the hip tree. Ensure all raking cut tiles and slates are fully supported on the battens and if not, provide suitable packers to prevent tiles from rocking.
- 4 Ensure that all raking cut tiles and slates along the length of the hip are fully secured using the 'C' clips provided or secret cut tile clips (Code 43607, sold separately).
- 5 Fix hip batten brackets to the hip tree using 4 nails per bracket at approx. 550mm centres.
- 6 Position the first bracket immediately above the hip iron and the topmost bracket no more than 100mm from the hip/ridge apex. (When fixing Plain tiles the tiling battens will require trimming back from hip tree, locally, to provide space for fitting batten brackets. Support the free batten ends with noggins.)
- 7 Batten brackets can be fitted at a choice of 2 heights achieved by bending the bracket legs inwards along the appropriate diagonal line of holes (see page 126).

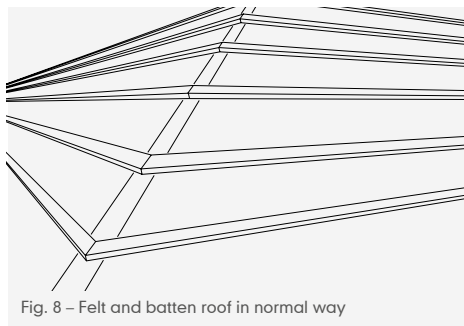


Fig. 8 – Felt and batten roof in normal way

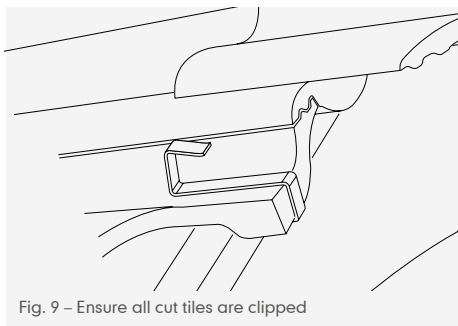


Fig. 9 – Ensure all cut tiles are clipped

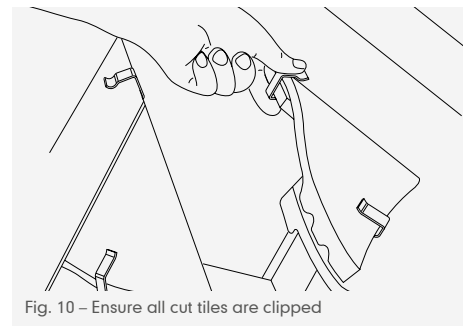


Fig. 10 – Ensure all cut tiles are clipped

SECURITY HIP FIXING KIT

- 8 Secure either one or two thicknesses of 50mm x 25mm tiling batten to the top of the batten brackets, parallel to the hip rafter, by folding over bracket arms and nailing through perforations into the battens.
- 9 Where 2 depths of batten are needed ensure they are secured to each other before locating into the batten brackets. Joints in the hip battens should be made over a batten bracket so both free ends can be secured.

Note: To establish whether one or two batten thicknesses are needed, place a hip tile in situ over the hip tree, at the highest point of the roof tiling, and assess the space remaining between the top of the batten bracket and underside of the hip tile. Install two battens if two fit without fouling the hip tile.

- 10 The capped end of the first hip tile needs to be placed against the hip iron, shaped to the line of the eaves and secured by drilling a 6mm dia. hole through the tile, 100mm from the open end, and driving one of the 75mm long stainless steel screws supplied into the hip batten. Fair fill the open end with mortar inset

with pieces of tile. Neatly point. When using clay hip with interlocking pantiles, you will require a 100mm deep ridge screw pack (Code 70000, sold separately).

- 11 Edge bed the hip tiles onto roof tiling and mechanically fix each as they are laid.
- 12 To mechanically fix the ridge tiles, drive one of the stainless steel screws supplied through the slot in a capped angle ridge clip and hole in the end of the tile into the hip batten. Do not over tighten.

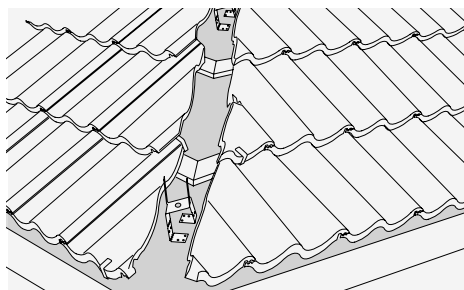


Fig. 11 – Fix batten brackets

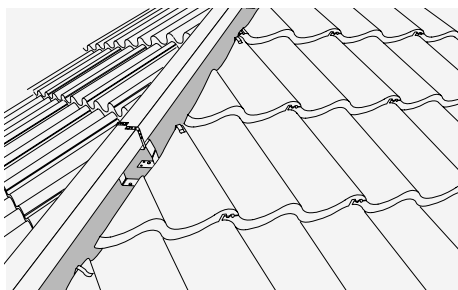


Fig. 12 – Fix hip batten

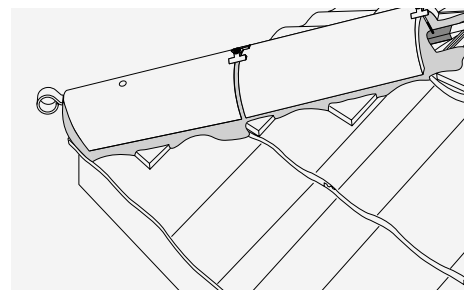


Fig. 13 – Mechanically fix hip tiles

SECURITY HIP FIXING KIT

- 13 Slide the capped end of the adjacent ridge tile into the open end of the clip and secure the opposite end with a clip and screw. Continue this procedure up the length of the hip.
- 14 The topmost hip tiles need to be secured by drilling a 6mm dia. hole through the hip tile, 100mm from the open end, and driving one of the 75mm long stainless steel screws supplied into the ridge batten.

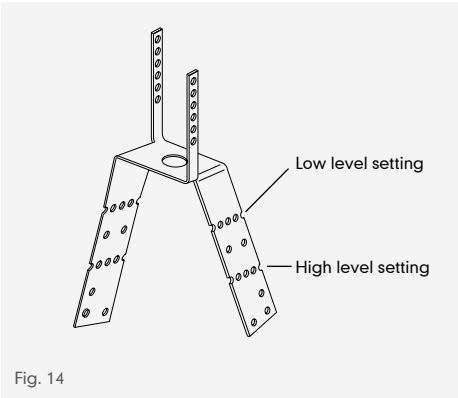


Fig. 14

BATTEN BRACKET SETTING TABLE FOR MARLEY ROOF TILES*

Low level batten bracket setting (bend along top row of diagonal holes)

Ashmore

Duo Edgemere (above 25° pitch)

Edgemere (above 25° pitch)

Ludlow Major (above 32.5° pitch)

Ludlow Plus

Plain

High level batten bracket setting (bend along bottom row of diagonal holes)

Anglia

Double Roman

Duo Edgemere (17.5° to 25° pitch)

Duo Modern

Eden

Edgemere (17.5° to 25° pitch)

Lincoln

Ludlow Major (22.5° to 32.5° pitch)

Maxima

Melodie

Mendip

Modern

Wessex

* Apply same settings for other manufacturers' equivalent tile profiles.

DRY FIX AND VENTILATION SYSTEMS

128 EAVES
VENTILATION
SYSTEMS



135 VERGE
SYSTEMS



170 HIP
SYSTEMS



182 VALLEY
SYSTEMS



188 RIDGE
SYSTEMS



207 ABUTMENT
SYSTEMS

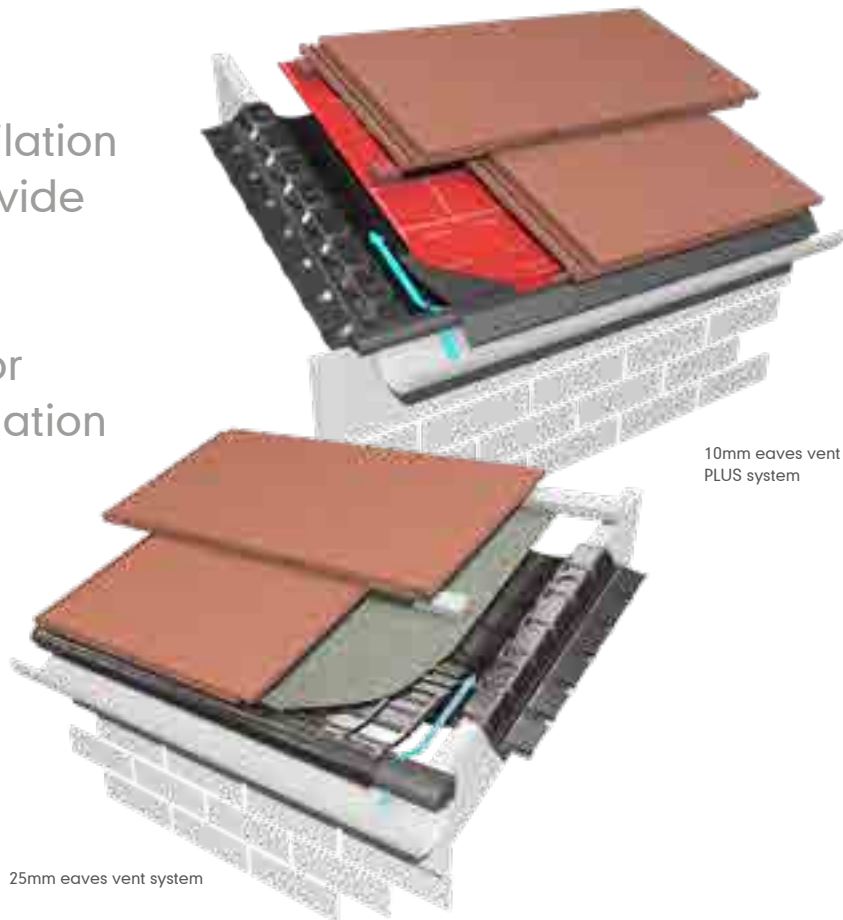


218 ROOF
SLOPE
SYSTEMS



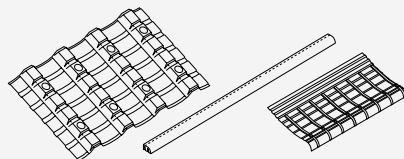
UNIVERSAL EAVES VENTS

Marley Universal Eaves Ventilation Systems are designed to provide continuous 10mm or 25mm ventilation at low level. The 10mm PLUS system is ideal for maintaining continuous ventilation for roofs with a low pitch and deep insulation.



UNIVERSAL EAVES VENTS

COMPONENTS

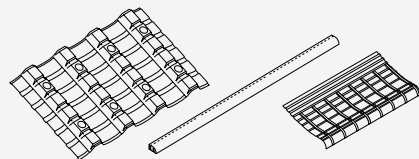


25mm eaves vent pack (6 metres)

(code 46351)

Packs contain:

- 6 No. over fascia ventilators (25mm),
- 1 No. continuous rafter roll (450mm depth),
- 10 No. felt support trays.

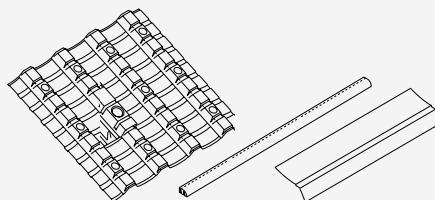


10mm eaves vent pack (6 metres)

(code 46350)

Packs contain:

- 6 No. over fascia ventilators (10mm),
- 1 No. continuous rafter roll (300mm depth),
- 10 No. felt support trays.

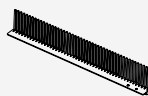


10mm eaves vent PLUS pack (6 metres)

(code 46354)

Packs contain:

- 6 No. over fascia ventilators (10mm),
- 1 No. continuous rafter roll (600mm depth),
- 7 No. felt support trays.



Comb filler strip pack
(6 x 1m)

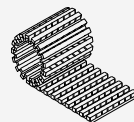
(code 30425)

For use with
profiled tiles



Gutter
spacers
(20 per pack)

(code 46353)



Continuous
rafter
roll pack
(2 x 6m)

(code 46323)

INSTALLATION

Before commencing work, check that fascia or tilting fillet is fixed to correct height for type of tile and rafter pitch being used, taking into account height of over fascia ventilator and comb filler strip (if required). For fascia height details, see table on page 132. Ensure that eaves course tiles are laid in the same plane.

Note: 25mm warm roof constructions (when ventilating the roof space). Dependent on gutter type, consideration should be given to maintaining a sufficient air path behind the gutter. This can be achieved using gutter spacers (available separately). Contact the Technical Advisory Service for further information.

- 1 Roll out continuous rafter roll over full length of eaves rafters so that wall plate is as close as possible to the centre of the roll.
- 2 Pull and adjust to correct rafter centres and twice nail, using 25mm long aluminium nails (Fig 1, page 130).

UNIVERSAL EAVES VENTS

Note: The continuous rafter roll fits rafters from 400mm – 600mm centres. Ensure that insulation extends over wall plate into eaves, to prevent cold bridging. To ensure insulation does not block the ventilation path, it may be necessary to:

- Use two courses of rafter roll (additional rafter roll can be purchased separately)

OR

- Use the 10mm Universal Eaves Vent PLUS system which comes with a 600mm wide rafter roll and robust underlay support tray as standard.

- 3 Place over fascia ventilator (OFV) on top of fascia board or tilting fillet with location stop hard up against front of board.

- 4 Nail to top of fascia or tilting fillet using 45mm x 3.35mm (10mm OFV) or 60mm x 3.35mm (25mm OFV) aluminium nails at every nail hole position (Fig 2).

Note: To assist with correct fascia height dimensions, allowance should be made for height of strip ventilator. For fascia height details, see page 132.

- 5 Place felt support trays over the over fascia vent strips and nail to rafters, using 45mm x 3.35mm (10mm OFV) or 60mm x 3.35mm (25mm OFV) nails. (Fig 3).
- 6 For 10mm and 25mm standard kits, the underlay support tray should be laid so

that the curved front edge dresses down over the fascia vent unit towards the gutter (each tray provides 600mm effective cover) (Fig 4).

For the 10mm Eaves Vent System PLUS, align the flat section of the extruded underlay support tray with the top of the over-fascia ventilator (Fig. 5, page 131).

- 7 Lay the underlay over the support tray stopped approx. 25mm from the top of the front edge of the felt support tray (Fig 6, page 131).

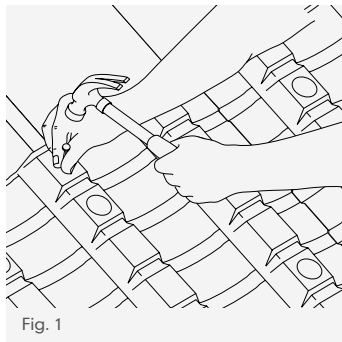


Fig. 1

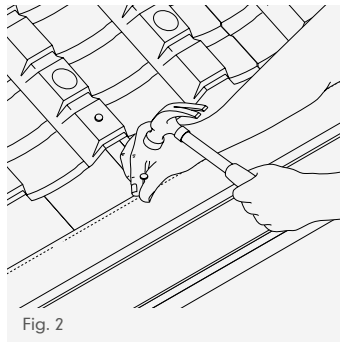


Fig. 2

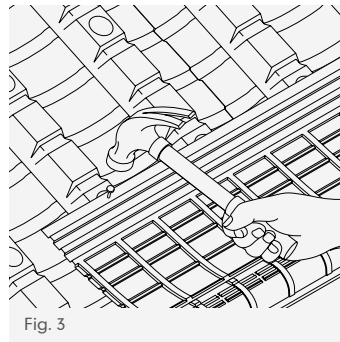


Fig. 3

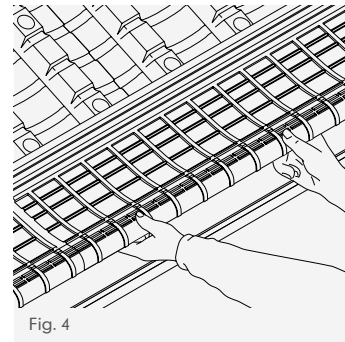


Fig. 4

UNIVERSAL EAVES VENTS

Underlays with integrated tape – such as those supplied by Marley – should be adhered to the support tray (Fig 7).

- 8 When profiled tiles are used, fit a comb eaves filler strip to prevent ingress of birds and vermin into roof void or batten space. Locate over the felt support tray such that the eaves comb is directly above the OFV strip.
- 9 Nail comb eaves filler strip to top of fascia board using 45mm x 3.35mm (10mm OFV) or 60mm x 3.35mm (25mm OFV) aluminium nails at every nail hole position (Fig 8).

- 10 Where eaves course tiles require fixing with clips, nail appropriate eaves clip through OFV strip and into fascia board, using 45mm x 3.35mm (10mm OFV) or 60mm x 3.35mm (25mm OFV) nails.

See page 132 for eaves fascia heights.

VENTILATING THE BATTEN CAVITY USING 25mm EAVES VENT SYSTEM

- 1 Install the roofing underlay over the rafters, ensuring sufficient drape into the gutter (Fig 9).

Notes: Timber fillets or plywood strip should be fitted at each rafter to provide support for the underlay into the gutter. Underlay support trays are not required for this type of construction. Use only suitable UV resistant membranes at the eaves.

- 2 Install counter battens on top of the underlay at each rafter. Roofing battens should then be installed as normal on top of the counter battens.
- 3 Install over fascia ventilator on top of fascia board, using 60mm x 3.35mm nails at every nail hole position.
- 4 When profiled tiles are used, install a comb filler strip.

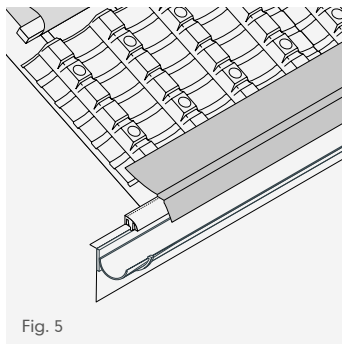


Fig. 5

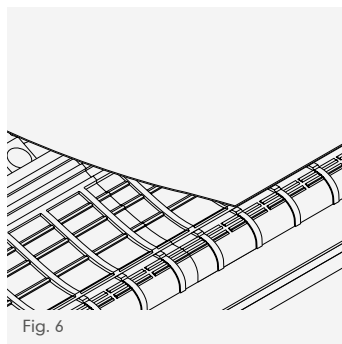


Fig. 6

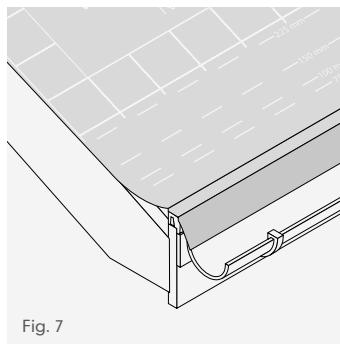


Fig. 7

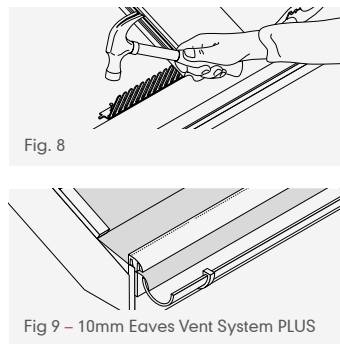


Fig. 8

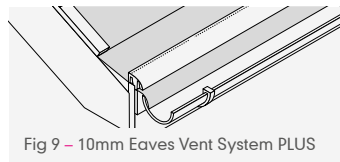


Fig 9 - 10mm Eaves Vent System PLUS

Nominal dimensions given are for guidance only and may need to be adjusted to suit site requirements by ensuring that the eaves course of tiles or slates is laid at the same pitch as the main body of the roof.

FASCIA HEIGHT SETTINGS (mm) FOR 10mm UNIVERSAL EAVES VENT SYSTEM / UNIVERSAL EAVES VENT SYSTEM PLUS (WITHOUT GUTTER SPACER)

Pitch	12.5°	15°	17.5°	20°	22.5°	25°	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	47.5°	50°	55°
Anglia	-	-	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
Ashmore	-	-	-	-	28	28	28	28	28	28	28	28	28	28	28	28	28
Double Roman	-	-	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Eden	-	-	-	-	61	61	61	61	61	61	61	61	64	64	64	64	64
Edgemere range	-	-	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
Natural & fibre cement slates	-	-	2	2	2	2	2	2	2	2	2	6	6	6	6	6	6
Ludlow Major	-	-	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
Ludlow Plus	-	-	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Lincoln	-	-	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
Maxima	-	-	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36
Melodie	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Mendip*	-	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
Modern/Duo Modern	-	-	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29
Plain	-	-	-	-	-	-	-	26	26	26	26	26	26	26	26	26	26
Wessex	-	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22

FASCIA HEIGHT SETTINGS (mm) FOR 25mm UNIVERSAL EAVES VENT SYSTEM (WITHOUT GUTTER SPACER)

Pitch	12.5°	15°	17.5°	20°	22.5°	25°	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	47.5°	50°	55°
Anglia	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ashmore	-	-	-	-	9	9	9	9	9	9	9	9	9	9	9	9	9
Double Roman	-	-	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
Eden	-	-	-	-	43	43	43	43	43	43	43	43	46	46	46	46	46
Edgemere range	-	-	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Natural & fibre cement slates	-	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	-25	-25	-25	-25	-25
Ludlow Major	-	-	2	2	2	2	2	2	2	2	2	2	-6	-6	-6	-6	-6
Ludlow Plus	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lincoln	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Maxima	-	-	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
Melodie	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
Mendip*	-	0	0	0	0	0	0	0	0	0	0	0	-10	-10	-10	-10	-10
Modern/Duo Modern	-	-	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Plain	-	-	-	-	-	-	-	8	8	8	8	8	8	8	8	8	8
Wessex	-	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8

FASCIA HEIGHT SETTINGS (mm) FOR 25mm UNIVERSAL EAVES VENT SYSTEM (WITH GUTTER SPACER)

Pitch	12.5°	15°	17.5°	20°	22.5°	25°	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	47.5°	50°	55°
Anglia	-	-	2	2	2	2	2	2	2	2	2	-8	-8	-8	-8	-8	-8
Ashmore	-	-	-	-	7	7	7	7	7	7	7	7	7	7	7	7	7
Double Roman	-	-	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
Eden	-	-	-	-	30	30	30	30	30	30	30	30	33	33	33	33	33
Edgemere range	-	-	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Natural & fibre cement slates	-	-15	-15	-15	-15	-15	-15	-15	-15	-15	-15	-29	-29	-29	-29	-29	-29
Ludlow Major	-	-	0	0	0	0	0	0	0	0	0	-8	-8	-8	-8	-8	-8
Ludlow Plus	-	-	2	2	2	2	2	2	2	2	2	-10	-10	-10	-10	-10	-10
Lincoln	-	-	2	2	2	2	2	2	2	2	2	-8	-8	-8	-8	-8	-8
Maxima	-	-	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
Melodie	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Mendip*	-	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-12	-12	-12	-12	-12	-12
Modern/Duo Modern	-	-	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
Plain	-	-	-	-	-	-	-	3	3	3	3	3	3	3	3	3	3
Wessex	-	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4

* For fascia height information regarding our Mendip 12.5° (can be installed down to 12.5°), please contact our technical team on : 01283 722330

UNIVERSAL EAVES CLIP

Marley Universal Eaves Clip can be used with most Marley large format concrete tiles* and large format clay tiles.



* Not for use with Ashmore or Wessex

UNIVERSAL EAVES CLIP

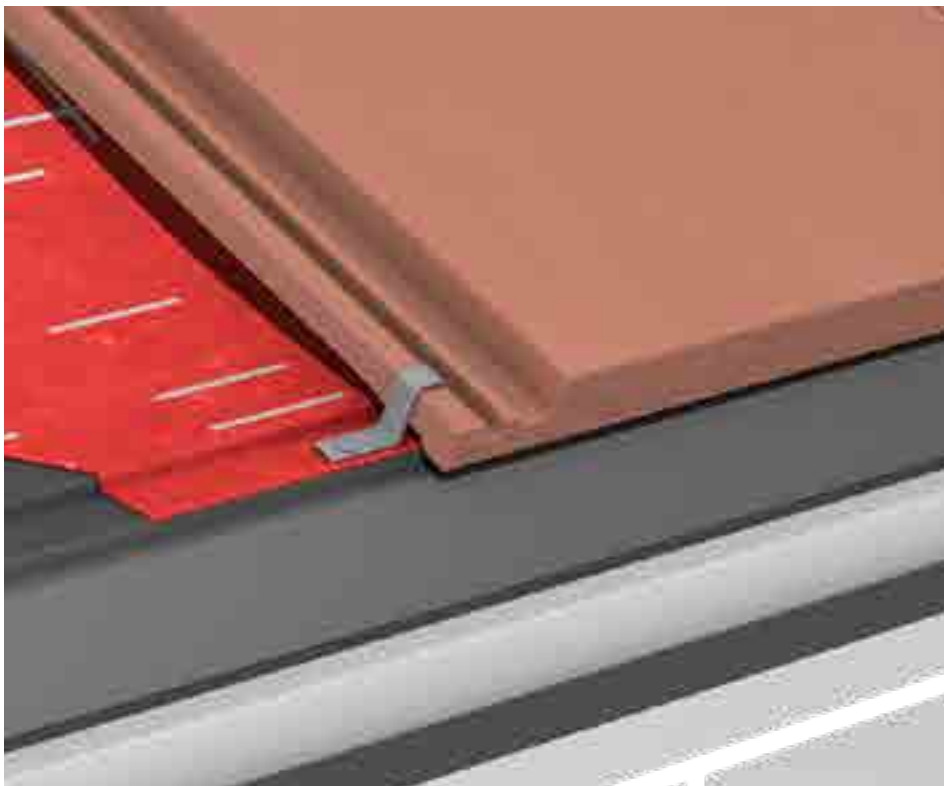
The variable height of the Universal Eaves Clip not only gives the possibility to adjust the height of the clip, but has also the flexibility to be adjusted to the specific roof pitch.

The Zial® (Zinc-Aluminium) coated clip has a flexible strip with the pre-punched fixing holes that can be easily bent to the required height during installation. The adjustable end rotates to the pitch of the roof and securely grips the underlock and sidelock of various roof tiles.

100 per box, nails sold separately, product code 30279, suitable to use with the following Marley concrete tiles and clay tiles.

COMPATIBILITY

- Anglia
- Double Roman
- Eden
- Edgemere range
- Lincoln
- Ludlow Plus and Ludlow Major
- Maxima
- Melodie
- Mendip and Mendip 12.5
- Modern and Duo Modern



UNIVERSAL DRY VERGE SYSTEM

Marley's Universal Dry Verge system has been designed to make verge detailing secure, BS 5534-compliant and elegantly simple*. The system is faster and easier to install, more weathertight, durable and secure than ever.

Note: Universal dry verge acts as a single mechanical fixing in accordance with BS 5534: 2014

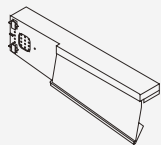
* Suitable for Lincoln, provided the headlap is no greater than 75mm



BS 8612
COMPLIANT

UNIVERSAL DRY VERGE SYSTEM

COMPONENTS



Universal dry
verge unit
(LH code 391,
RH code 392)



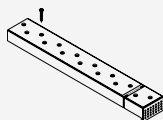
Segmental ridge
end cap
(code 395)



Modern ridge
end cap
(code 394)



Universal batten
end clip
(code 30214)



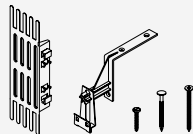
Dry verge
refurbishment
fixing kit
(code 53580)
24 No. batten
extension units



Segmental
mono-ridge
end cap and
wire hook
(LH code 427,
RH code 428)



Modern
mono-ridge
end cap and
wire hook
(LH code 408,
RH code 409)



Universal dry verge
starter unit
(code 53931)*

Kit contains:
2 No. Bracket assemblies
2 No. Plastic filler units
10 No. 30mm stainless
steel screws
4 No. 50mm stainless
steel screws

* Sold separately

INSTALLATION

- 1 Set out eaves course of roof tiles in normal manner, ensuring that, wherever possible, full tiles complete verge-overhang or that highest section of tile profile is cut to finish at edge.
- 2 Saw tiling battens off square to overhang bargeboard or brickwork by 50mm and nail (Fig. 1).
- 3 Position top course tiling battens to suit roof pitch and lap at a maximum of 85mm from roof apex.

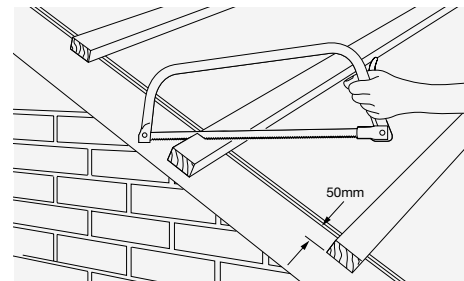


Fig. 1 – Position tiling battens with recommended overhang

UNIVERSAL DRY VERGE SYSTEM

4 Securing the starter bracket assembly:

- (a) Directly to fascia board where there is no requirement for an eaves ventilator strip:

Secure the starter bracket assembly directly onto the corner of the fascia using three of the 30mm screws provided (Fig. 2).

- (b) Directly into fascia strip ventilator:

Using two of the 50mm screws provided, secure the starter bracket assembly through the top edge of the fascia

ventilator strip and into the fascia board underneath. Be careful not to overtighten. Using one of the 30mm screws provided, secure the starter bracket through the side fixing hole (Fig. 3).

- (c) Directly into brickwork:

Using a pair of snips, or similar cutting device, remove the top of the starter bracket assembly at 90° corner, leaving side fixing and the metal spring fixing clip. Drill, plug and secure side assembly into brickwork using one of the 30mm screws provided (Fig. 4).

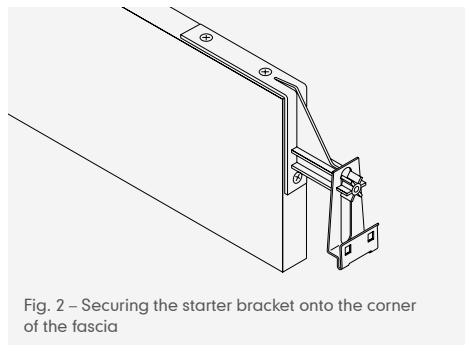


Fig. 2 – Securing the starter bracket onto the corner of the fascia

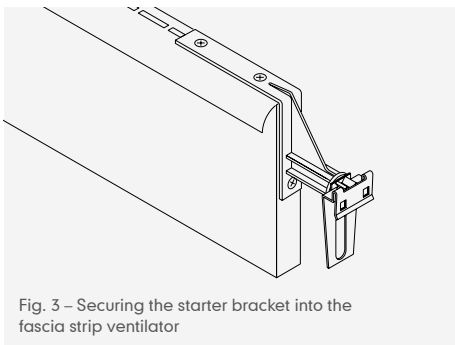


Fig. 3 – Securing the starter bracket into the fascia strip ventilator

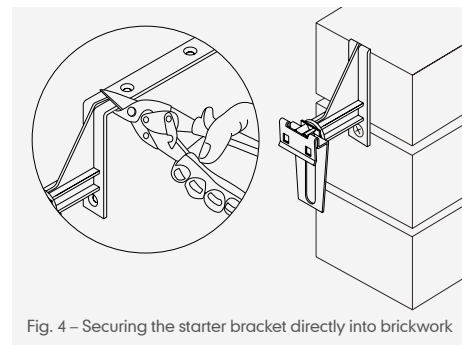


Fig. 4 – Securing the starter bracket directly into brickwork

Batten end clips

Offers quick, easy secure fixing of all dry verge units to the batten end.

UNIVERSAL DRY VERGE SYSTEM

- 5 Slide the plastic filler piece onto the internal rails of the dry verge. The filler piece prevents the ingress of birds and insects and will position onto the two middle rails. Engage and slide the filler piece until it clicks into place, approximately half way down the internal rails. Please note that the filler will only engage if it is the correct way round, as illustrated in Fig. 5.
- 6 Push the verge unit up so that the front flange meets flush with the leading edge of the tile (Fig. 6). Fix the verge unit to the tiling batten by means of mechanical
- engagement using the Marley batten end clip using the appropriate hole (nearest to the centre of the tiling batten).
- 7 Once the first unit is mechanically fixed into the batten end, secure the front edge of the dry verge with the metal spring clip by pushing it on until it cannot go any further.
- 8 A gentle hammer tap may be required to assist with this. The spring clip achieves a secure fix at one end by clamping (when engaged fully) to the front of the dry verge (Fig. 7).

The other end, when engaged fully will slot through the first and largest slot in the plastic filler unit.

- 9 When installing the dry verge in conjunction with medium format (15" x 9"), thin leading edge large format tiles or slates, or Lincoln interlocking pantiles, the leading flange should be bent out slightly to allow the verge to engage at a lower level and accommodate tiles with a thinner leading edge. The dry verge flange will need to be bent out as shown in Fig. 8.

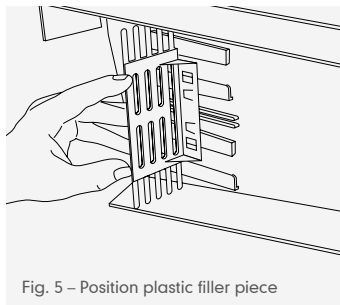


Fig. 5 – Position plastic filler piece

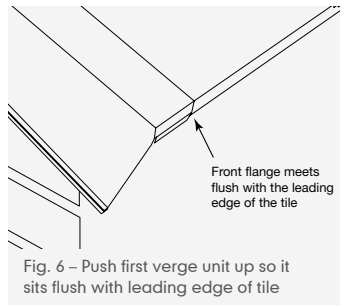


Fig. 6 – Push first verge unit up so it sits flush with leading edge of tile

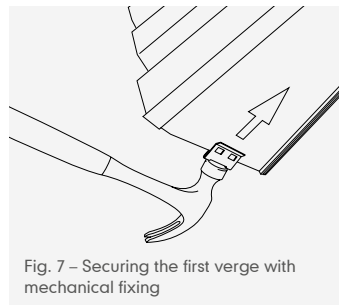


Fig. 7 – Securing the first verge with mechanical fixing

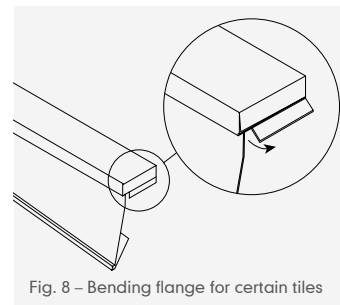


Fig. 8 – Bending flange for certain tiles

UNIVERSAL DRY VERGE SYSTEM

- 10 Successive dry verge units are interlocked together by sliding upwards against unit below, ensuring that lugs on outside of verge unit fit into internal locating slots (Fig. 9).

IMPORTANT: Verge units can be slid together at different height positions dependent on the roof tile profile and thickness of the leading edge.

Therefore it is important, when installing with medium format and thin leading edge tiles, that the leading flange is bent out to ensure that the verge drops down and engages with the tile below at the correct height.

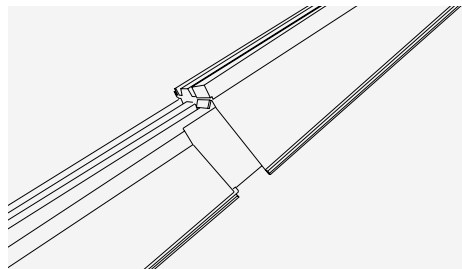


Fig. 9 – Slide verge units upwards

All verge tiles should be mechanically fixed in accordance with BS 5534 in addition to the use of the Universal dry verge units, i.e. by nailing, clipping or screwing as appropriate.

INSTALLATION WITH MEDIUM FORMAT INTERLOCKING PANTILES

- 11 When using medium format tiles, verge unit distortion can occur when the units are slid into position beneath the next tile course above. This distortion can be eliminated by making a small cut (Fig. 10) along the witness line, as shown.

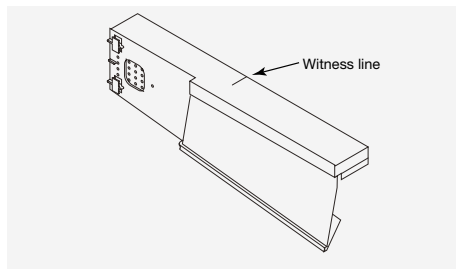


Fig. 10 – Location of witness line and cut being made

USE WITH DRY RIDGE SYSTEM BATTENS

- 12 At apex of roof, where battens are located, retain top course dry verge unit by securing a 30mm long screw (supplied in the fixing kit) into second series of holes in verge unit and locate it behind nib section of dry ridge batten (Fig. 11).
- 13 If required, trim flange of ridge and cap to fit between top course verge units (Fig. 12, page 140). Screw ridge end cap to end of dry ridge batten by locating 30mm stainless steel screws into end of circular beads on upper flange (Fig. 13, page 140).

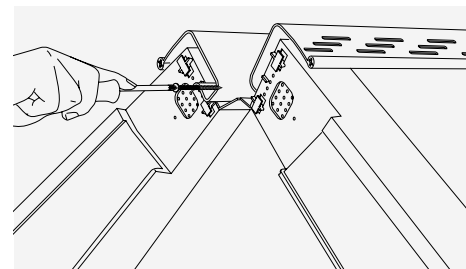


Fig. 11 – Screw verge units at apex of verge

UNIVERSAL DRY VERGE SYSTEM

USING BEDDED RIDGES AND RIDGEFAST DRY RIDGE

- 14 Screw ridge end cap through top course verge unit, to end of top course tiling batten. Locate 30mm stainless steel screw (provided) through lower, partly formed fixing holes (Fig. 13).
- 15 If required, trim flange of ridge end cap to fit between top course verge units. (Fig. 12). Top course verge unit is secured to end of top course tiling batten in normal manner.

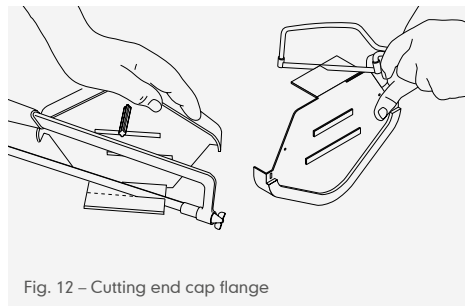


Fig. 12 – Cutting end cap flange

MONO-RIDGE END CAP FIXING WIRE

- 16 Construct dry verge units as before up to the roof apex.
- 17 Prior to fixing the gable end mono-ridge tile, push the security wire through the outside face of the mono-ridge tile (using the same fixing hole for screwing the mono-ridge tile to the wall) and bend through 90° (Fig. 14).
- 18 Feed the free end of the wire through the hole in the mono-ridge end cap.

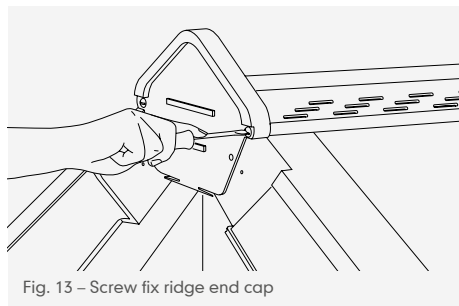


Fig. 13 – Screw fix ridge end cap

Push the end cap tightly against the mono-ridge tile and bend the wire protruding through the end cap downwards flush with the vertical face.

- 19 This assembly can now be placed into position, securing the mono-ridge tile with the stainless steel screws provided. The leading edge of the end cap is secured to the dry ridge batten section (or end of top tiling batten for mortar bedded ridges) using a 30mm screw (supplied in the fixing kit).

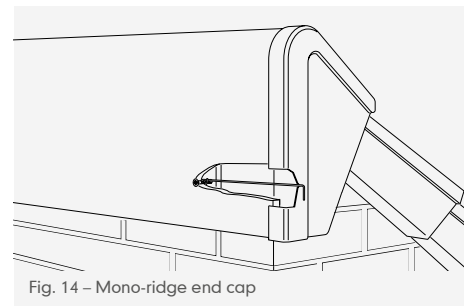
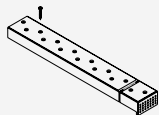


Fig. 14 – Mono-ridge end cap

UNIVERSAL DRY VERGE REFURBISHMENT KIT

COMPONENTS



Dry verge refurbishment fixing kit

(code 53580)

24 No. batten extension units
(suitable for 38mm x 25mm battens only)

The dry verge refurbishment kit facilitates the application of Universal dry verge systems to existing tiled roofs, where mortar bedded verges require replacement.

INSTALLATION

- 1 Rake out and carefully remove all mortar bedding at verge and ridge ends.
- 2 Remove one row of roof tiles and end ridge tiles immediately adjacent to verge.
- 3 Remove any mortar adhering to these tiles in the area where they engage on tiling batten and at headlap.
- 4 Remove undercloak (fibre cement strip or tile) and check that visible parts of tiling battens are in good condition.

- 5 Fit batten extension units onto the ends of tiling battens, using line moulded into top of unit as guide, so that they should overhang gable end by 45-50mm. Use 3 x No. 6 20mm stainless steel screws, ensuring 'ridge side' face is in contact with back face of batten.

Note: If any battens are damaged or rotten, cut back to good timber prior to fixing batten extension units. Where extensive damage has occurred, replace affected batten by a new section. Fixing flange of batten extension unit can be cut off to leave a continuous U-shaped channel and can be used as a bridging piece between new and old batten ends, avoiding the need to remove additional roof tiles.

- 6 Commence installation of the dry verge units in accordance with the fixing instructions (product codes 53930 or 53830), by aligning an appropriate hole in verge unit with a suitable hole in the end flange of batten extension unit.
- 7 Secure each verge unit using No. 6 x 20mm stainless steel screws.
- 8 Subsequent dry verge units can be fixed either during tiling operation or after tiles have been laid.
- 9 End ridge tiles should be re-bedded and secured by ridge end cap.

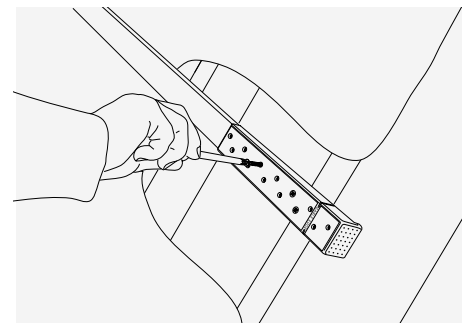


Fig. 19 – Fit extension using line moulded into unit top unit as guide

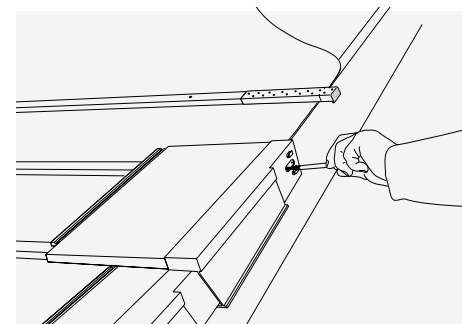


Fig. 20 – Commence installation of dry verge units in normal manner

EDGEMERE DRY VERGE SYSTEM

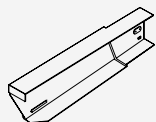
The Edgemere dry verge system provides a strong, weathertight and maintenance-free verge. Individual verge units retain the stepped appearance of a traditional mortar bedded verge while mechanically fixing the verge tiles.



BS 8612
COMPLIANT

EDGEMERE DRY VERGE SYSTEM

COMPONENTS



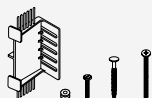
Edgemere dry verge unit

(LH code 381, RH code 382)



Edgemere ridge end cap

(code 384)



Edgemere dry verge starter unit*

(code 53830)

Kit contains:
2 No. 25mm x 8g stainless steel screws, 2 No. starter inserts, 2 No. 30mm x 8g stainless steel, pozidrive headed screws, 2 No. nylon spacers



Modern mono-ridge end cap and wire hook

(code 395)

INSTALLATION

- 1 Set out eaves course of roof tiles in normal manner, ensuring that wherever possible full tiles complete verge overhangs.
- 2 Saw tiling battens off square to overhang bargeboard or brickwork by 45mm and nail within a maximum of 500mm from ends (Fig. 1).
- 3 Position top course tiling battens to suit roof pitch and lap at a maximum of 85mm from roof apex.
- 4 Place first eaves roof tile in position overhanging the verge.
- 5 Slide starter insert into internal fixing channels of dry verge unit, and position assembly over eaves roof tile into position at which it will be fixed (Fig. 2, page 144).
- 6 Mark location of a suitable fixing position against gable wall or bargeboard through one of the slots in starter insert.
- 7 Remove roof tile and dry verge unit and slide out starter insert.

Batten end clips

Offers quick, easy secure fixing of all dry verge units to the batten end.

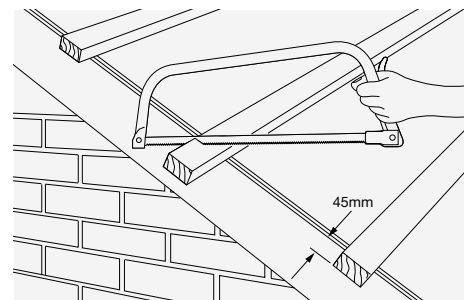


Fig. 1 – Position top course tiling battens

EDGEMERE DRY VERGE SYSTEM

- 8 Once removed, relocate starter insert in marked position and mechanically fix through spacer supplied, trapping between starter insert and gable wall or bargeboard (Fig. 3).

Note: Where brickwork is encountered, starter inserts should be drilled and plugged to ensure secure fixing.

For non-standard eaves/verge constructions, contact the Technical Advisory Service for advice on fixing.

- 9 Engage eaves course dry verge unit with lugs of the starter insert.
- 10 Fix the verge unit to the tiling batten by means of mechanical engagement using the Marley batten end clip using the appropriate hole (nearest to the centre of the tiling batten).

Note: Ensure that nail head fits flush into moulded recess around the nail hole and does not interfere with fitting of next verge unit.

- 11 Fix subsequent dry verge units as tiling proceeds, or in a single operation after completion of roof tiling. Ensure that verge tiles are fully inserted into verge units.

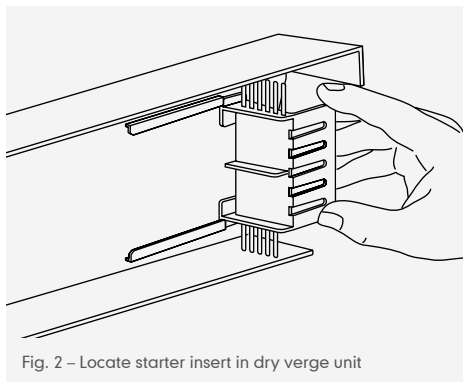


Fig. 2 – Locate starter insert in dry verge unit

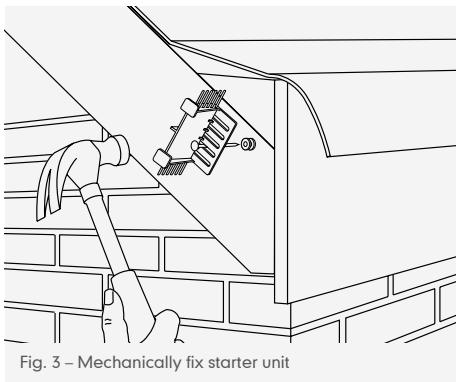


Fig. 3 – Mechanically fix starter unit

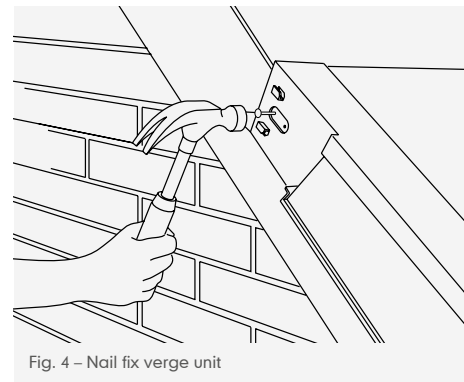


Fig. 4 – Nail fix verge unit

EDGEMERE DRY VERGE SYSTEM

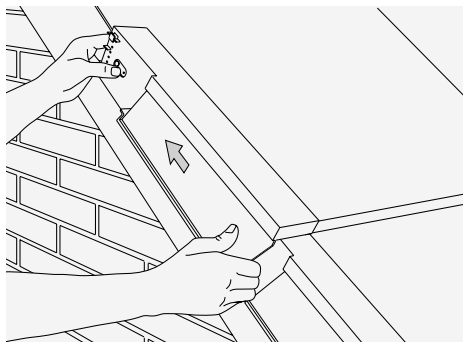


Fig. 5 – Slide up each unit to interlock

12 Successive dry verge units are interlocked together by sliding upwards against unit below, ensuring that lugs on outside of verge unit fit into internal locating slots (Fig. 5).

IMPORTANT: All verge tiles should be mechanically fixed in accordance with BS 5534 in addition to the use of the Edgemere dry verge units, i.e. by nailing, clipping or screwing as appropriate.

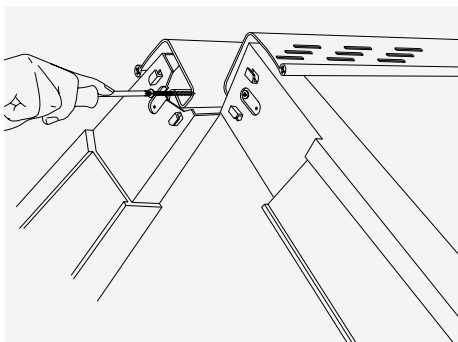


Fig. 6 – Screw verge units at apex of verge

USE WITH DRY RIDGE SYSTEM BATTENS

13 At apex of roof, where battens are located, retain top course dry verge unit by securing a 30mm long pozidrive head screw (supplied) into second series of holes in verge unit and locate it behind nib section of dry ridge batten (Fig. 6).

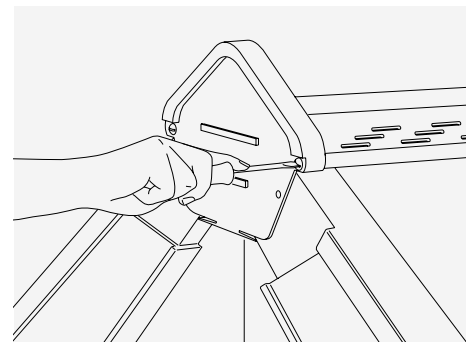


Fig. 7 – Screw fix ridge end cap

14 If required, trim flange of ridge end cap to fit between top course verge units (Fig. 9, page 146). Screw ridge end cap to end of dry ridge batten locating 25mm x 8g stainless steel screws into end of circular beads on upper flange (Fig. 7).

EDGEMERE DRY VERGE SYSTEM

USE WITH BEDDED RIDGES AND RIDGEFAST DRY RIDGE

- 15 Top course verge unit is secured to end of top course tiling batten in normal manner.
- 16 If required, trim flange of ridge end cap to fit between top course verge units (Fig. 9). Screw ridge end cap to top course verge unit, locating stainless steel screws through lower, partly formed fixing holes (Fig. 8).

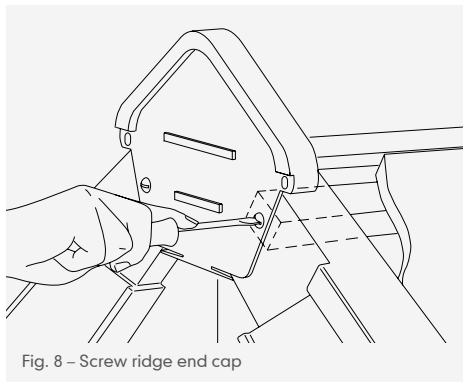


Fig. 8 – Screw ridge end cap

MONO-RIDGE END CAP FIXING WIRE

- 17 Construct dry verge units as before up to the roof apex.
- 18 Prior to fixing the gable end mono-ridge tile push the security wire through the outside face of the mono-ridge tile (using the same fixing hole for screwing the mono-ridge tile to the wall) and bend through 90° (Fig. 10).
- 19 Feed the free end of the wire through the hole in the mono-ridge end cap. Push the

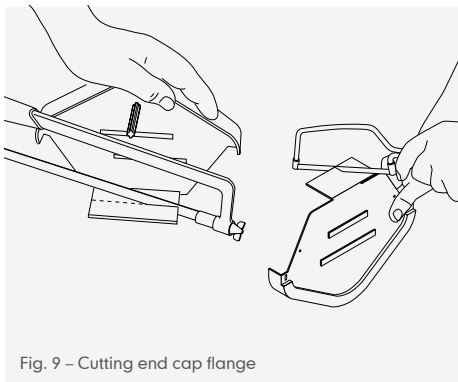


Fig. 9 – Cutting end cap flange

end cap tightly against the mono-ridge tile and bend the wire protruding through the end cap downwards flush with the vertical face.

- 20 This assembly can now be placed into position, securing the mono-ridge tile with the stainless steel screws provided. The leading edge of the end cap is secured to the dry ridge batten section (or end of top tiling batten for mortar bedded ridges) using a 25mm x 8g stainless steel screw supplied in the fixing kit.

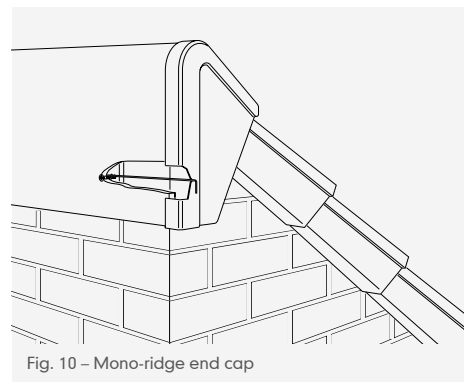


Fig. 10 – Mono-ridge end cap

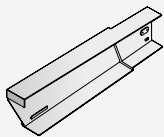
ASHMORE DRY VERGE SYSTEM

This dry verge provides a strong, mechanically fixed, weathertight verge that meets the requirements of BS 5534 and BS 8612. The system is fast and simple to install and offers a sleek, maintenance-free verge solution.



ASHMORE DRY VERGE SYSTEM

COMPONENTS



Ashmore dry verge unit

(LH Codes:
Grey 39611,
Brown 39613,
Terracotta 39614)

(RH Codes:
Grey 39711,
Brown 39713,
Terracotta 39714)



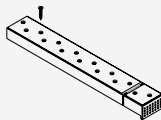
Ashmore segmental ridge end cap

(code 398*)



Batten end clip

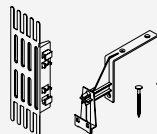
(code 30214)



Dry verge refurbishment fixing kit

(code 53580)

24 No. batten extension units



Ashmore dry verge starter unit

(code 39900)

Sold separately.
Kits contain:
2 No. Bracket assemblies,
2 No. Plastic filler units,
10 No. 30mm stainless steel screws,
4 No. 50mm stainless steel screws.

* Suffix with colour code 01 Grey, 03 Brown, 04 Terracotta

INSTALLATION

- 1 Set out eaves course of roof tiles in normal manner, ensuring that, wherever possible, full tiles complete verge-overhang or that highest section of tile profile is cut to finish at edge.
- 2 Saw tiling battens off square to overhang bargeboard or brickwork by 45mm and nail (Fig. 1).
- 3 Position top course tiling battens to suit roof pitch and lap at a maximum of 85mm from roof apex.

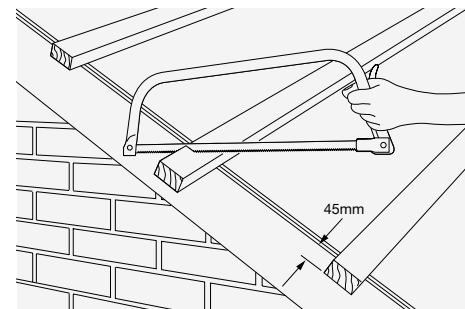


Fig. 1 – Position top course tiling battens

ASHMORE DRY VERGE SYSTEM

4 Securing the starter bracket assembly:

- (a) Directly to fascia board where there is no requirement for an eaves ventilator strip:

Secure the starter bracket assembly directly onto the corner of the fascia using three of the 30mm screws provided (Fig. 2).

- (b) Directly into fascia strip ventilator:

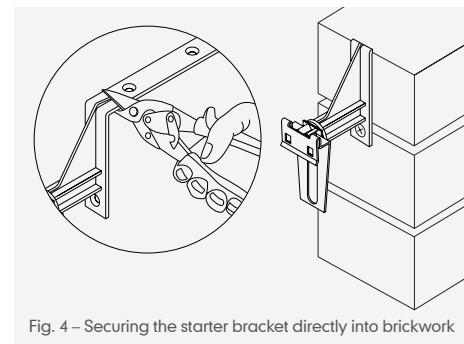
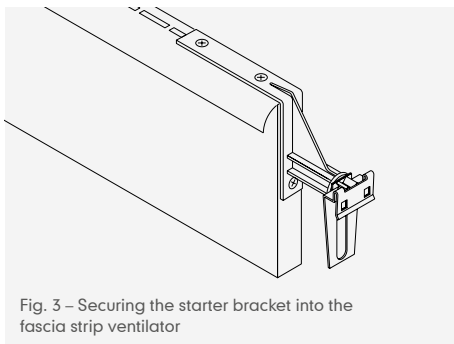
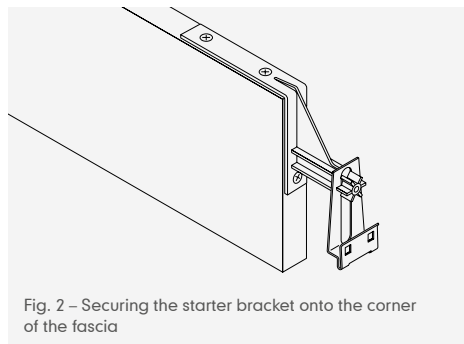
Using two of the 50mm screws provided, secure the starter bracket assembly through the top edge of the fascia

ventilator strip and into the fascia board underneath. Be careful not to overtighten. Using one of the 30mm screws provided, secure the starter bracket through the side fixing hole (Fig. 3).

- (c) Directly into brickwork:

Using a pair of snips, or similar cutting device, remove the top of the starter bracket assembly at 90° corner, leaving side fixing and the metal spring fixing clip. Drill, plug and secure side assembly into brickwork using one of the 30mm screws provided (Fig. 4).

- 5 Slide the plastic filler piece onto the internal rails of the dry verge. The filler piece prevents the ingress of birds and insects and will position onto the two middle rails. Engage and slide the filler piece until it clicks into place, approximately half way down the internal rails. Please note that the filler will only engage if it is the correct way round, as illustrated in Fig. 5 (page 150).



ASHMORE DRY VERGE SYSTEM

- 6 Push the verge unit up so the front flange meets flush with the leading edge of the tile (Fig. 6). Fix the verge unit to the tiling batten by means of mechanical engagement using the Marley batten end clip using the appropriate hole (nearest to the centre of the tiling batten).
- 7 Once the first unit is mechanically fixed into the batten-end, secure the front edge of the dry verge with the metal spring-clip by pushing it on until it cannot go any further.
- 8 A gentle hammer tap may be required to assist with this. The spring clip achieves a secure fix at one end by clamping (when engaged fully) to the front of the dry verge (Fig. 7).

The other end, when engaged fully will slot through the first and largest slot in the plastic filler unit.

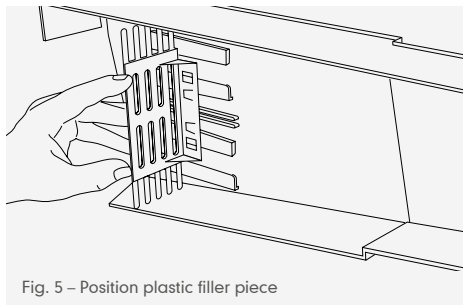


Fig. 5 – Position plastic filler piece

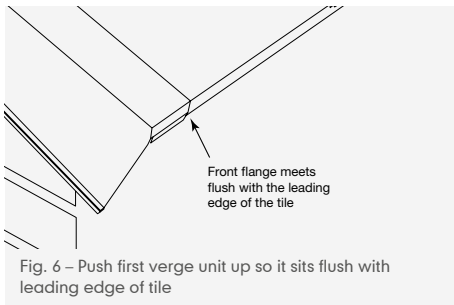


Fig. 6 – Push first verge unit up so it sits flush with leading edge of tile

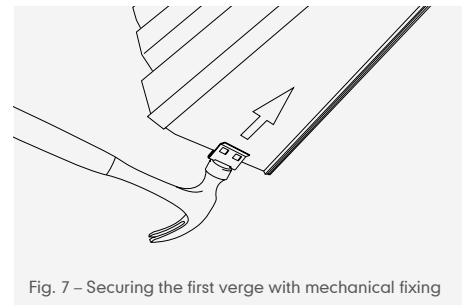


Fig. 7 – Securing the first verge with mechanical fixing

Batten end clips

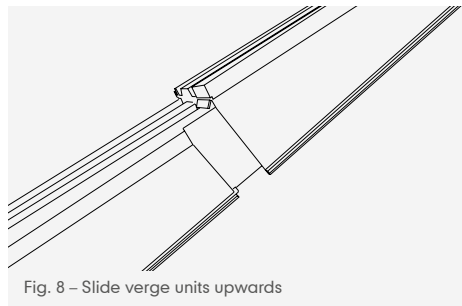
Offers quick, easy secure fixing of all dry verge units to the batten end.

ASHMORE DRY VERGE SYSTEM

- 9 Successive dry verge units are interlocked together by sliding upwards against unit below, ensuring that lugs on outside of verge unit fit into internal locating slots (Fig. 8).

IMPORTANT: Verge units can be slid together at different height positions dependent on the roof tile profile and thickness of the leading edge.

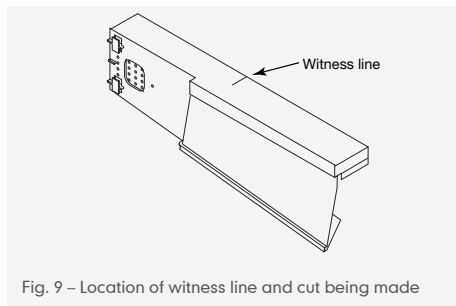
Therefore it is important, when installing with medium format and thin leading edge tiles, that the leading flange is bent out to ensure that the verge drops down and engages with the tile below at the correct height.



All verge tiles should be mechanically fixed in accordance with BS 5534 in addition to the use of the Universal dry verge units, i.e. by nailing, clipping or screwing as appropriate.

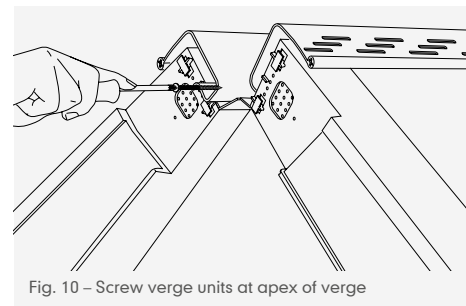
INSTALLATION WITH MEDIUM FORMAT INTERLOCKING PANTILES

- 10 When using medium format tiles, verge unit distortion can occur when the units are slid into position beneath the next tile course above. This distortion can be eliminated by making a small cut (Fig. 9) along the witness line, as shown.



USE WITH DRY RIDGE SYSTEM BATTENS

- 11 At apex of roof, where battens are located, retain top course dry verge unit by securing a 30mm long screw (supplied in the fixing kit) into second series of holes in verge unit and locate it behind nib section of dry ridge batten (Fig. 10).
- 12 If required, trim flange of ridge and cap to fit between top course verge units (Fig. 11, page 152). Screw ridge end cap to end of dry ridge batten by locating 30mm stainless steel screws into end of circular beads on upper flange (Fig. 12, page 152).



ASHMORE DRY VERGE SYSTEM

USING BEDDED RIDGES AND RIDGEFAST DRY RIDGE

- 13 Screw ridge end cap through top course verge unit, to end of top course tiling batten. Locate 30mm stainless steel screw (provided) through lower, partly formed fixing holes (Fig. 12).
- 14 If required, trim flange of ridge end cap to fit between top course verge units. (Fig. 11). Top course verge unit is secured to end of top course tiling batten in normal manner.

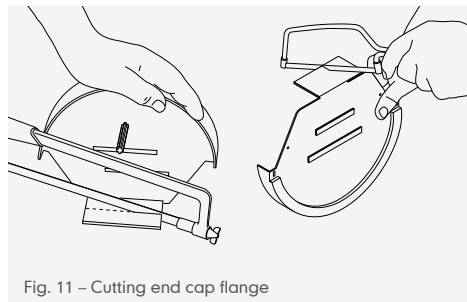


Fig. 11 – Cutting end cap flange

MONO-RIDGE END CAP FIXING WIRE

- 15 Construct dry verge units as before up to the roof apex.
- 16 Prior to fixing the gable end mono-ridge tile, push the security wire through the outside face of the mono-ridge tile (using the same fixing hole for screwing the mono-ridge tile to the wall) and bend through 90° (Fig. 13).
- 17 Feed the free end of the wire through the hole in the mono-ridge end cap. Push the

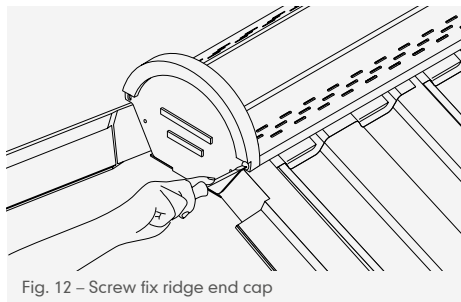


Fig. 12 – Screw fix ridge end cap

end cap tightly against the mono-ridge tile and bend the wire protruding through the end cap downwards flush with the vertical face.

- 18 This assembly can now be placed into position, securing the mono-ridge tile with the stainless steel screws provided. The leading edge of the end cap is secured to the dry ridge batten section (or end of top tiling batten for mortar bedded ridges) using a 30mm screw (supplied in the fixing kit).

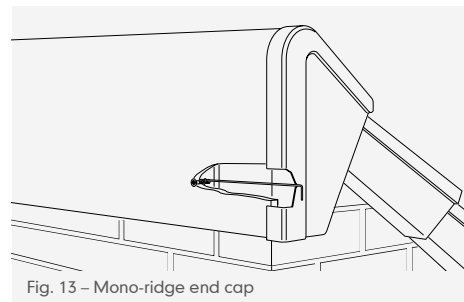


Fig. 13 – Mono-ridge end cap

CONTINUOUS DRY VERGE

For use with Ashmore and Edgemere interlocking tiles, concrete plain tiles, and clay plain tiles. For fibre cement slates, please see pages 156-157.

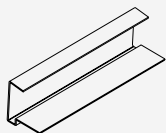


Shown with plain tiles



Shown with fibre cement slates
(page 156)

COMPONENTS

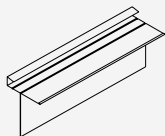


Universal plain
tile, Ashmore and
Edgemere
dry verge (3m)
(code 38501)



Plain tile dry verge
fixing kit
(code 38510)

Kit contains:
1 No. Connector unit,
15 No. 35mm x 2.65mm
ARS stainless steel nails,
2 No. 25mm x 10g
stainless steel screws



Fibre cement slates
verge trim (3m)
(code MA42206)

CONTINUOUS DRY VERGE

INSTALLATION

- 1 Ensure the gable end is reasonably level and free from projections. The roofing underlay and tiling battens should be laid across the cavity/gable ladder and the battens finished flush with the outer wall or outer edge of the bargeboard (Fig. 10). The verge extrusion is fitted prior to tiling.
- 2 Square cut the ends of the verge extrusion to the desired length. A connector unit is available to join lengths of extrusion. At the eaves, cut away a length of horizontal flange to accommodate the tilting fillet or support tray (Fig. 11).
- 3 At the ridge apex, allow a 10mm expansion gap at the mitred joint between the verge extrusions. Cut away the top flange and 20mm depth of the side wall (Fig. 12) to accommodate the ridge tile (and dry ridge batten section, if appropriate).
- 4 The horizontal flange of the extrusion is pushed between the top of the wall (or gable ladder) and tiling battens along its whole length. Ensure the bottom end lines up with the leading edge of the eaves tiling course (Fig. 12).
- 5 Where necessary, a connector unit is fitted at joints between extrusions (Fig. 13).

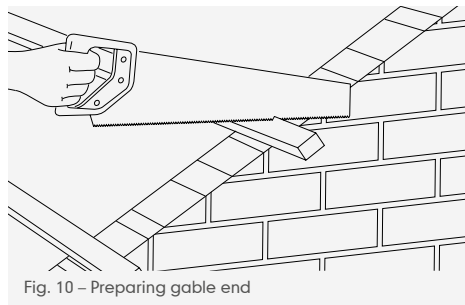


Fig. 10 – Preparing gable end

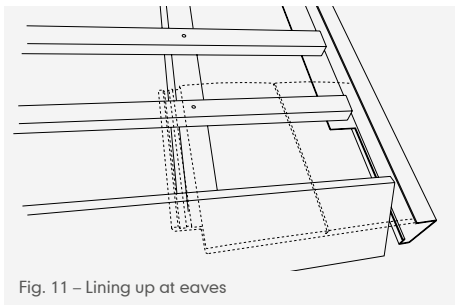


Fig. 11 – Lining up at eaves

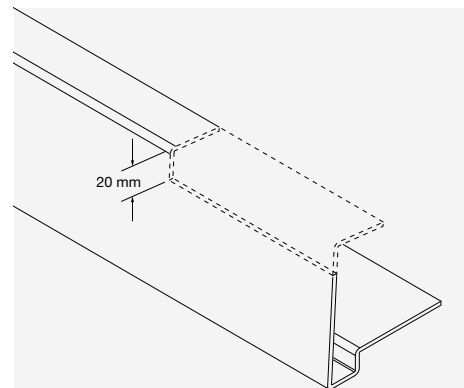


Fig. 12 – Cut away section at ridge

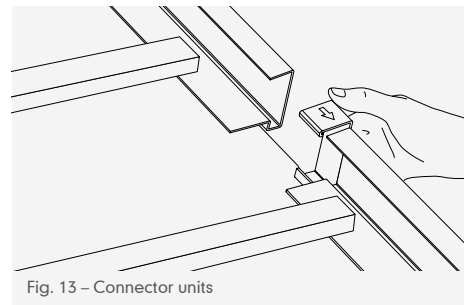


Fig. 13 – Connector units

CONTINUOUS DRY VERGE

- 6 Secure the verge extrusion by driving the annular ring shank nails provided through each tiling batten (40mm from the end) into the extrusion (Fig. 14). Alternatively, drill out, then plug and screw to top of gable (if brickwork).
- 7 Lay tiles in the usual manner, ensuring the verge tiles are fully inserted into the verge extrusion and mechanically fixed (Fig. 15).
- 2 When using a ridge end cap with either the Marley dry ridge or RidgeFast systems, the bottom flange of the cap will need to be reduced to 25mm overall depth (Fig. 17).

Fix the ridge end cap using the 2 No. 25mm x 10g stainless steel screws provided in the fixing kit.
- 3 When using a bedded ridge and/or block end ridge tile, the verge extrusion will need to be cut away to accommodate the internal rib of the tile and provide a close fit to the outer face of the verge extrusion (Fig. 18).

FIXING AT RIDGE

- 1 When used with the Marley dry ridge system, low profile batten sections should extend 15mm beyond the outer wall or outer edge of the bargeboard (Fig. 16).

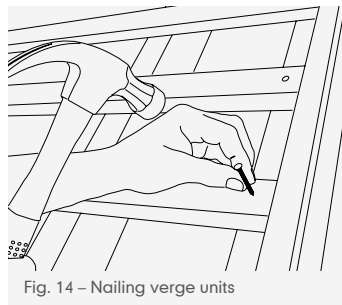


Fig. 14 – Nailing verge units

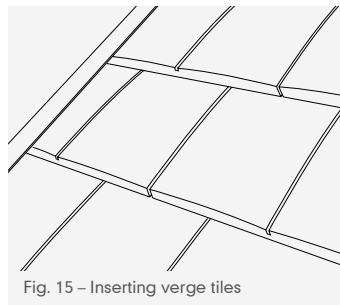


Fig. 15 – Inserting verge tiles

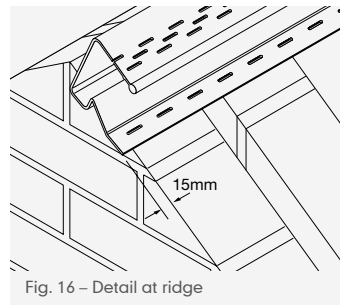


Fig. 16 – Detail at ridge

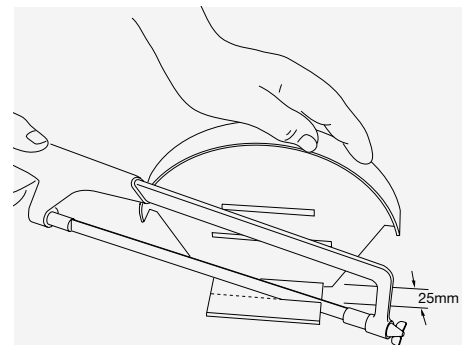


Fig. 17 – Trimming the ridge cap

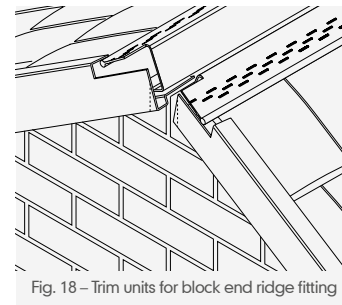


Fig. 18 – Trim units for block end ridge fitting

CONTINUOUS DRY VERGE FOR SLATES

- 1 Underlay and battens should be laid and cut flush with outer edge of gable wall or bargeboard.
- 2 Position the verge trim on top of the battens and align the vertical leg against the batten ends.
- 3 Position the first length to overhang at the eaves into the gutter, by the required amount, and remove part of the down leg to allow fitting of the gutter (Fig. 19).
- 4 Nail the horizontal flange of the trim to each batten using a 25mm long galvanised clout nail ensuring the batten ends are nailed to the substructure.
- 5 When joining adjacent lengths of verge trim, ensure the lower length of trim is nailed securely to each batten (joints at the centre of a batten) (Fig. 20).
- 6 Cut away a rectangle 15mm in from the end of the trim beneath the drip bead (Fig. 21).
- 7 Trim the inside corner of the trim. Make a small triangular cut into the top lap of the trim and press down slightly (Fig. 22). This will allow the upper length to push inside the lower length.

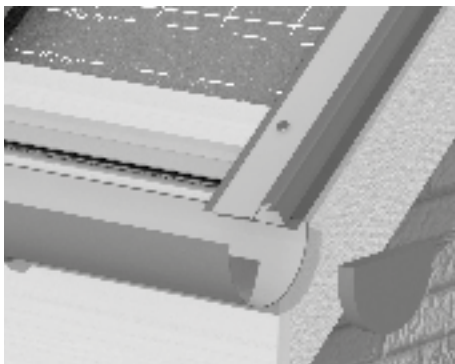


Fig. 19 – Nail each length of trim to batten

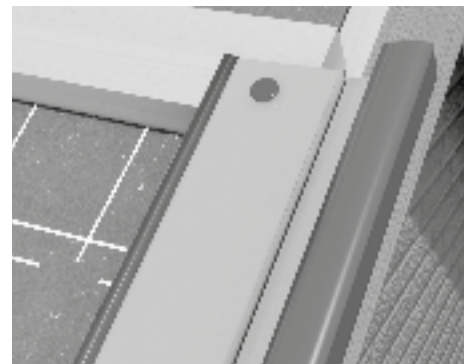


Fig. 20 – Cut 15mm in from end of trim

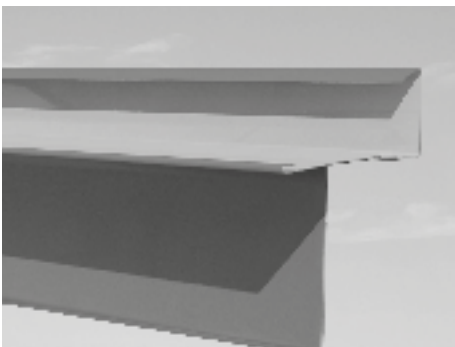


Fig. 21 – Make triangular cut

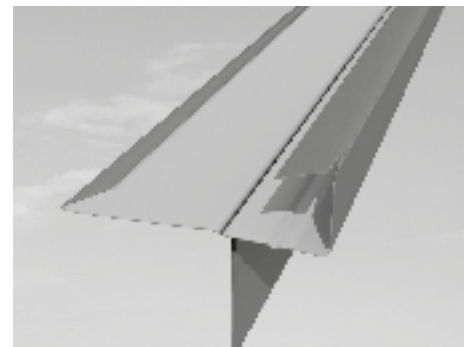


Fig. 22 – Insert upslope trim into lower trim section

CONTINUOUS DRY VERGE FOR SLATES

- 8 Ensure the two down legs line up. Firmly push into place and nail into position (Fig. 23). If the upper leg is to form part of a ridge joint, carry out the apex cutting process prior to nailing to battens.
- 9 Slide the verge slates under the lip of the verge. Trim and nail in accordance with the recommended fixing specification.

Please note that sheet metal cutters should always be used to cut the trim. Use protective gloves when handling to avoid injury from sharp edges.

INSTALLATION AT RIDGE APEX

- 1 Prior to fixing, offer the left hand trim up to the apex of the ridge and plumb cut the depth of the trim to the desired angle dependent on pitch of the roof (Fig. 24).
- 2 Cut away a slot 30mm x 5mm behind the down leg (Fig. 25).
- 3 Nail the left hand trim into place (Fig. 26).
- 4 Carefully interlock the right hand length of trim into the left hand length (Fig. 27). The down leg of the right hand length should slot behind the left hand length. Nail the right hand length into position.

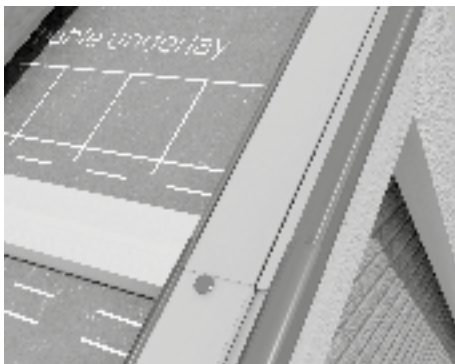


Fig. 23

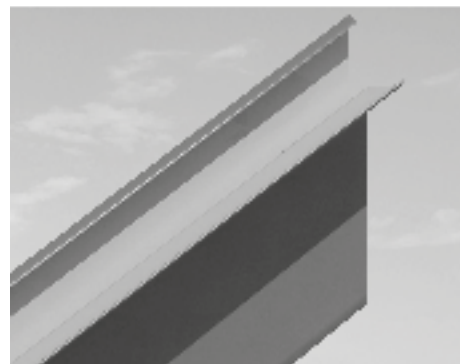


Fig. 24 – Cut trim to correct angle



Fig. 25 – Cut slot



Fig. 26 – Nail left hand trim in place



Fig. 27 – Interlock left and right hand trims

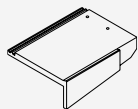
INTERLOCKING TILE CLOAK VERGE SYSTEM

Marley cloak verge systems eliminate the need for mortar bedding. They provide a mechanically fixed, durable and maintenance-free finish to the roof verge.



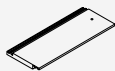
INTERLOCKING TILE CLOAK VERGE SYSTEM

COMPONENTS



Modern cloak
verge tile

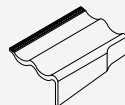
(RH code 370, LH code 371)



Modern half tile
(code 372)

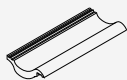


Fixing kit for Modern
(28 No. fixings, code 53730)



Mendip cloak
verge tile

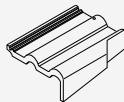
(RH code 246, LH code 245)



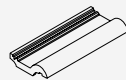
Mendip half tile
(code 247)



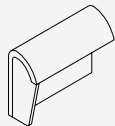
Fixing kit for Mendip
and Double Roman
(28 No. fixings, code 54252)



Double Roman
cloak verge tile
(RH code 266, LH code 265)

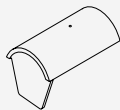


Double Roman
half tile
(code 102)

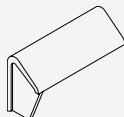


Segmental
mono-ridge block
end ridge

(RH code 190, LH code 189)

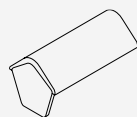


Segmental block
end ridge
(code 191)



Modern
mono-ridge block
end ridge

(RH code 375, LH code 376)



Modern block
end ridge
(code 374)

INSTALLATION

- 1 Install roof underlay and tiling battens in normal manner, allow underlay to overhang verge by approx. 50mm.

Note: Maximum gauge 345mm (75mm lap), minimum gauge 305mm (115mm lap).

- 2 Saw ends of tiling battens off flush with gable wall or bargeboard and nail within a maximum of 500mm from end (Fig. 1).
- 3 For rafter pitches over 30°, where it is not possible to gain a firm fixing for ends of tiling battens, use a double course of battens across a complete rafter span (two fixings minimum), to increase rigidity of system (Fig. 2).

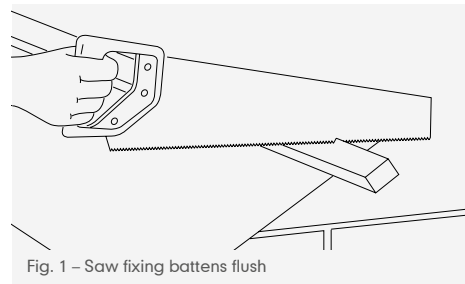


Fig. 1 – Saw fixing battens flush

INTERLOCKING TILE CLOAK VERGE SYSTEM

- 4 If, during setting out, vertical leg of cloak verge unit cannot be closely fitted with brickwork or bargeboard, fix fibre cement undercloak strip beneath tiling battens, to prevent ingress of birds and vermin (Fig. 2).

Note: Maximum overhang using this method must not exceed 50mm, measured to outside of verge unit.

- 5 Position cloak verge unit at eaves and mark position where embedded PVC channel on underside rests on fascia or tilting fillet.

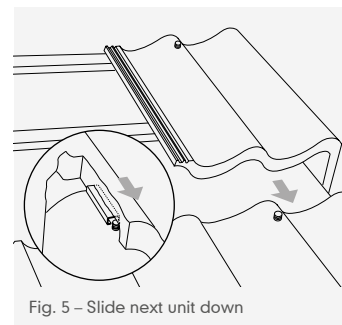
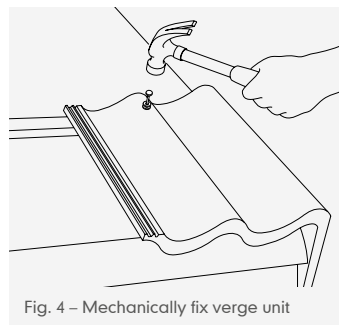
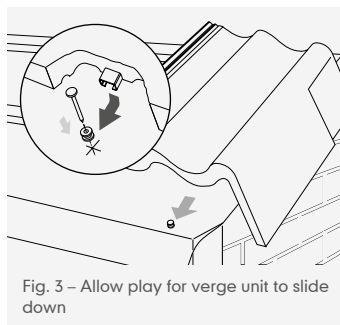
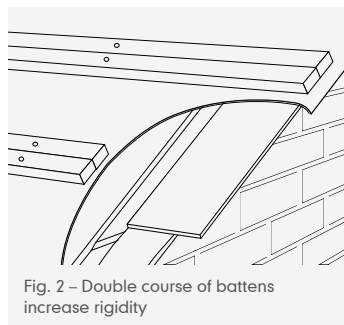
- 6 Remove cloak verge unit and nail comb filler, or cut filler as applicable to top of fascia (excluding Modern).
- 7 Drive the stainless steel a.r.s. nail with nylon spacer unit (supplied in Fixing Kit) into top of fascia or tilting fillet to coincide with position of embedded PVC channel.
- 8 Ensure nail and spacer assembly is fitted to align with the pitch of roof.
- 9 Leave a small amount of play to allow cloak verge unit to slide down and engage spacer unit (Fig. 3).

- 10 Ensure nibs of cloak verge unit are correctly located against top edge of tiling batten.

- 11 Drive aluminium nail with spacer unit assembly, through cloak verge nail hole, leaving a degree of free play (Fig. 4).

- 12 Lay next cloak verge unit in a similar manner, by sliding it down so that embedded PVC channel locates over nylon spacer unit and tile nibs are in contact with tiling battens (Fig. 5).

Note: Nail holes in cloak verge half tiles should be sealed with mastic, when used on roof pitches below 25° and should be clip fixed where required.



INTERLOCKING TILE CLOAK VERGE SYSTEM

13 Install remaining cloak verge units in a similar manner and tile roof in normal way.

14 Fit half tiles, if required, either next to cloak tiles or elsewhere in tiling, ensuring that bond is maintained throughout. Fix by either nail and/or clip fixing.

Lay Modern cloak verge half tiles in alternate courses adjacent to cloak verge units to maintain broken bond of roof tiles (Fig. 6).

15 When installing cloak verge tiles with Marley dry ridge system for both left hand and right hand top course cloak verge tiles, cut away embedded PVC channel at rear for a distance of 20mm. This

allows nylon spacer to cloak verge tile below to locate into the channel.

16 Push cloak verge tile upwards and fit into dry ridge batten section (Fig. 7).

17 Install Segmental or Modern block end ridge by either bedding in mortar, or mechanically fixing using Marley Dry Ridge System or Universal RidgeFast. Mono-ridge block end tiles are available for mono-pitch roofs (Figs. 8 and 9).

Note: Segmental mono-ridge tiles should be used with Marley Dry Mono-ridge system. When using the Marley Dry Ridge System, the block end ridge tile should be fixed using a supplementary ridge union fitted over the top of the ridge tile near to the end of the ridge.

18 When using the Marley Dry Ridge System, the block end ridge tile should be fixed using a supplementary ridge union fitted over the top of the ridge tile near to the end of the ridge.

A maximum 5mm cut should be made in the base of the ridge tile to accommodate the 'claw' of the ridge union. The lugs on the underside of the union should be broken off.

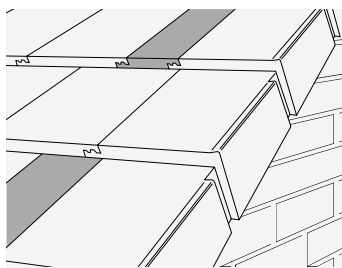


Fig. 6 – Maintain broken bond with half tiles for Modern Cloak Verge

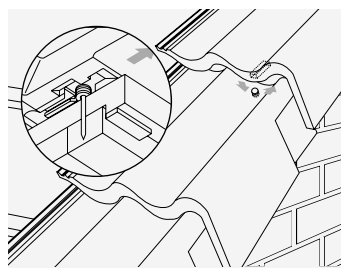


Fig. 7 – Engage nylon spacer with nail into channel of verge unit

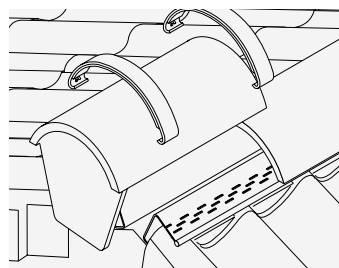


Fig. 8 – Completion at ridge

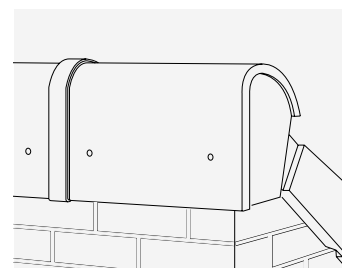


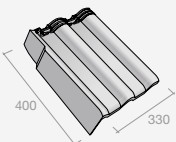
Fig. 9 – Completion at mono-ridge

INTERLOCKING CLAY TILE CLOAK VERGE SYSTEM

Marley clay tile cloak verge systems provide a mechanically fixed, durable and maintenance-free finish to the roof verge.



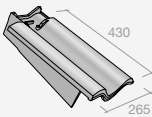
COMPONENTS



Maxima cloak verge tile

Natural Red
(LH code 72518,
RH code 72618)

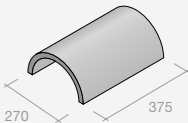
Matt Black
(LH code 72543,
RH code 72643)



Melodie cloak verge tile

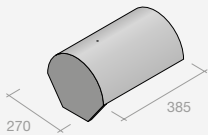
Natural Red
(LH code 71518,
RH code 71618)

Slate Grey
(LH code 71550,
RH code 71650)



Half round ridge tiles

Natural Red (code 77118)
Rustic Red (code 77187)
Matt Black (code 77143)



Half round ridge end tiles

Natural Red (code 77218)
Rustic Red (code 77287)
Matt Black (code 77243)

INTERLOCKING CLAY TILE CLOAK VERGE SYSTEM

INSTALLATION

- 1 Install roof underlay and tiling battens in normal manner adjusting gauge to suit headlap and to avoid having to cut verge units. Allow underlay to overhang verge by approximately 50mm.
- 2 Saw ends of tiling battens off flush with gable wall or bargeboard and nail within a maximum of 500mm from end (Fig. 2).
- 3 For rafter pitches over 30°, where it is not possible to gain a firm fixing for ends of tiling battens, a double course of battens across a complete rafter span can be used, to increase rigidity of system.
- 4 If, during setting out, vertical leg of cloak verge unit cannot be closely fitted with brickwork or bargeboard, fix fibre cement undercloak strip beneath tiling battens, to prevent ingress of birds and vermin.

Note: Maximum overhang using this method must not exceed 50mm, measured to outside of verge unit.
- 5 Position cloak verge unit at eaves and mark position.
- 6 Remove cloak verge unit and nail comb filler, or cut filler as applicable to top of fascia.

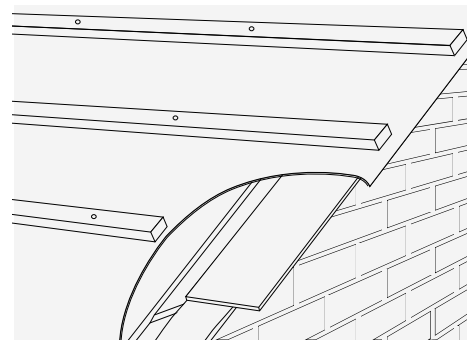


Fig. 1 – Set out roofing battens to suit headlap

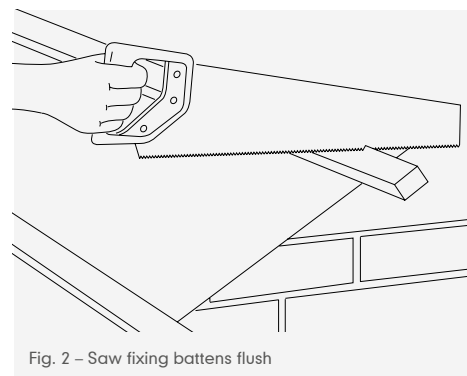


Fig. 2 – Saw fixing battens flush

INTERLOCKING CLAY TILE CLOAK VERGE SYSTEM

- 7 Ensure nibs of cloak verge unit are correctly located against top edge of tiling batten.
- 8 Drive aluminium nail with spacer unit assembly (Fig. 3).
- 9 Lay next cloak verge unit in a similar manner.

Note: Nail holes in cloak verge half tiles should be sealed with mastic, when used on roof pitches below 25°. All verge units should be head clipped using supplementary mechanical fixing as required.

- 10 Install remaining cloak verge units in a similar manner and tile roof in normal way.
- 11 Head clip all verge units using supplementary mechanical fixings as required.

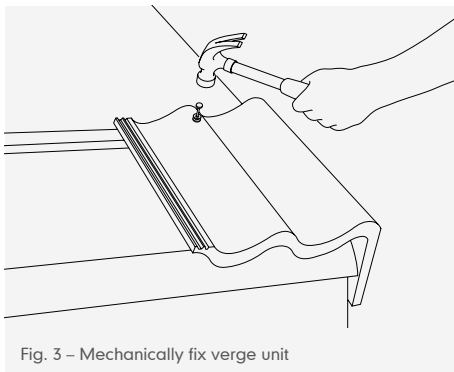


Fig. 3 – Mechanically fix verge unit

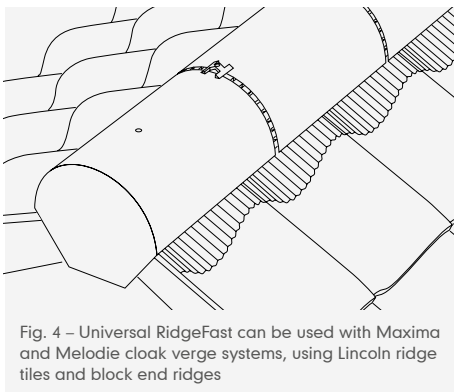


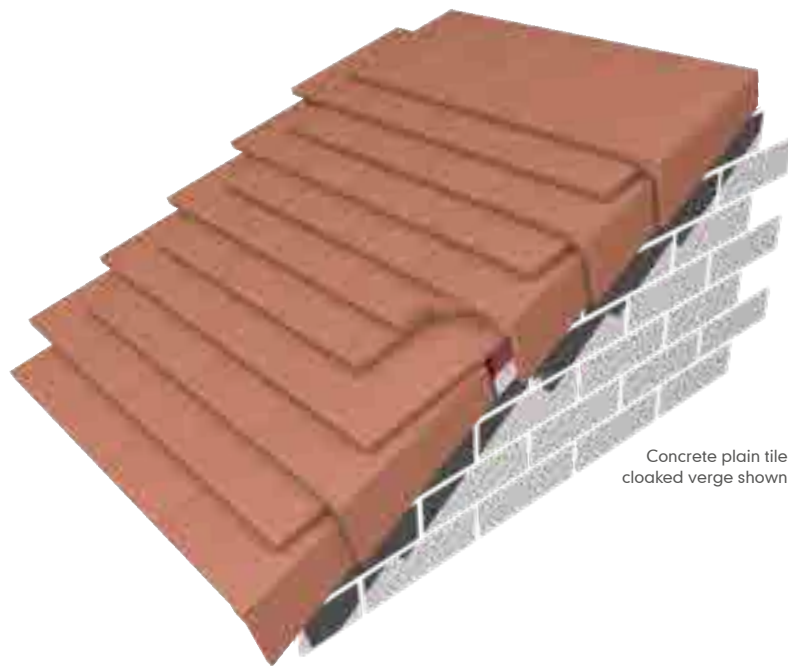
Fig. 4 – Universal RidgeFast can be used with Maxima and Melodie cloak verge systems, using Lincoln ridge tiles and block end ridges

UNIVERSAL RIDGEFAST WITH MAXIMA AND MELODIE

When using Maxima or Melodie clay interlocking tiles with the Universal RidgeFast system, Lincoln clay ridge tiles should be used, with block end ridges at the gable ends (Fig. 4).

CLAY AND CONCRETE PLAIN TILE CLOAK VERGE SYSTEM

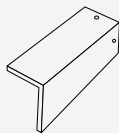
Plain tile cloak verges provide a weatherproof and mortar free finish to the roof verge. They are available in right and left hand units in colours to match the main roof tiles, twice nailed for maximum security. The apex of the roof is finished with matching stop-end ridge tiles.



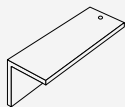
Concrete plain tile
cloaked verge shown

CLAY PLAIN TILE CLOAK VERGE SYSTEM

COMPONENTS



Clay plain tile
right hand
cloak verge



Clay plain tile
left hand
cloak verge

INSTALLATION

- 1 Felt and batten the roof in the normal manner, allowing the ends of the tiling battens to be cut off flush with the gable end or bargeboard.
- 2 Where possible, set out the tiling so that the leg of the cloak verge fits flush with the brickwork or bargeboard. If so, cut the ends of the battens flush with the outer edge of the gable wall or bargeboard (Fig. 1).

Where setting out dictates, the cloak verge tiles can be laid to a maximum 50mm overhang, a fibre cement strip should be inserted beneath the tiling battens and the top of the wall or bargeboard to prevent the ingress of birds or vermin (Fig. 2).

- 3 Commence laying an under-eaves course of tiles using a standard eaves tile or a cloak verge tile cut down to size (Fig. 3, page 167).

Where possible use a standard eaves tile, but establish what will be required for the top course at the roof apex, to ensure that the same unit is provided on both sides of the apex. In this way, opposite gable ends can be constructed with cloak verge tiles in different courses, but will still maintain a balanced appearance when viewed from the ground.

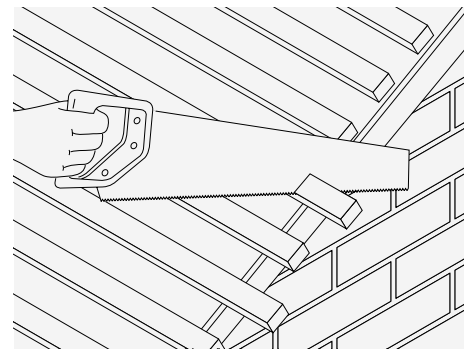


Fig. 1 – Saw battens flush

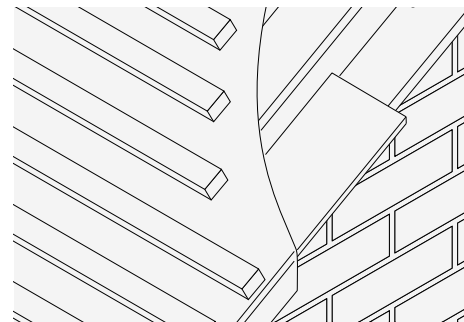


Fig. 2 – Fibre cement strip inserted under battens, 50mm overhang

CLAY PLAIN TILE CLOAK VERGE SYSTEM

- 4 Nail the eaves cloak verge tile with 2 No. 38mm x 3.35mm aluminium or stainless steel ring shank nails to both top and end of the tiling batten using the holes in the top and vertical leg. Alternatively, if the verge construction allows, a timber batten can be secured to the outer edge of the bargeboard or gable wall to assist nailing the vertical leg of the cloak verge tile (Fig. 3).
- 5 Each alternate course should contain a normal plain tile to break bond, which should be twice nailed using standard 38mm x 2.65mm aluminium or stainless steel nails (Fig. 4).
- 6 The remainder of the verge is completed using successive cloak verge and plain tiles until the apex is reached. The top course may be either a tops/eaves tile or a cloak verge tile cut to size, with nail holes drilled to suit, and fixed as required. If necessary, trim the vertical legs of the cloak verge tiles where steep pitch roofs are encountered.
- 7 Complete the apex closure of the two top course cloak verge tiles by fitting a Stop End Ridge tile and a tile-and-a-half/ gable tile, cut to fit between the vertical legs of the top course cloak verge tiles. Drill and nail cut tile to timber groundwork (Fig. 5).
- 8 Either mortar bed end ridge tile with mechanical fixing, or use a dry fix system.

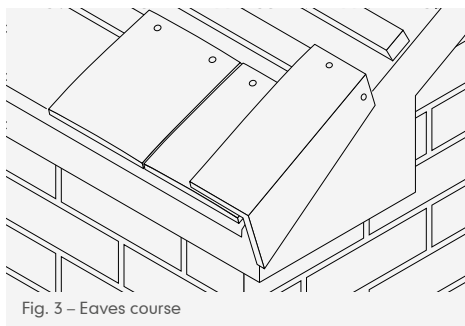


Fig. 3 – Eaves course

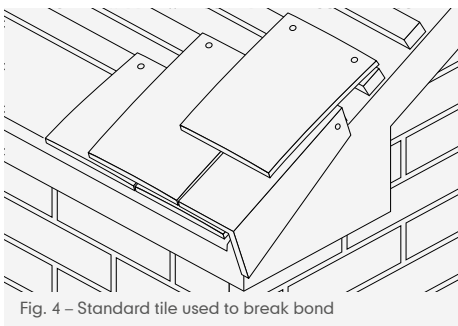


Fig. 4 – Standard tile used to break bond

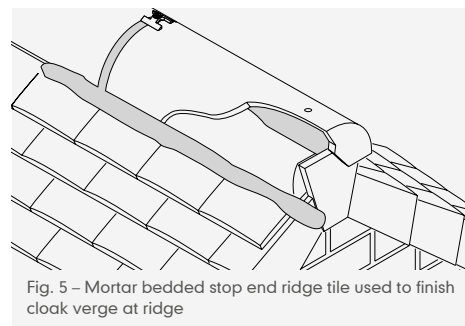
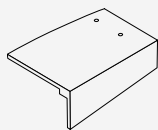


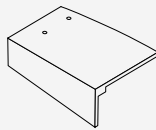
Fig. 5 – Mortar bedded stop end ridge tile used to finish cloak verge at ridge

CONCRETE PLAIN TILE CLOAK VERGE SYSTEM

COMPONENTS



Concrete plain
tile right hand
cloak verge
(code 250)



Concrete plain
tile left hand
cloak verge
(code 249)

INSTALLATION

- 1 Felt and batten the roof in normal way.
- 2 Where possible, set out tiling so that cloak verge tile fits flush with brickwork or bargeboard (Fig. 6).
- 3 Where cloak verge tiles are laid to maximum 50mm overhang, it is recommended that a strip of fibre cement board is fitted between tiling battens and wall or bargeboard to prevent ingress of birds (Fig. 7).
- 4 Fix under-eaves course using either a normal eaves tile or cloak tile cut down to size. Where possible, use standard eaves tiles, but establish what will be required at top course, and ensure that same finish is provided on both sides of apex. In this way, opposite gable ends can be constructed with cloak verge tiles in different courses but still maintain an even appearance when viewed from ground level.
- 5 Fix the eaves cloak verge tile with 2 No. 38mm x 2.65mm aluminium nails (Fig. 8).

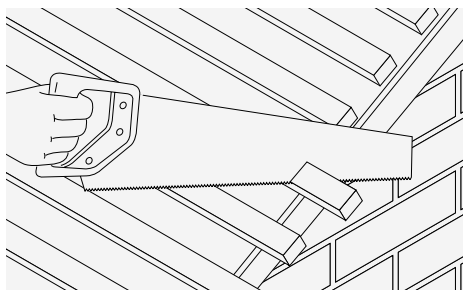


Fig. 6 - Saw battens flush

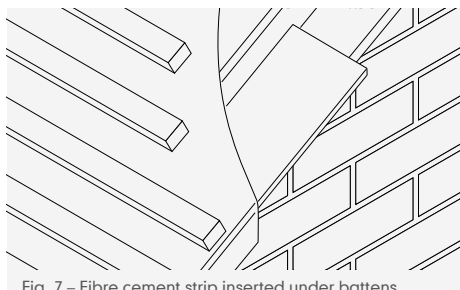


Fig. 7 - Fibre cement strip inserted under battens,
50mm overhang

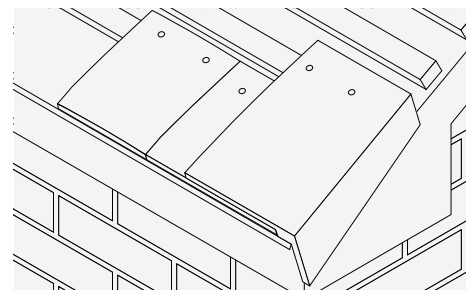


Fig. 8 - Eaves course

CONCRETE PLAIN TILE CLOAK VERGE SYSTEM

- 6 Each alternate course should contain a tile-and-a-half to break bond and must be twice nailed (Fig. 9).
- 7 Build up verges with successive cloak verge and tile-and-a-half tiles until apex is reached. The top course may be either a tops or eaves tile or a cloak verge tile cut to size with nail holes drilled to suit as required.
- 8 Mechanically fix these or install with Marley dry ridge system (Fig. 10).
- 9 Lay special block end segmental ridge either bedded in mortar or mechanically fixed by use of Marley dry ridge system (Fig. 11).
- 10 When using the Marley dry ridge system, the block end ridge tile should be fixed using a supplementary ridge union fitted over the top of the ridge tile near to the end of the ridge. A maximum 5mm cut should be made in the base of the ridge tile to accommodate the 'claw' of the ridge union. The lugs on the underside of the union should be broken off.

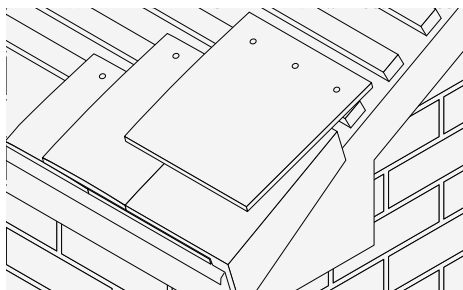


Fig. 9 – Tile-and-a-half used to break bond

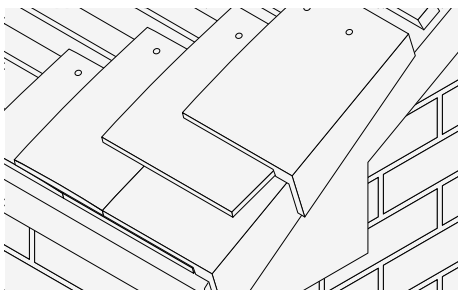


Fig. 10 – Successive courses

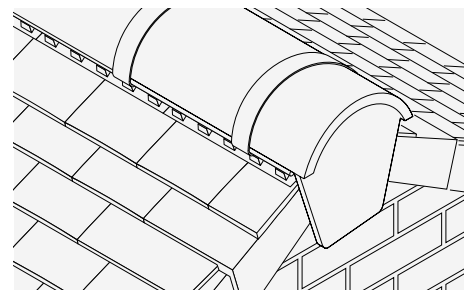


Fig. 11 – Lay special block end ridge

UNIVERSAL HIPFAST SYSTEM

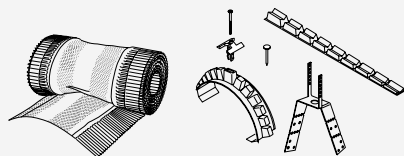
HipFast is a simple and rapidly installed, dry fixed hip system suited to all Marley tiles and slates, as well as those of other manufacturers.



BS 8612
COMPLIANT

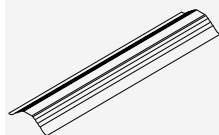
UNIVERSAL HIPFAST SYSTEM

COMPONENTS



Universal 6m HipFast system
(code 53400)

Kit contains: 1 No. 6m length hip roll,
6 No. batten brackets, 13 No. unions and clamps,
2 No. tapered filler units, 16 No. 75mm x 4.8mm
s/s screws, 36 No. 25mm x 3.35mm s/s ARS nails,
3 No. washers, 24 No. tile head C clips,
36 No. tile tail clips



Universal HipFast
support tray*
(code 34002)



RidgeFast/HipFast
union pack*
(code 53303)

* Sold separately

INSTALLATION

1 Lay roof underlay and battens in the normal manner, leaving a 5mm continuous gap in underlay either side of hip rafter if roof void is to be ventilated to recommendations of BS 5250. Mitre cut the ends of tiling battens and support on hip rafter (Fig. 1).

If rigid sarking is used, finish the board at side of hip rafter (allow a 5mm continuous gap either side of the hip rafter if the roof void is to be ventilated).

2 Fix Hip Batten Brackets to hip rafter using nails provided (4 No. per bracket).

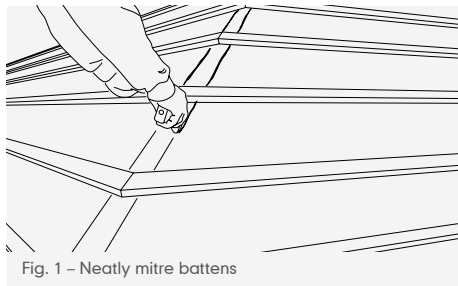


Fig. 1 – Neatly mitre battens

Ensure first Bracket is fixed as close as possible to base of the hip rafter and topmost Bracket no more than 100mm from hip/ridge apex (when fixing with Plain tiles, tiling battens will require trimming back from hip rafter, locally, to provide space for fitting hip brackets) (Fig. 2). Support any batten ends with noggins.

Fix remaining batten brackets equally over the length of the hip.

Batten Brackets can be fitted at a choice of two heights achieved by bending bracket legs inwards along the appropriate diagonal line of holes, (see table on page 175).

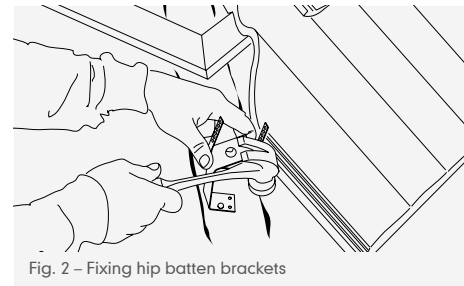


Fig. 2 – Fixing hip batten brackets

UNIVERSAL HIPFAST SYSTEM

- 3 Tile roof leaving a gap of 80mm between raking cut tiles laid adjacent to hip rafter (Fig. 3). Ensure all raking cut tiles and slates are fully supported on the battens and if not, provide suitable packers to prevent tiles from rocking.
- 4 Ensure that all raking cut roof tiles along the length of hip are secured using the 'C' clips provided or secret cut tile clips (Code 43607, sold separately) (Figs. 4 and 5).

In areas of high exposure raking cut tiles or slates may be bonded to adjacent fully fixed tiles or slates using an

appropriate epoxy resin adhesive. This will minimise the risk of smaller cut pieces of tile or slate becoming dislodged. (Details of suitable adhesives can be obtained from the Technical Advisory Service).

Note: When using Plain tiles, ensure that tile-and-a-halfs are used on all courses adjacent to the hip, in order to minimise small cut pieces.

The use of half-tiles with interlocking tiles will also reduce small cut pieces adjacent to the hip.

- 5 Secure either one or two thicknesses of 50mm x 25mm tiling batten to the top of Batten Brackets, parallel to hip rafter, by folding over Batten Bracket arms and nailing through perforations into the battens using nails provided (Fig. 6).

Where two battens are needed, ensure lowest is screwed to upper batten before locating into Batten Brackets, with any joints in hip battens made over Batten Brackets to ensure both ends are fixed.

Note: To establish if one or two batten thicknesses are required, place a hip tile over the hip junction at the highest point of the tiling and assess the space remaining between the top of the batten bracket and the underside of the hip tile. Install two battens where two battens locate without fouling the hip tile.

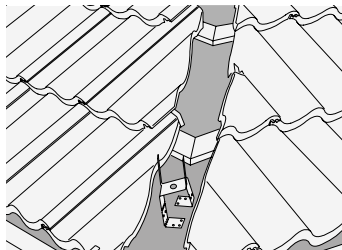


Fig. 3 - Lay tile to hip with raking cut



Fig. 4 - Clip all small pieces of tile along hip

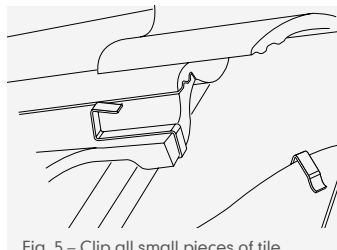


Fig. 5 - Clip all small pieces of tile along hip

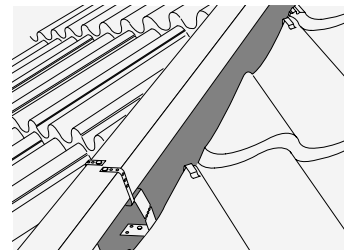


Fig. 6 - Fixing hip batten

UNIVERSAL HIPFAST SYSTEM

- 6 Starting from eaves, roll out HipFast roll centrally over hip rafter battens, and secure in position using well spaced felt nails, leaving a distance of 100mm to oversail the hip/ridge apex. Joints along hip should be lapped by 100mm to drain water down roof (Fig. 7).
- 7 Remove backing tape covering both mastic strips from underside of the roll (Fig. 8). Press adhesive strips on both sides of hip firmly onto tiles below to ensure a continuous seal along length of both sides of hip.

Both sides should be dressed down together to ensure edge of roll is kept aligned. Avoid stretching HipFast Roll during fitting.

Wash off any surface dust on raking cut tiles with brush and water and allow to dry thoroughly prior to sticking down the HipFast Roll.

- 8 In all applications it is recommended that HipFast support trays (34002) be used. These are designed to ensure the correct support and alignment of hip tiles. Cut a HipFast Hip Support Tray to suit angle and overhang of tiles at eaves (Fig. 9).

- 9 Fit a purpose designed Block End Hip tile tight against eaves tiles and trim the Block End if required. Fix Block End Hip tile through HipFast Hip Support Tray to hip batten using 75mm x 4.8mm screw and sealing washer provided. Tighten securely to ensure a firm seal (Fig. 10). For Maxima, Melodie or Lincoln clay interlocking tiles, see pages 79-110.

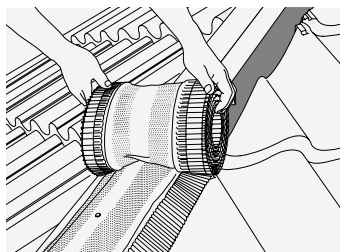


Fig. 7 – Roll out HipFast roll

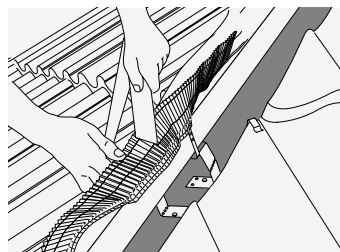


Fig. 8 – Remove backing tape

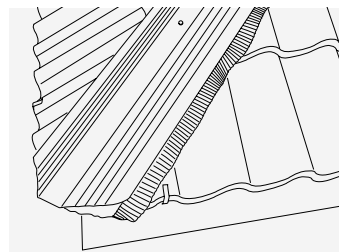


Fig. 9 – HipFast support tray cut at eaves

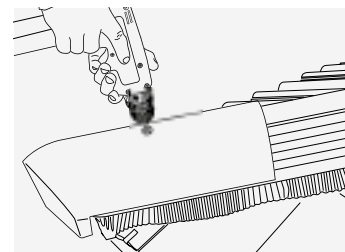


Fig. 10 – Fixing Block End Hip tile

UNIVERSAL HIPFAST SYSTEM

- 10 Select a hip union, union clamp and 75 x 4.8mm screw. Fit a union clamp into the central slot in the hip union and offer up the assembly into the open end of the hip tile so that it is trapped between the clamp and the union flange. Where the ends on the union overlap the edges of the hip tile, cut off or fold inward the excess length along the crease lines at either end (Fig. 11).

When the union clamp is fully engaged in the hip union, it may create an interference fit with the sub-structure. In this case, the protruding length of the clamp can be snapped off below the hip union flange.

- 11 Position next Hip tile into open side of Hip Union and Clamp assembly. Continue process of laying support trays (centrally along hip tree at 100mm overlap), hip tiles, unions and clamps ensuring that all tiles are aligned. Ensure screws are tightened well and the edges of the Hip tiles sit evenly on Hip Support Trays (Fig. 12).

- 12 At apex, ensure final Hip tile is a full length unit, with any adjustments to suit the length of hip taken up by cutting the adjacent one or two Hip tiles.

Top Hip tile should be mitred into other Hip and Ridge tiles. The hip support tray should also be mitred at internal angle.

- 13 Secure the mitred end of the top Hip tile by drilling a 6mm dia. hole centrally through the tile, approx. 125mm down from the apex, using a masonry drill. Fix the Hip tile to the hip battens using a screw with washer provided and weather all mitre joints using a Code 4 lead saddle or soaker (Fig. 13).

- 14 Where Marley RidgeFast is also being used and the hip tiles are the same as the ridge tiles, a Tapered Filler unit must be fitted beneath both edges of the end ridge tile to ensure a close fitting mitre can be achieved at the apex (Fig. 14).

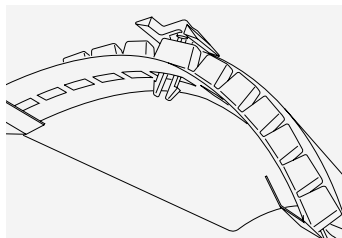


Fig. 11 – Fold in union tabs to suit capping



Fig. 12 – Fixing Hip Unions

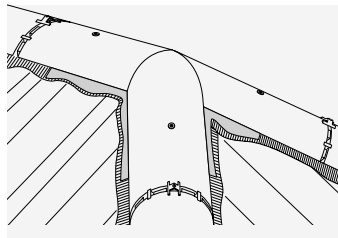


Fig. 13 – Weathering of hip/ridge junction with lead soaker

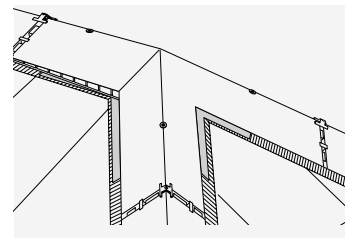


Fig. 14 – Weathering of angular hip/ridge junction with soaker

UNIVERSAL HIPFAST SYSTEM

When using flat tiles or slates, the Fillers are trapped between the Ridge Roll and the bottom edges of the ridge tile, with the deeper end toward the hip. With profiled tiles, a 500mm length of HipFast Support Tray must be nailed centrally to the ridge batten through the Ridge Roll to act as a bearer for the Tapered Fillers and end ridge tile.

UNIVERSAL HIPFAST WITH MAXIMA AND MELODIE

When using Maxima or Melodie clay interlocking tiles with 457mm concrete third round hip tiles (Fig. 16), a 457mm concrete third round stop end hip tile should be used at the hip end. See pages 79-93.

UNIVERSAL HIPFAST WITH LINCOLN

When using Lincoln clay interlocking tiles with 375mm clay third round hip tiles, a 375mm clay third round stop end hip tile, which is pre-holed for fixing, should be used at the hip ends (Fig. 17). See pages 94-102.

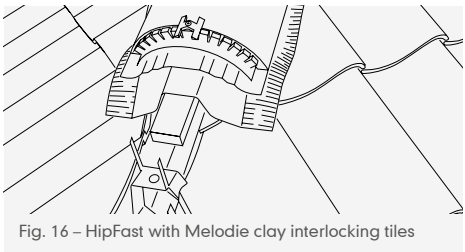


Fig. 16 – HipFast with Melodie clay interlocking tiles

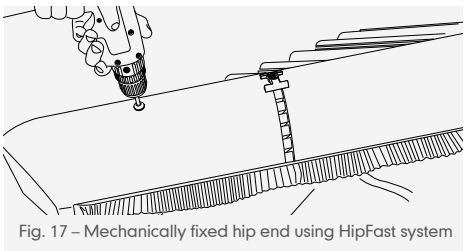


Fig. 17 – Mechanically fixed hip end using HipFast system

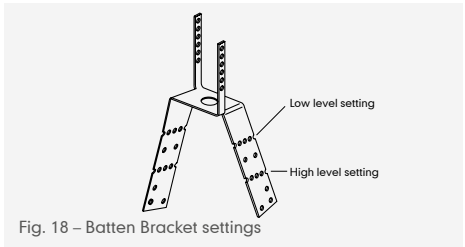


Fig. 18 – Batten Bracket settings

BATTEN BRACKET SETTING TABLE FOR MARLEY ROOF TILES*

Low level batten bracket setting (bend along top row of diagonal holes)

Edgemere (above 25° pitch)

Duo Edgemere (above 25° pitch)

Ashmore

Plain

Ludlow Plus

Ludlow Major (above 32.5° pitch)

High level batten bracket setting (bend along bottom row of diagonal holes)

Edgemere (17.5° to 25° pitch)

Duo Edgemere (17.5° to 25° pitch)

Modern

Duo Modern

Ludlow Major (22.5° to 32.5° pitch)

Double Roman

Mendip

Wessex

Anglia

Maxima

Melodie

Lincoln

Eden

* Apply same settings for other manufacturers equivalent tile profiles.

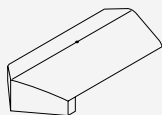
DRY HIP SYSTEM

The Marley dry hip system has been developed to provide a mechanically fixed, weathertight and maintenance-free system for hipped roofs without the need for mortar bedding. It is suitable for use with all Marley concrete plain tiles and concrete interlocking tiles and is designed for use with third round and modern hip tiles.

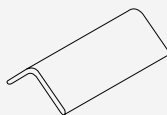


DRY HIP SYSTEM

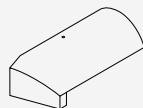
COMPONENTS



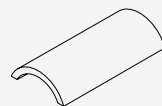
Modern block
end hip tile
(code 292)



Modern ridge/
hip tile
(code 209)



Third round block
end hip tile
(code 291)



Third round
hip tile
(code 289)



Tile tail clip pack
(20 clips)
(code 43602)



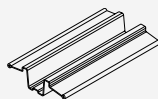
Secret cut tile clips
(code 43607)



Modern ridge/hip
union
(code 4140*)



Third round
hip union
(code 4350*)



Dry hip batten
section
(code 43300)



Modern hip apex
cap units

15°-24° (code 4381*)
25°-35° (code 4382*)
36°-45° (code 4383*)



Third round hip
apex cap units

15°-24° (code 4371*)
25°-35° (code 4372*)
36°-45° (code 4373*)

Dry hip system fixing kit

(code 54360)

Kit contains: 2 No. 3m
lengths of closed-cell
rubber foam strips,
5 No. PVCu fixing/
expansion blocks,
12 No. head clips,
2 No. PVCu 'H' section clips,
18 No. tail clips,
7 No. 75mm x 10g s/s
drive screws,
1 No. block end hip
bracket and set screw
with sealing washer

* Use colour code suffix: 1 - Grey, 3 - Brown, 4 - Terracotta.

DRY HIP SYSTEM

INSTALLATION

- 1 Felt and batten roof in normal manner, ensuring ends of the tiling battens are cut neatly to a mitre and nailed to hip tree or rafter.

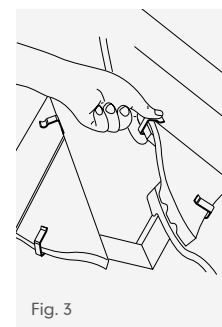
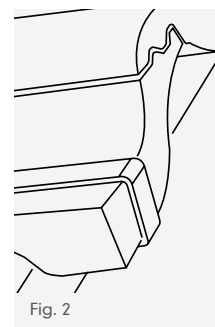
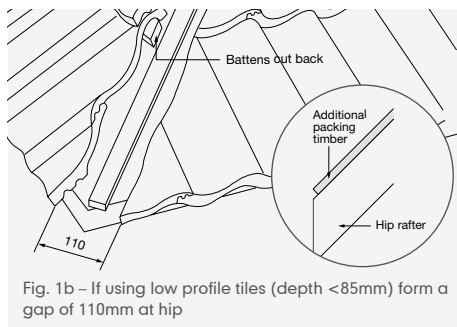
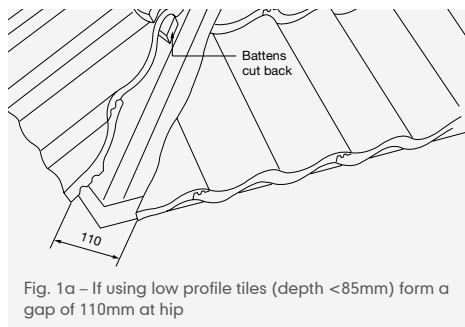
Note: In situations where counter-battens and/or rigid sarking have been fixed to adjacent roof slopes, an additional timber batten of equivalent depth, must be securely fixed to top of hip rafter.

- 2 Lay roof tiles in normal manner and fix in accordance with specification.

- 3 If using low profile tiles with depth from rafters to top of tile of <85mm, the battens need to be cut back to the width of 110mm and the hip batten section screwed directly to the roof structure (Fig 1a).

If using high profile tiles with overall depth >85mm, the batten section needs to be screwed through the battens or an additional piece of packing timber needs to be used, sized 15-25mm to suit (or standard 50x25mm batten will suffice) (see Fig 1b).

- 4 Secure any small cut pieces of tile* to adjacent large tile by means of the special head clip (supplied in the fixing kit) and ensure they are fully supported at hip intersection. Ensure orientation of clip is such that end of throat is flush with cut tile (Figs. 2 and 3).



DRY HIP SYSTEM

- 5 In addition, prevent any small cut pieces of tile from slipping down the roof slope by using tail clip (supplied in fixing kit), which is simply bent over back of tile below and fitted over front edge of the cut tile.

In areas of high exposure raking cut tiles or slates may be bonded to adjacent fully fixed tiles or slates using an appropriate epoxy resin adhesive. This will minimise the risk of smaller cut pieces of tile or slate becoming dislodged.

Note: When using Plain tiles, ensure that tile-and-a-half-tiles are used on all courses adjacent to the hip, in order to minimise small cut pieces adjacent to the hip.

* The use of half tiles with interlocking tiles will also reduce small cut pieces.

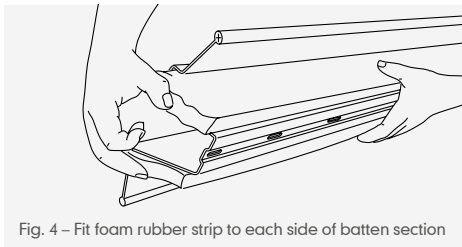


Fig. 4 – Fit foam rubber strip to each side of batten section

- 6 Insert the closed cell foam rubber strip (supplied in fixing kit), into recesses on each side of PVCu extruded dry hip batten section (Fig. 4).
- 7 Trim top flanges of batten section to maintain angle of external corner of hip. If necessary, make a horizontal cut in walls of batten section, to enable it to fit over fascia upstand (Fig. 5).
- 8 Locate batten section assembly into gap between cut tiles up length of hip. Two or more lengths may be joined together up hip, ensuring that closed cell foam rubber strip from each section abuts tightly to prevent water ingress (Fig. 6).

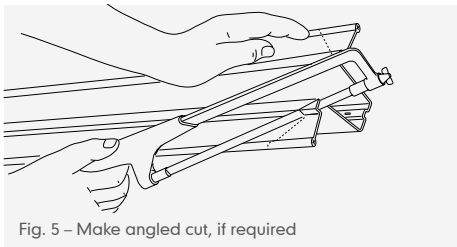


Fig. 5 – Make angled cut, if required

- 9 Fit small 'H' section PVCu clips (included in fixing kit), onto top flange of batten section each side of butt joint to provide added support.
- 10 Locate PVCu fixing/expansion blocks inside the dry hip batten section and fix to hip tree or rafter using the 75mm x 10g stainless steel drive screws (supplied in fixing kit) (Fig. 7).
- 11 Position first expansion block at eaves, a maximum 185mm from mitred end of batten section. Note the orientation of the fixing/expansion block (as shown in Fig. 8).
- 12 Position remaining fixing/expansion blocks at approximately 565mm centres from first block.

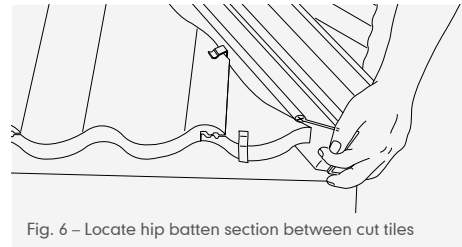
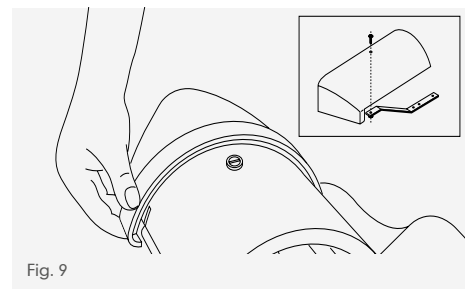
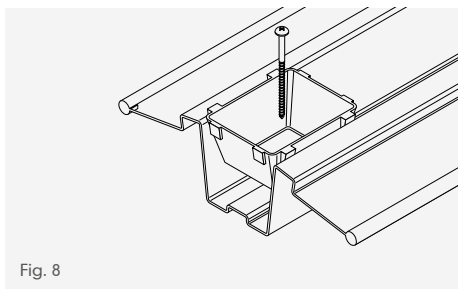
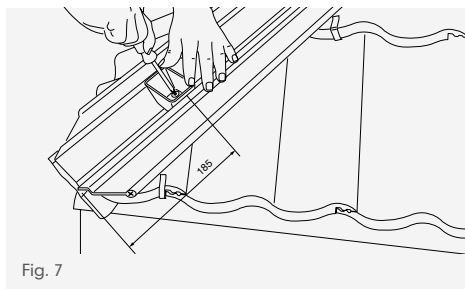


Fig. 6 – Locate hip batten section between cut tiles

DRY HIP SYSTEM

- 13 Screw firmly into position, so that as they reach base of dry hip batten section, they expand sides of section and form a weathertight seal between closed cell foam rubber strip and raking cut roof tiles.
- 14 Fit last block over junction of two lengths of dry hip batten section to firmly secure both ends.
- 15 Fix uppermost fixing/expansion block as close to apex as possible.
- 16 Commence laying hip tiles from eaves using block end hip tile. Ensure that downstand at end does not foul eaves gutter, and trim if necessary, using a disc cutter.
- 17 Secure block end hip bracket to underside of block end hip tile by assembling set screw and sealing washer through hole in tile to captive nut on bracket (supplied in the fixing kit).
- 18 Locate block end hip tile and assembly onto top of circular beads of dry hip batten section, and fix end of bracket to hip rafter using two 75mm x 10g stainless steel drive screws (Fig. 9).
- 19 Firmly secure block end hip tile with a PVCu hip/ridge union fitted over end of tile and clip to the circular beads of dry hip batten section.
- 20 Break off locating lugs on underside of hip/ridge union with pincers or other suitable tool before fitting. Make two small cuts (max. 5mm deep) at either side of block end hip tile to allow claws of hip ridge union to clip onto bead of batten section (Fig. 10, page 181).
- 21 Lay remaining hip tiles up length of hip, with each leg seated on top of circular bead. Leave gap of approximately 3mm between each hip tile to allow clearance for locating lugs of the PVCu hip/ridge unions.



DRY HIP SYSTEM

- 22 Secure each hip tile by clipping ends of PVCu hip/ridge union over circular beads of dry hip batten section. Fix any cut hip tiles adjacent to end hip tiles, which must be full tiles (Fig. 13).
- 23 At hip apex, mitre dry hip batten sections together as closely as possible. When forming a junction with the Marley ventilated dry ridge system, ensure the closed cell foam rubber strip 100mm longer than required, and insert into dry ridge batten sections to ensure a watertight seal (Fig. 11).
- 24 Place purpose-made apex cap suitable for roof pitch, over uppermost ridge/hip tiles, and mark position of two cut out slots at lower edges. Remove cap and cut a small corresponding slot in hip/ridge tile, maximum 5mm deep (Fig. 12).
- 25 Obtain the three hip/ridge unions suitable for the hip/ridge profile, and break off three central spacers on underside with pincers or other suitable tools. Do not break off the two location lugs remaining.
- 26 Secure legs of apex junction cap with hip/ridge unions ensuring that location lugs align with slot at sides of cap, and are fully clipped to circular beads of dry hip and dry ridge batten sections (Fig. 13). The foam gasket on underside of hip/ridge union must be retained.
- 27 Where universal dry hip system does not terminate at a conventional three-way intersection (or as an alternative to a PVC apex cap), the hip/ridge junction can be weathered with a Code 4 or 5 lead saddle with edges secured in above manner.
- Note: Where special roof groundwork is encountered e.g. rigid insulation boards laid above the roof structure, please consult Technical Advisory Service for advice concerning the suitability of fixings.

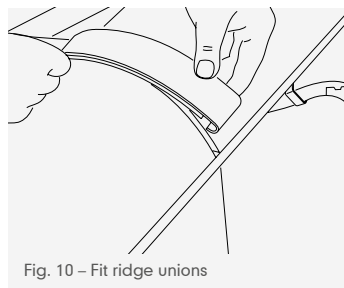


Fig. 10 – Fit ridge unions

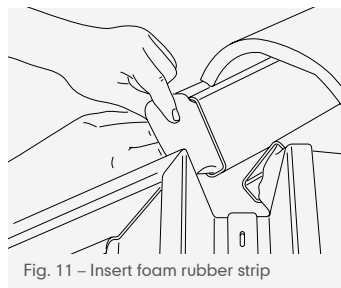


Fig. 11 – Insert foam rubber strip

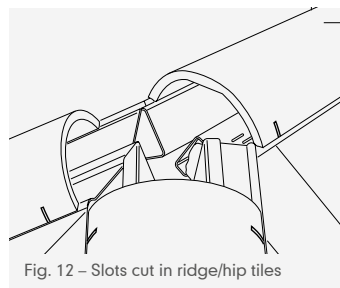


Fig. 12 – Slots cut in ridge/hip tiles

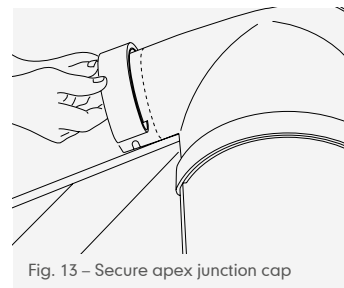


Fig. 13 – Secure apex junction cap

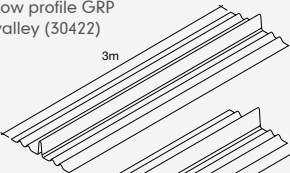
UNIVERSAL DRY VALLEY SYSTEM

Developed to allow the designer freedom to specify a completely mortar-free roof, this system utilises the latest GRP technology.

The advanced and unique gutter section improves discharge rates and gives the appearance of a close-cut finish. Min. pitch 17.5°.

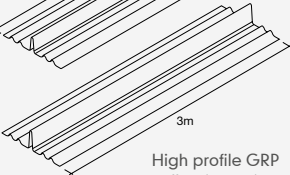
COMPONENTS

Low profile GRP valley (30422)



3m

High profile GRP valley (30421)



3m

High profile GRP valley (30421)

GRP DRY VALLEY TROUGH SUITABILITY		
Tile	High profile	Low profile
Anglia	•	
Ashmore/Plain		•
Double Roman	•	
Eden	•	
Edgemere range		•
Lincoln	•	
Ludlow Major	•	
Ludlow Plus	•	
Maxima/Melodie	•	
Mendip	•	
Modern/Duo Modern		•
Wessex	•	



UNIVERSAL DRY VALLEY SYSTEM

- 1 In all cases, valley boards should be fitted. Valley boards may be inset or continuous over the rafters. Where they are inset, they should be a minimum of 12mm thick and supported on bearers or noggins of 50 x 25mm or similar and set at a depth to suit the thickness of the valley board (Fig. 1).
- 2 Continuous overlaid boards should be minimum of 6mm thick plywood and only butt jointed over a supporting rafter (Fig. 2).
- 3 The width of the valley boards should extend by a minimum of 50mm beyond the edge of the valley trough. For overlaid boards on rafter spacings above 450mm, it is recommended that support noggins of 75 x 50mm are fixed under the outer edge of the valley board between the rafters (Fig. 3).

The fascia or barge board may be trimmed to allow the valley trough to pass through without flattening the profile, or alternatively a lead soaker may be used if required.

LINING THE VALLEY

- 4 A single strip of roofing underlay, at least the full width (500mm) of the valley boards, should be laid up the centre and directly on top of the boards allowing for an overlap beyond the fascia line where appropriate and which may be trimmed later (Fig. 4, page 184).

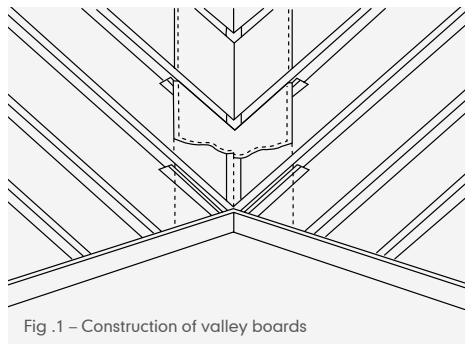


Fig. 1 – Construction of valley boards

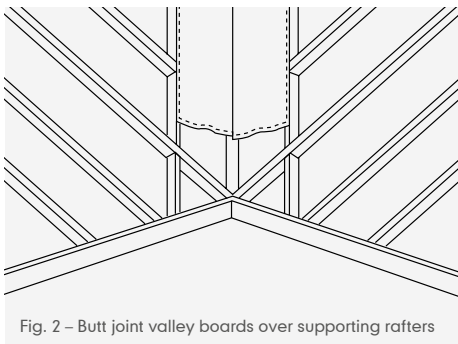


Fig. 2 – Butt joint valley boards over supporting rafters

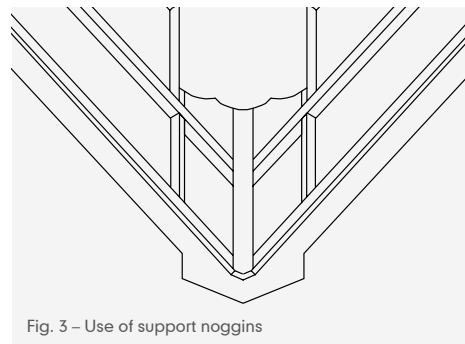


Fig. 3 – Use of support noggins

UNIVERSAL DRY VALLEY SYSTEM

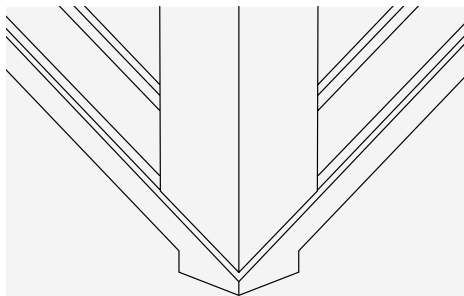


Fig. 4 – Lining the valley

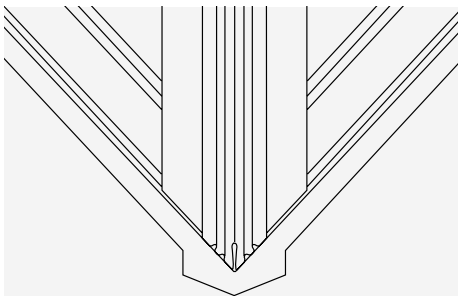


Fig. 5 – Fixing the valley trough

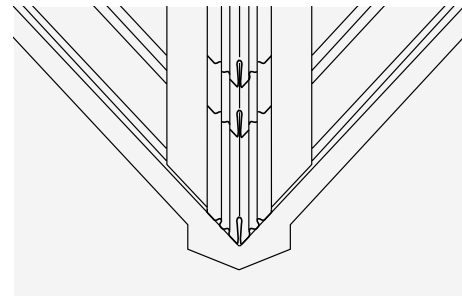


Fig. 6 – Valleys terminating above eaves level

FIXING THE VALLEY TROUGH

- 5 Fix dry valley trough by nailing outer welts to supporting timbers at 500mm max, centres, and overlapping lead (Code 4) apron by a minimum of 150-200mm (Fig. 5).

Lay roof underlay to overlap valley trough and trim between outer and inner welts. Trim tiling. Battens to lap on to outer welt and nail to supporting timbers.

- 6 Where a lead soaker is to be used at the foot of the valley, i.e. where the dry valley terminates above eaves level or where an eaves intersects with a verge or it is not appropriate to notch the fascia boards,

The soaker should be welted at the edge and supported with suitable timber work. The valley trough should be trimmed to suit before fixing if necessary.

LAYING RAKING CUT TILES TO VALLEY TROUGH

- 7 Cut raking tiles neatly to butt closely to central upstand of valley trough and secure all small raking cut tiles with tail clips or, where appropriate, use tile-and-a-half tiles to avoid small cut pieces.
- 8 Fill any small voids in the upstand of the valley trough with a suitable mastic.

UNIVERSAL DRY VALLEY SYSTEM

VALLEY INTERSECTIONS

- 9 Where a section of dry valley intersects with another section of dry valley e.g. at the roof apex of a dormer roof or where one or more sections intersect with the ridge of a roof, it is necessary to mark the angle of intersection and cut the valley trough prior to fixing.

A minimum Code 4 lead saddle should then be dressed over the mitred sections of the dry valley(s) and ridge if necessary. The length of the overlap of the saddle onto the dry valley should be in accordance with LSA guidance. Alternatively, the lead saddle may be dressed over the slates or tiles.

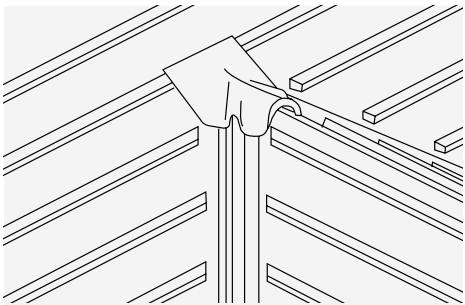


Fig 7 – Mid-slope valley intersection

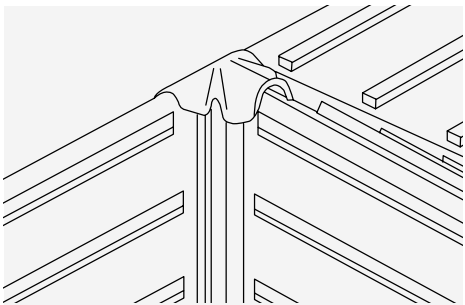


Fig 8 – Roof apex level valley intersection

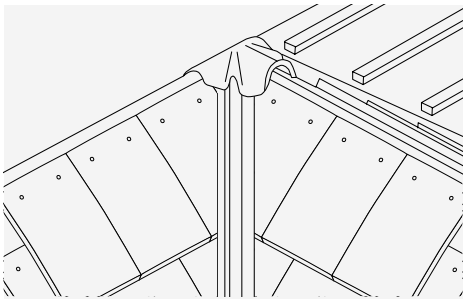


Fig 9 – Cut tiles to rake of valley

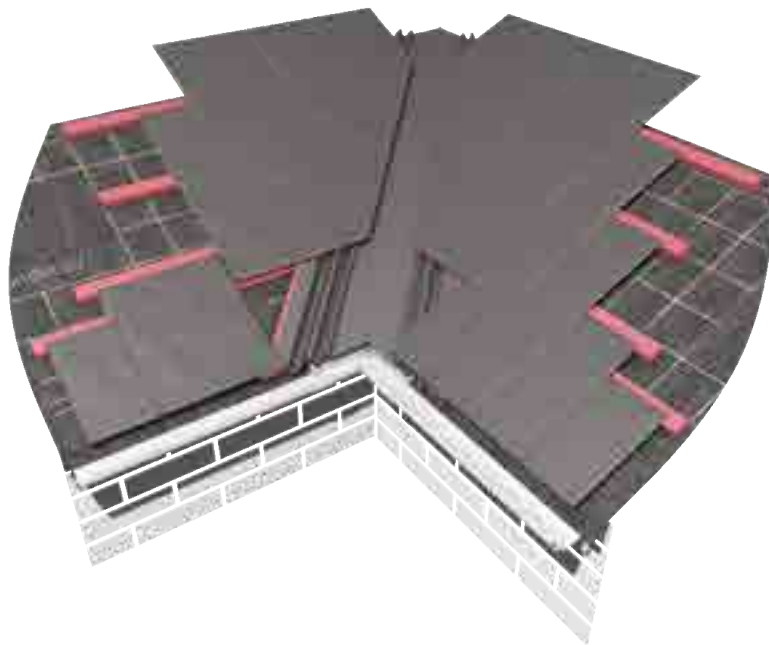
When joining lengths of dry valley, use the minimum lengths of overlap, as follows:

Roof pitch°	>39	30-39	22.5-29	<22.5
Overlap (mm)	150	200	300	350

GRP DRY VALLEY FOR SLATES

Developed to allow the designer freedom to specify a completely mortar-free roof, this system utilises the latest GRP technology. The advanced and unique parabolic gutter section improves discharge rates without added gutter depth.

For use with natural and fibre cement slates (pitch range 22.5° to 45°).



COMPONENTS



GRP slate dry valley trough
(code 30578)

GRP DRY VALLEY FOR SLATES

- 1

The valley trough may be fixed directly onto counter battens either to existing or new valley boards.
- 2

The valley should first be lined with an approved underlay one metre wide.
- 3

Counter battens of the same depth as the tiling battens should be nailed onto the valley boards over the underlay.
- 4

The lengths of the valley trough should be firmly pressed down on to the valley board to support the base and nailed, through pre-drilled holes at a maximum of 500mm centres, to the counter battens.
- 5

The roof tile underlay should then be laid and dressed over the counter battens.
- 6

The fascia board should be cut to allow the GRP valley trough to pass through and discharge into the gutter without flattening out. The end should be trimmed to the approximate centre line of the gutter.
- 7

At the head of the valley, a lead saddle should be fixed to lap over the valley trough.

When joining lengths of dry valley, use the minimum lengths of overlap, as follows:

Roof pitch°	>39	30-39	22.5-29
Overlap (mm)	150	200	300

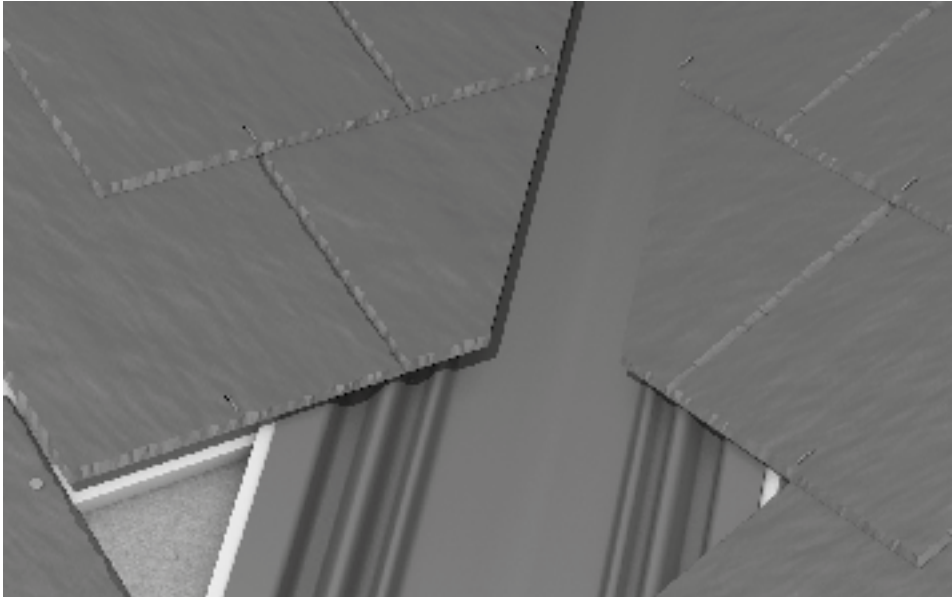


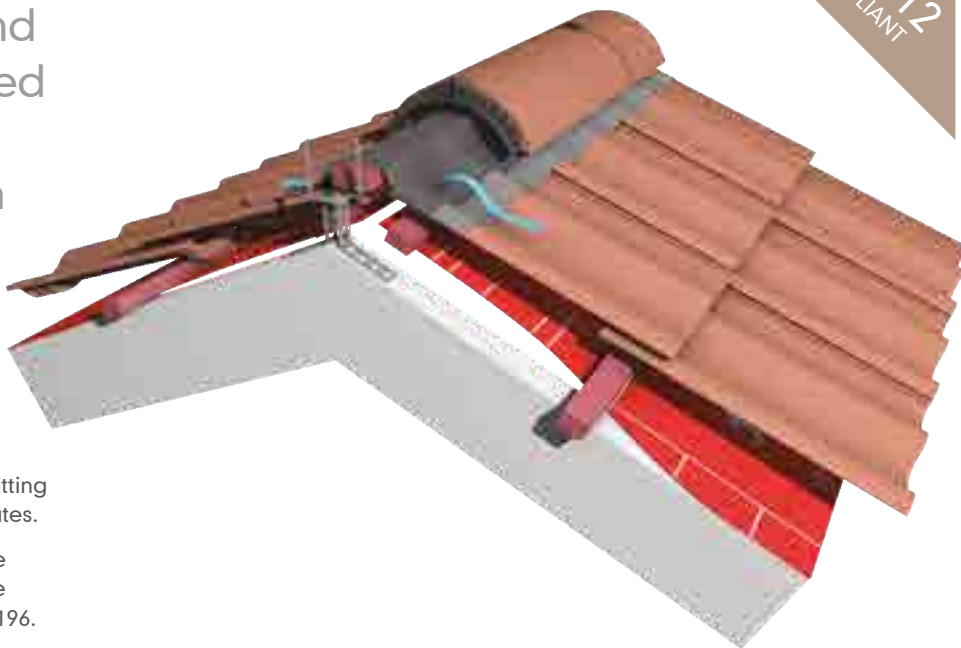
Fig. 1 – Raking cut slates laid with GRP valley trough

UNIVERSAL RIDGEFAST SYSTEM

RidgeFast is a simple and rapidly installed, dry fixed ridge ventilation system suitable for all duo-pitch roofs using all Marley tile and slate profiles, as well as those of other manufacturers.

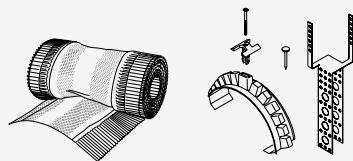
Universal RidgeFast used with concrete ridge fitting is compatible with natural and fibre cement slates.

If natural or fibre cement ridge fittings are to be used with natural or fibre cement slates, please use Universal Ridge Roll, shown on pages 195-196.



UNIVERSAL RIDGEFAST SYSTEM

COMPONENTS



Universal 6m RidgeFast system
(code 33000)

Kit contains: 1 No. 6m length hip roll,
10 No. batten brackets, 13 No. ridge unions,
13 No. ridge union clamps, 13 No. 75mm x 4.8mm
s/s screws, 40 No. 25mm x 2.65mm s/s ARS nails



RidgeFast
blanking
tape
(optional)
(code 33001)



Extra ridge
union pack
(optional)
6 per pack
(code 53303)

Deep ridge
screws
(For Eden
and Lincoln,
code 70000)

INSTALLATION

- 1 Lay the roof underlay and battens in the normal manner leaving a minimum 5mm continuous gap in underlay at roof apex (refer to BS 5250 recommendations for specific advice) (Fig. 1).

Before fixing top course tiling batten, fix ridge batten brackets to each rafter, centrally about ridge apex, using the 25mm x 2.65mm dia./s ring shank nails supplied.

Note: Where a ridge tree is in place, a ridge batten bracket may not be required. In this case the ridge tree may be raised in height by fixing appropriately sized lengths of timber centrally to ridge tree.

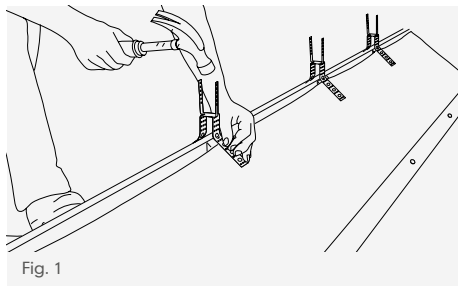


Fig. 1

To achieve required height of ridge batten bracket, legs of bracket need to lie parallel to rafters bent at a position where they will provide a minimum 20mm penetration of the ridge screw into a 25mm thick ridge batten. For all Marley tiles and slates, please refer to 'RidgeFast batten height setting table', page 194.

To establish the appropriate point at which to bend legs of ridge batten bracket and depth of ridge batten (1 or 2 tiling battens) a short length of top tiling batten should be temporarily nailed into place either side of ridge and onto which a tile is laid.

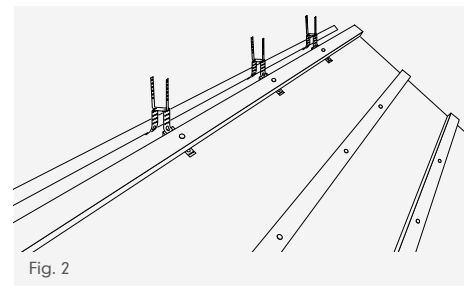


Fig. 2

UNIVERSAL RIDGEFAST SYSTEM

Position a ridge tile centrally onto roof tiles. By offering up a ridge batten bracket to the side of ridge tile bend point and batten thickness can be assessed so that min. 15mm screw penetration is achieved.

For further clarification please contact Marley Technical Advisory Service.

- 2 Fix the top course tiling battens into position, over the ridge batten brackets, leaving approximately 45mm between the rafter apex and the tiling batten to ensure 75mm of ridge tile overlap (Fig. 2, page 189).

For RidgeFast bracket settings, see page 194.

- 3 Place the ridge batten(s) along length of ridge between the perforated straps of ridge batten brackets. Bend over the straps and nail each securely to the ridge batten using the nails supplied. Joints in ridge batten should be made half way across a ridge batten bracket to ensure the ends are secured (Fig. 3).

It is recommended that the ridge batten is finished at either end of the ridge, a little

beyond the outer edge of gable end tiles. This will allow for trimming back in accordance with requirements of the chosen ridge end treatment. Where a bedded verge is used, the ridge batten should be cut back by 100mm from the face of mortar.

With the ridge batten(s) secured to the ridge batten brackets at each rafter, lay and fix the roof tiles in the normal manner.

- 4 Unroll RidgeFast roll centrally along entire length of ridge batten and fix at approximately 2 metre centres to ridge batten using felt nails. Overlap roll ends by 100mm at each joint. At gable ends, roll should be able to lap over the edge of gable tile/verge finish by approximately 50mm (where a bedded verge is used it should be cut back by 50mm) (Fig. 4).

- 5 Remove release paper covering mastic strip on underside of corrugations on both sides of roll.

Ensure area of top course tiles to which RidgeFast roll is to be adhered is dry and clean before proceeding (Fig. 5).

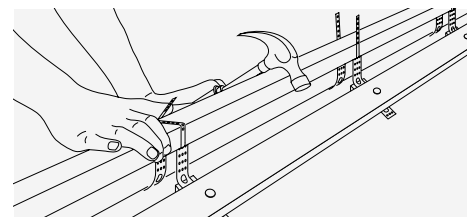


Fig. 3

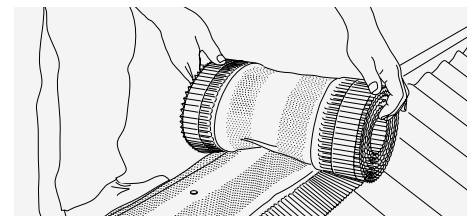


Fig. 4

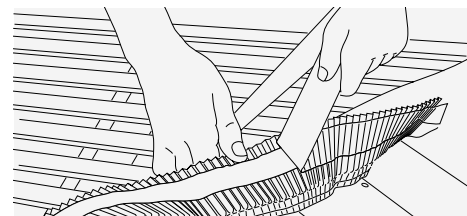


Fig. 5

UNIVERSAL RIDGEFAST SYSTEM

- 6 Firmly press corrugations onto tiles on both sides along length of the ridge. With profiled tiles, it is best to adhere mastic to the top of profile either side of tile pan first, to ensure an even spread of corrugated strip across roof (Fig. 6).
- 7 Lay first ridge tile in correct relative position to gable end and secure to ridge batten, either directly through ridge tile with appropriate fixing, or through ridge end cap.

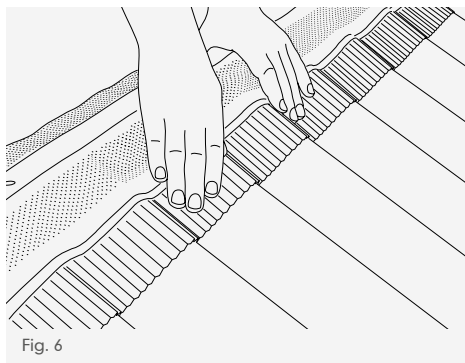


Fig. 6

Select a ridge union, a union clamp and 75mm x 4.8mm s/s screw. Fit a union clamp into the central slot in the ridge union and offer up the assembly into the open end of the ridge tile so that it is trapped between the clamp and the union flange. Ensure it is centrally aligned with the ridge batten. Where the ends of the union overlap the edges of the ridge tile, cut off or fold inward, the excess length along the crease lines at

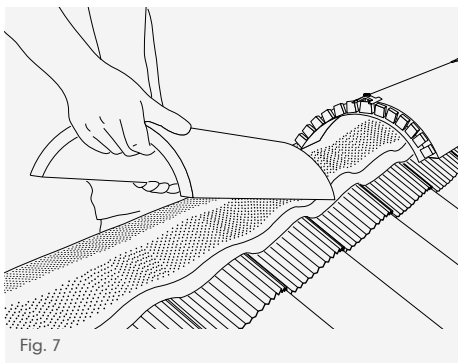


Fig. 7

either end (Fig. 7). Engage the next ridge tile so that it is trapped between the union clamp and ridge union flange.

- 8 When the union clamp is fully engaged in the ridge union, it may create an interference fit with the sub-structure. In this case, the protruding length of the clamp can be snapped off or folded below the ridge union flange (Fig. 8).

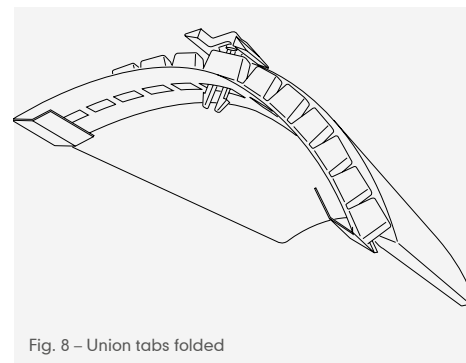


Fig. 8 – Union tabs folded

UNIVERSAL RIDGEFAST SYSTEM

- 9 Push ridge tile firmly into position and secure ridge union assembly to ridge batten by fixing screw through hole in union clamp using a pozidrive No. 2 screw bit (Fig. 9).
- 10 Repeat this process along ridge line, ensuring screws are not over-tightened. The ridge line should be finished with a full-length ridge tile. The minimum length of any cut ridge tile should be no less than 250mm (Fig. 10).

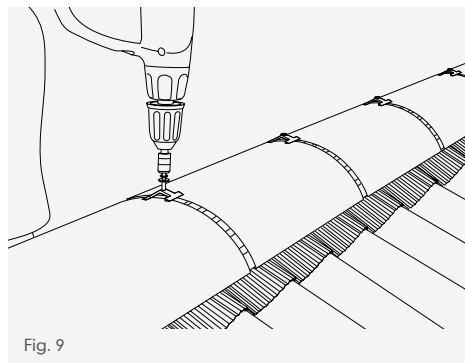


Fig. 9

UNIVERSAL RIDGEFAST WITH MAXIMA AND MELODIE

When using Maxima or Melodie clay interlocking tiles with 457mm concrete segmental ridges, a Block end ridge tile should be used at the gable end.

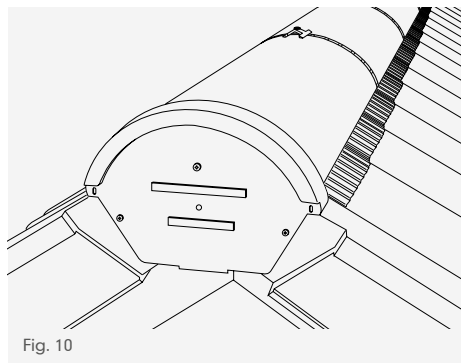


Fig. 10

UNIVERSAL RIDGEFAST WITH LINCOLN AND EDEN

When using Lincoln clay interlocking tiles or Eden Traditional pantiles with 375mm clay half round ridges, a 375mm clay ridge end tile, which is pre-holed for fixing, should be used at the gable ends (Fig. 11).

100mm x 4.8mm screw packs for deep ridges should be used for fixing the union clamps.

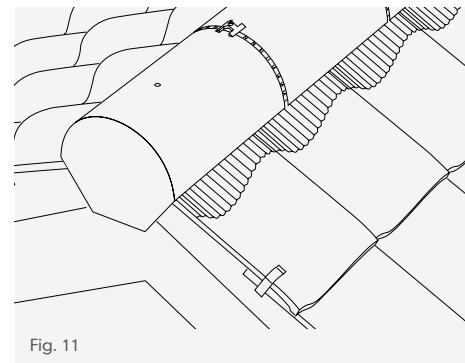


Fig. 11

UNIVERSAL RIDGEFAST SYSTEM

INSTALLATION WITH VENTILATED RIDGE TERMINAL/GAS VENT RIDGE TERMINAL

For both applications, ensure the ridge is covered with segmental ridge tiles to facilitate the fixing of the ridge union clamp.

Where a ridge vent terminal is installed at the ridge it will be necessary to either trim the ridge board or cut the ridge batten to allow the extension box to enter the roof void. Where a gas vent ridge terminal is used, ensure that all timbers are cut to provide a 25mm gap around the flue extension box.

To comply with Building Regulations it is necessary to prevent noxious gases and fumes from entering the roof void from the ridge terminal so the ventilation holes either side of the ridge roll need to be blanked off along a two metre length.

2 metre long x 75mm wide blanking strips available in the ridge vent terminal accessory pack should be used for this purpose.

Cut a hole in the RidgeFast roll to correspond with the position of the ridge vent terminal

extension box. Peel off the backing tape from the blanking strips and apply over the vent holes either side of the RidgeFast roll equidistant about the centre of the terminal. Fit the ridge union and adjacent ridge tiles in the normal manner.

It is recommended that the blanking strips are adhered to the RidgeFast roll on a flat even surface prior to offering to the roof. This will help to provide a secure, even bond.

RIDGE ABUTMENTS

At an abutment, ensure the RidgeFast roll is turned up the wall by 75mm, with the end ridge tile drilled and screw fixed. A Code 4/5 lead saddle should be fitted over the ridge tile in accordance with LSA recommendations.

JUNCTIONS

At ridge/hip junctions, the ridge batten should be cut 50mm beyond the apex of the hip rafters and the ridge. Turn down the RidgeFast roll over the top of the roof tiles on the hip end by 75mm. A code 4/5 lead saddle should be fitted between the

RidgeFast roll and the ridge/hip tiles, with a welt formed along the edges under the ridge and hip tiles. The end ridge tile should be cut to a neat mitre with the hip tiles mechanically fixed (see gable end fixing).

Where an 'L shaped' junction occurs, ensure that the RidgeFast roll is lapped prior to the lead saddle being fitted. Form a welt along the edges of the lead saddle where it is fitted under the ridge and hip tiles. Mitre cut the end ridge tiles prior to fixing with screws and washers.

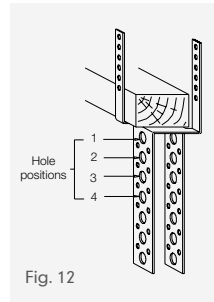
Where a 'T shaped' ridge junction occurs, or where a dormer ridge intersects the main roof, the RidgeFast construction should not cross the valley. A lead saddle (Code 4/5) should be fitted prior to the roof tiles being laid. The RidgeFast roll should be rolled out along the head of the T shape, with the corrugated edge stuck to the surface of the lead saddle (Code 4/5). The RidgeFast roll on the leg of the 'T' shaped junction or dormer intersection, should finish 50mm back from the face of any mortar bedding. The end ridge tile should be mechanically fixed.

UNIVERSAL RIDGEFAST SYSTEM

BATTEN HEIGHT SETTING*

The first figure gives ridge batten height (in mm), figure in brackets gives hole positions at which ridge batten bracket legs are bent to fix to rafter

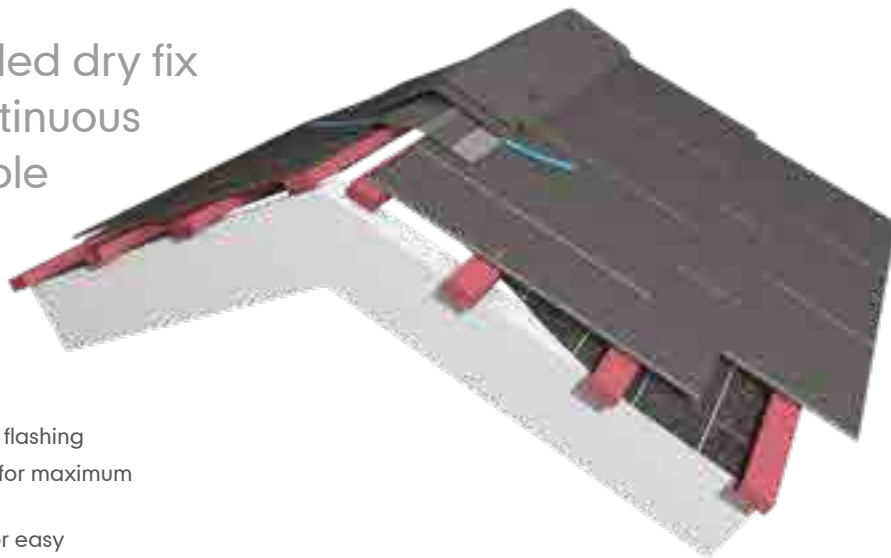
Tile	Ridge type	Roof pitch											
		12.5°	15°	17.5°	22.5°	25°	30°	35°	40°	45°	50°	55°	60°
Anglia	Segmental Ridge			50 (4)	50 (3)	50 (3)	50 (3)	50 (3)	50 (2)	50 (2)	50 (1)	50 (1)	50 (1)
Ashmore	Segmental Ridge				50 (1)	50 (1)	50 (1)	50 (1)	25 (1)	25 (1)			
	Modern Ridge				50 (1)	50 (1)	50 (1)	50 (1)	25 (1)	25 (1)			
Concrete Plain	Segmental Ridge							50 (2)	50 (1)	50 (1)	25 (1)	25 (1)	25 (1)
	Modern Ridge							50 (1)	50 (1)	25 (2)	25 (1)	25 (1)	
Double Roman	Segmental Ridge			50 (3)	50 (2)	50 (2)	50 (2)	50 (1)	50 (1)	25 (2)	25 (1)	25 (1)	
Eden	Segmental Ridge				50 (3)	50 (3)	50 (3)	50 (3)	50 (2)	50 (2)	50 (1)	50 (1)	50 (1)
Edgemere range	Segmental Ridge			50 (2)	50 (1)	50 (1)	50 (1)	50 (1)	25 (1)	25 (1)	25 (1)		
	Modern Ridge			50 (2)	50 (1)	50 (1)	50 (1)	50 (1)	25 (1)	25 (1)			
Fibre cement slates	Segmental Ridge		50 (1)	50 (1)	50 (1)	50 (1)	50 (1)	25 (1)	25 (1)	25 (1)			
	Modern Ridge		50 (1)	50 (1)	50 (1)	50 (1)	25 (1)	25 (1)					
Lincoln	Segmental Ridge			50 (4)	50 (3)	50 (3)	50 (3)	50 (3)	50 (2)	50 (2)	50 (1)	50 (1)	50 (1)
Ludlow Major	Segmental Ridge			50 (2)	50 (2)	50 (2)	50 (2)	50 (1)	50 (1)	25 (1)	25 (1)	25 (1)	
	Modern Ridge			50 (2)	50 (2)	50 (2)	50 (1)	50 (1)	50 (1)	25 (1)	25 (1)		
Ludlow Plus	Segmental Ridge				50 (2)	50 (2)	50 (1)	50 (1)	50 (1)	25 (1)	25 (1)		
	Modern Ridge				50 (2)	50 (2)	50 (1)	50 (1)	25 (1)	25 (1)			
Maxima	Segmental Ridge				50 (2)	50 (2)	50 (2)	50 (2)	50 (1)	50 (1)	25 (1)	25 (1)	25 (1)
Melodie	Segmental Ridge	50 (4)	50 (4)	50 (4)	50 (3)	50 (3)	50 (3)	50 (3)	50 (2)	50 (2)	50 (1)	50 (1)	50 (1)
Mendip/Wessex	Segmental Ridge		50 (3)	50 (3)	50 (3)	50 (3)	50 (2)	50 (2)	50 (1)	50 (1)	50 (1)	25 (1)	25 (1)
	Modern Ridge		50 (3)	50 (3)	50 (3)	50 (2)	50 (2)	50 (2)	50 (1)	50 (1)			
Modern/Duo Modern	Segmental Ridge			50 (2)	50 (2)	50 (2)	50 (1)	50 (1)	25 (1)	25 (1)	25 (1)		
	Modern Ridge			50 (2)	50 (1)	50 (1)	50 (1)	25 (2)	25 (1)	25 (1)			
Natural slates	Segmental Ridge		50 (1)	50 (1)	50 (1)	50 (1)	50 (1)	25 (1)	25 (1)	25 (1)			
	Modern Ridge		50 (1)	50 (1)	50 (1)	50 (1)	25 (1)	25 (1)					



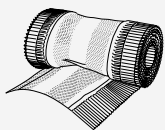
* Please note that this table is a guide only – not site specific – based on the requirement to provide a minimum 15mm penetration as stated in BS 5534. For further information please contact our technical team on the following 01283 722330.

UNIVERSAL RIDGE ROLL FOR SLATES

A simple and rapidly installed dry fix system providing 5mm continuous ridge ventilation. Compatible with fibre cement and natural slates when using fibre cement ridges.



COMPONENTS



Universal
Ridge Roll (6m)
(390mm wide)
(code 33010)

Also available:
60mm x 14 gauge
self-tapping screws

- ▲ Highest grade aluminium flashing
- ▲ Hydrophobic membrane for maximum weather resistance
- ▲ Elastomeric membrane for easy installation and prevents rucking
- ▲ Maintenance free
- ▲ Can be used for ridges and hips
- ▲ Completely dry fixed system
- ▲ Provides 5mm continuous ventilation along the ridge

UNIVERSAL RIDGE ROLL FOR SLATES

INSTALLATION

- 1 Lay the underlay along the ridge apex of the roof ensuring a 5mm clear air gap is maintained between the top edges.
- 2 Fix the top course slate batten to suit the gauge of the slate size being used and fix an additional ridge fix batten downslope to enable the 60mm x 6.3mm self-sealing wood screw fixings to penetrate the ridge unit 50mm from its bottom edge.
- 3 Head nail the top course slates to the top battens either side of the ridge apex, ensuring a 5mm clear gap is maintained between the top edges.
- 4 Unroll a 6 metre length of fibre cement slate ridge roll centrally along the length of the ridge apex. (At gable ends the roll should overlap the gable end by approximately 50mm or in the case of a mortar bedded verge cut back 50mm from the gable).
- 5 Remove the release paper covering the mastic strip on the underside of the corrugations on both sides of the roll and press the corrugations onto the top course slates either side of the ridge line.
IMPORTANT: Ensure the area of slates onto which the mastic strips will be adhering is thoroughly dry and dust free.
- 6 Repeat this process along the entire length of ridge overlapping the roll ends by 100mm at each joint.

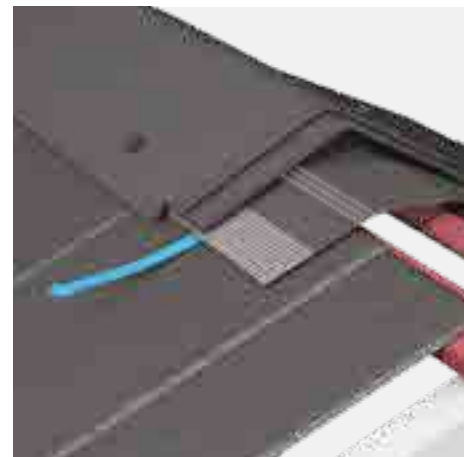
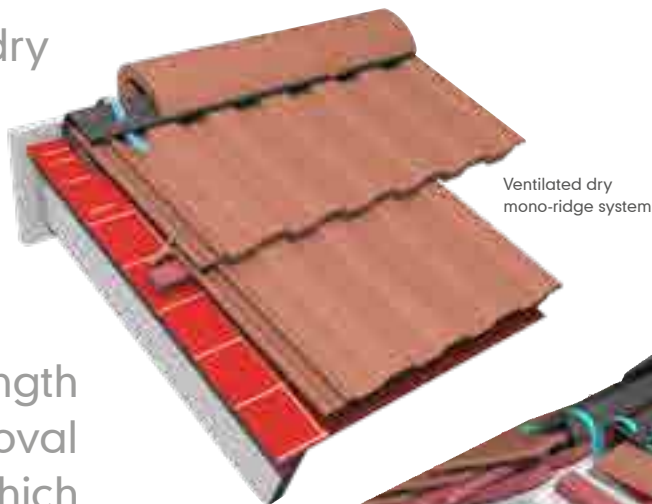


Fig. 1 – Universal Ridge Roll

VENTILATED DRY RIDGE AND DRY MONO-RIDGE SYSTEM

The Marley ventilated dry ridge system remains one of the simplest, aesthetically pleasing and effective means of providing continuous ventilation along the length of the ridge for the removal of stagnant, moist air which would otherwise be trapped in the roof apex.



Ventilated dry
mono-ridge system

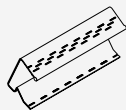


Ventilated dry ridge system



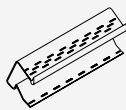
VENTILATED DRY RIDGE SYSTEM

COMPONENTS



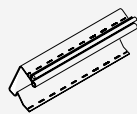
High profile batten section (3m long)

for Mendip, Wessex, Double Roman, Anglia (code 41201)



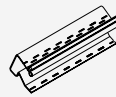
Low profile batten section (3m long)

for Modern, Duo Modern, Ludlow Major, Ludlow Plus, Edgemere range and Ashmore (code 41101)



Steep pitch high profile batten section 45-55° (3m long)

for Mendip, Wessex, Double Roman, Anglia (code 41202)



Steep pitch low profile batten section 45-55° (3m long)

for Modern, Duo Modern, Ludlow Major, Ludlow Plus, Edgemere range and Ashmore (code 41102)



Modern ridge junction apex cap

(code 440*)



Segmental ridge junction apex cap

(code 439*)



Modern ridge union

(code 414*)



Segmental ridge union

(code 413*)



Segmental mono-ridge union

(code 423*)



Modern/Segmental ridge adaptor union

(code 420*)

Vented filler units

Double Roman (code 42105)

Modern/Edgemere/ Ashmore (code 41501)

Ludlow Major (code 41601)

Ludlow Plus (code 41508)

Mendip (code 41701)

Wessex (code 41901)

Anglia (code 41506)

Fibre cement slate

(code 41705)

Dry ridge fixing kit

Kit contains:

16 No. nails, 2 No. H sections, 2 No. screws

(code 4100)

Top course clip and nail pack

(Modern/Duo Modern code 30273

Edgemere range code 30297)

* Use colour code suffix: 01 - Grey, 03 - Brown, 04 - Terracotta.

VENTILATED DRY RIDGE SYSTEM

INTERLOCKING TILES INSTALLATION

- 1 Cut batten section with a fine-toothed saw with ends of sections at joints meeting halfway over a rafter, so each end can be nailed (Fig. 1).
- 2 Provide overhang of 55/60mm (dependent on unit) at verges to allow fitting of top course Marley interlocking dry verge unit and end caps.
- 3 Use a ridge tile for setting out the batten sections to ensure they are the required distance to suit ridge tile and positioned equidistantly apart.
- 4 Free ends of batten section can be restrained by either fitting a ridge union or second gauge (Figs. 2 and 3).
- 5 Nail batten sections to each rafter, taking care gauge position is constantly checked.
- 6 Join batten section over a rafter and clip an 'H' section piece, provided in the fixing kit, over top flanges before nailing.

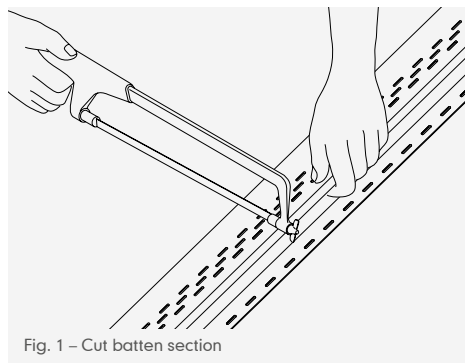


Fig. 1 – Cut batten section

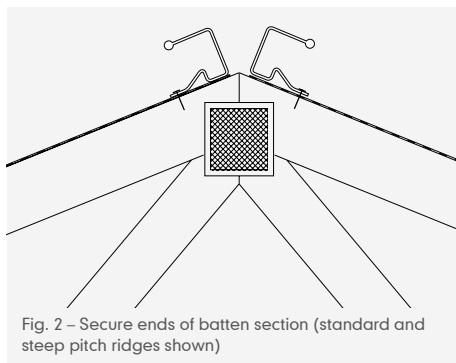


Fig. 2 – Secure ends of batten section (standard and steep pitch ridges shown)

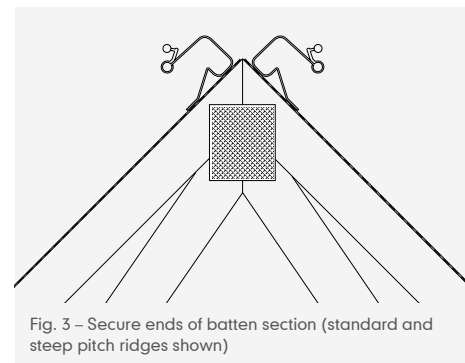


Fig. 3 – Secure ends of batten section (standard and steep pitch ridges shown)

Wherever possible, stagger joints on opposite sides of roof. Underlay must be slit to provide 5mm gap between batten sections along roof apex to allow free passage of air to and from roof space below (Fig. 4).

Note: Allow a 12.5mm gap between each 3m length of batten section. Form fire breaks where necessary and fill the space beneath the ridge tile spanning the party wall with suitable non-combustible material.

- 7 Place appropriate ridge filler unit onto head of tile.

VENTILATED DRY RIDGE SYSTEM

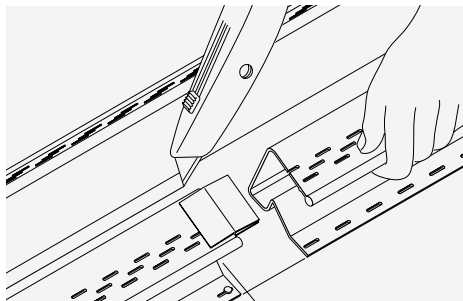


Fig. 4 – Slit underlay between batten sections and clip using 'H' section piece

- 8 Insert tile with filler unit into batten section by lifting top flange slightly until ribs engage over upstand and tile is held securely. (The ridge filler unit for Modern has raised lugs which fit beneath circular beads on batten sections) (Fig. 5).
- 9 Ensure each tile is mechanically fixed by using a standard tile clip located over side lock and nailed to top edge of second course tiling batten (Fig. 5).

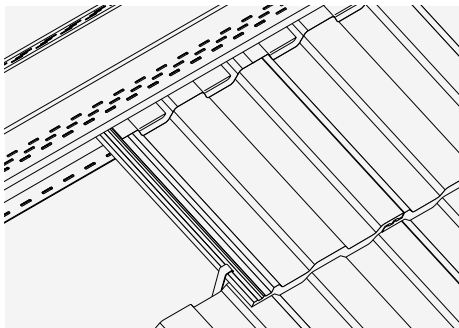


Fig. 5 – Clip top course interlocking tiles

- 10 When using Modern/Duo Modern/Edgemere range interlocking slates, fit a standard eaves clip. Secure to top of interlock of all top course slates where they are located into dry ridge batten section. Nail eaves clip to a timber batten fixed directly below lower flange of batten section, ensuring clip locates over sidelock.

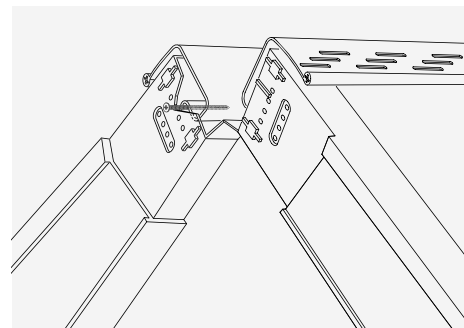


Fig. 6 – Insert verge unit with previous unit

- 11 Complete verges.
- 12 For the Marley Universal dry verge system, top course verge unit is retained by inserting a screw into second series of holes in verge unit and locating unit behind mid section of dry verge batten (Fig. 6)

VENTILATED DRY RIDGE SYSTEM

- 13 For bedded verges, cut back lower flange of each dry ridge batten by approx. 50mm.

Lay undercloak under flange and bed tiles in normal manner (Fig. 7). Where a PVC end cap is used (see Fig. 8).

- 14 For bedded verges, cut back lower flange of each dry ridge batten by approx. 50mm.

Lay undercloak under flange and bed tiles in normal manner (Fig. 7). Where a PVC end cap is used (see Fig. 8).

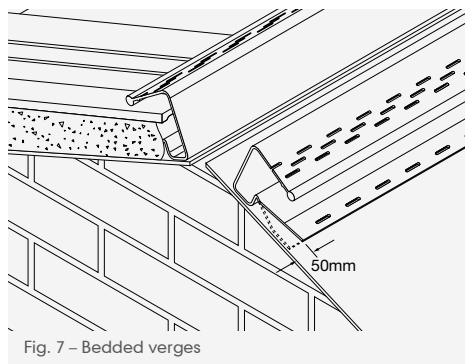


Fig. 7 – Bedded verges

- 15 Screw Ridge end cap to end of Marley dry ridge batten, locating stainless steel screws (supplied in fixing kit) in end of circular beads on upper flange (Fig. 8).

- 16 When fixing with slates, use a standard dry verge end cap to suit ridge profile, but cut lower flange along visible guide line on inside to reduce effective overhang (Fig. 9).

- 17 Cut lower flange across width (Fig. 9) where necessary, to avoid interference with dry verge units. This will always

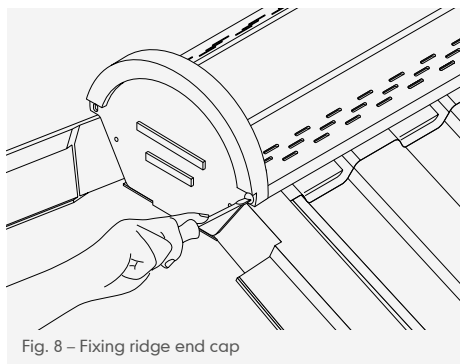


Fig. 8 – Fixing ridge end cap

be the case for use with steep pitch roof apexes.

- 18 Lay ridge tiles with each leg sitting on top of circular bead, with a gap of 3mm approx. between each ridge tile. This allows clearance for internal lugs of ridge union.

- 19 Fit ridge union by clipping each end over circular beads (Fig. 10, page 202).

Fix any cut ridge tiles adjacent to full end ridge tiles.

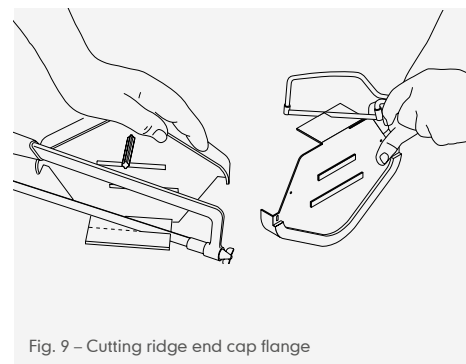


Fig. 9 – Cutting ridge end cap flange

VENTILATED DRY RIDGE SYSTEM

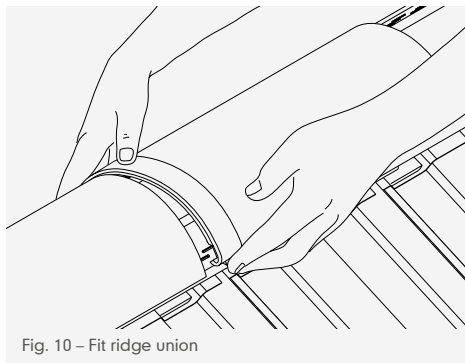


Fig. 10 – Fit ridge union

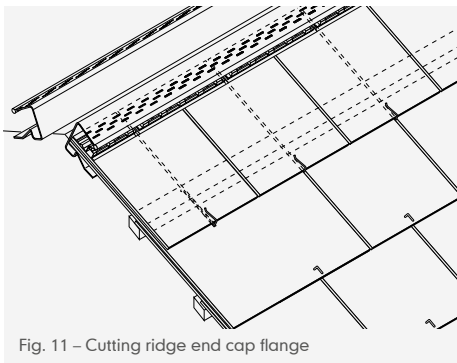


Fig. 11 – Cutting ridge end cap flange

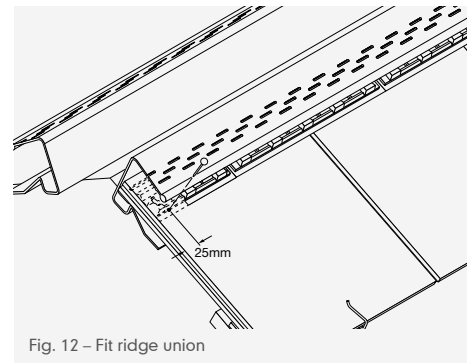


Fig. 12 – Fit ridge union

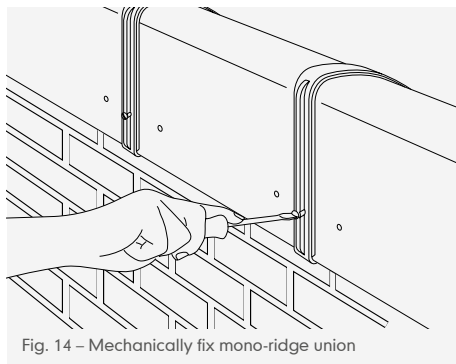
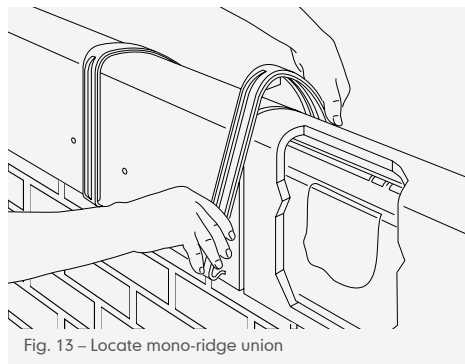
FIBRE CEMENT SLATE INSTALLATION

- 1 Lay slates up to dry ridge batten so back edge of top full length slate engages into batten section.
- 2 Centre nail to top batten in normal way.
- 3 For slate-and-a-half abutting verge, cut a 3mm wide slot parallel to verge from the head of slate down to point where leading edge of top course slate will be (Fig. 11).
- 4 Make slot a half slate width in from verge to allow for hook fixing standard width slate above.
- 5 Drive slate hook into top timber batten between each full length slate (provided by others).
- 6 Slide top course slates (cut to length) into place so leading edges are retained centrally by slate hooks.
- 7 Back edge of top course slates should touch inside edge of ridge batten section.
- 8 Place ridge filler units in position, trapped between top slate and top edge of batten section, butted together along length of ridge.
- 9 For mortar bedded verges, hips and valleys drill a 4mm diameter hole through top two courses as shown (Fig. 12) 25mm from verge and insert a copper slate nail.
- 10 Ridge filler unit should cover nail head, preventing internal movement of top course slate.

VENTILATED DRY MONO-RIDGE SYSTEM

MONO-RIDGE INSTALLATION

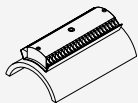
- 1 Nail front edge of batten section to each rafter 150mm from vertical face of timber fascia for a roof at 35° (this will vary slightly, dependent upon roof pitch).
- 2 Continue to install dry ridge system.
- 3 Complete all verges, where necessary (see Marley Universal dry verge fixing instructions) and fit segmental mono-dry ridge end cap, if required.
- 4 Lay mono-ridge tiles with front leg sitting on top of circular bead with a gap of approximately 3mm between each tile to allow clearance for locating tongues of mono-ridge union.
- 5 Fit ridge unions by clipping front end over circular bead of batten section, followed by back end over bottom edge of mono-ridge tile (Fig. 13).
- 6 Secure any cut tiles adjacent to end ridge tiles, which should be full tiles.
- 7 Mechanically fix each mono-ridge union by using a 25mm x 10 gauge stainless steel screw (supplied with ridge tile) fixed to a timber fascia behind vertical leg (Fig. 14).



RIDGE VENT TERMINALS

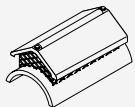
Provides mechanical or passive stack ventilation.

COMPONENTS



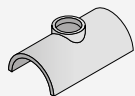
Ridge vent terminal

For natural ventilation of the roof void apex and connection to mechanical ventilation systems.



Gas vent ridge vent terminal

For connection to gas appliances of rated input of 60 Kw max. only (not suitable for gas condensing boilers or oil fired boilers.)



Gas vent ridge terminal for condensing boilers



RIDGE VENT TERMINALS

GENERAL INSTALLATION GUIDANCE

Marley ridge ventilation terminals should be installed in a horizontal position clear of any obstructions which may hinder the airflow of exhaust fumes. Terminals must be positioned as follows:

- Gas vent ridge – min. 300mm apart.
- Ridge vent – min. 600mm away from any Gas vent ridge terminal or flue outlet.

RIDGE BOARDS

If a ridge board is used, it should be cut away for a length of 400mm and if any rafters are to be cut, trimmers should be provided. The roofing underlay should be neatly cut to provide a close fit to the sides of the riser (with the gas vent ridge the top batten and underlay must be cut a min. 25mm away from the riser).

RIDGE TERMINALS

Marley ridge terminals can be bedded to the roof tiles in the normal manner or may be incorporated in the Marley dry ridge system. Where Modern ridge tiles are used

in a dry ridge construction, special Modern/Segmental ridge adaptor units should be used to connect the terminals to the ridge tiles (dry ridge system only, not suitable for RidgeFast).

CONCRETE GAS VENT AND RIDGE VENT TERMINALS

- 1 Cut a slot in the back of the batten section to allow the terminal throat extension to clear the base of the section.
- 2 Seal the slots in the top flange of the batten section for a distance of 2000mm both sides of the ridge below the terminal using the RidgeFast blanking tape (Code 33001). This is to prevent the ingress of exhaust fumes from the terminal entering the roof space.
- 3 Mechanically fix the ridge vent terminal to the batten section using the appropriate Ridge Union. Where Modern ridge tiles are used, special Modern/Segmental Ridge Adaptor Unions should be used to mechanically fix the terminals to the ridge batten section

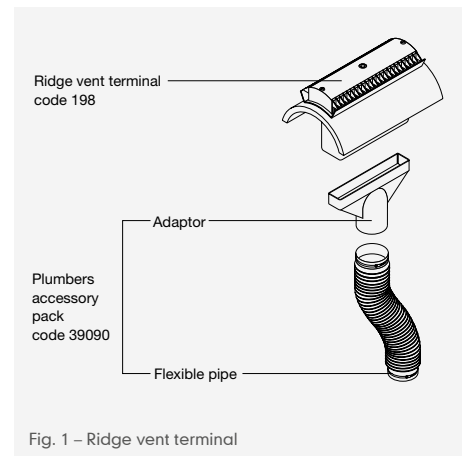


Fig. 1 – Ridge vent terminal

RIDGE VENT TERMINALS

GAS VENT RIDGE TERMINAL

- 1 Connect flue using a metal 'R' type adaptor of suitable diameter, which is bolted to flange provided at base of throat extension (supplied by others).

- 2 Place gasket of suitable material between throat section extension and 'R' type adaptor and compress sufficiently, using bolts to form gas tight seal.

Throat extension allows easy connection of flue after ridge terminal has been installed.

- 3 Make provision to support flue pipe in accordance with requirements of BS 5440: Part 1.
- 4 Align exactly with ridge terminal to prevent undue stress at joints.
- 5 Do not hang unsupported flues from ridge terminal, or damage could occur to ridge terminal and adjacent tiling and seal between ridge tile and flue could be broken.

RIDGE VENT TERMINAL FOR ROOF SPACE VENTILATION

- 1 Install terminal in normal manner ensuring riser is kept free of all obstructions.

RIDGE VENT TERMINAL FOR MECHANICAL VENTILATION

- 1 The mechanical services engineer should connect the 110mm pipework.
- 2 Push flexible pipe over spigot end of adaptor and secure using jubilee clips.
- 3 Ensure that all ductwork is adequately supported to prevent strain being transmitted to ridge terminal.

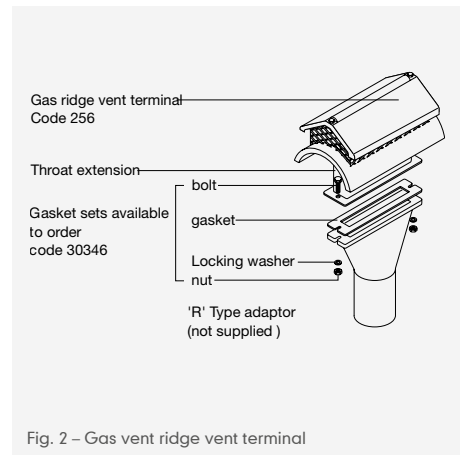


Fig. 2 – Gas vent ridge vent terminal

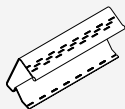
TOP ABUTMENT VENTILATION SYSTEM

The Marley top abutment ventilation system has been developed to provide high level ventilation at the apex of lean-to roofs where they abut a vertical wall. Completely weatherproof, this continuous system provides eaves-to-apex ventilation when combined with the Marley eaves ventilation system.



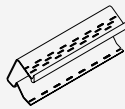
TOP ABUTMENT VENTILATION SYSTEM

COMPONENTS



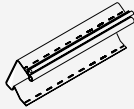
High profile batten section (3m long)

for Mendip, Wessex, Double Roman, Anglia (code 41201)



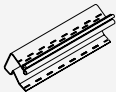
Low profile batten section (3m long)

for Modern, Duo Modern, Ludlow Major, Ludlow Plus, Edgemere range and Ashmore (code 41101)



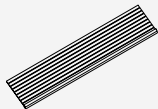
Steep pitch high profile batten section 45-55° (3m long)

for Mendip, Wessex, Double Roman, Anglia (code 41202)



Steep pitch low profile batten section 45-55° (3m long)

for Modern, Duo Modern, Ludlow Major, Ludlow Plus, Edgemere range and Ashmore (code 41102)



Abutment vent lead support strip (1.5m x 21.5cm) (code 42505)

Vented filler units

Double Roman (code 42105)
Modern/Edgemere/Ashmore (code 41501)
Ludlow Major (code 41601)
Ludlow Plus (code 41508)
Mendip (code 41701)
Wessex (code 41901)
Anglia (code 41506)
Fibre cement slate (code 41705)



Fixing Kit

Kit contains:
16 No. Nails, 2 No. Screws,
2 No. 'H' Section
Sufficient to fix:
2 No. 3m lengths (code 41000)

Top course clip and nail pack

Modern and Duo Modern (code 30273)
Edgemere and Duo Edgemere (code 30297)

TOP ABUTMENT VENTILATION SYSTEM

INSTALLATION

- 1 Felt and batten roof in normal way but do not return felt up abutment wall (Fig. 1).
- 2 A gap of 5mm to 10mm should be left to allow air flow from roof void.
- 3 Cut a small piece of lead support to use as a guide to setting out uPVC batten section. Lead support strip should coincide with a mortar joint above line of tiling and leave a gap not less than 5mm between batten section and wall (Fig. 2).
- 4 Lead support should not be in contact with top flange of batten section, otherwise ventilation flow will be affected.

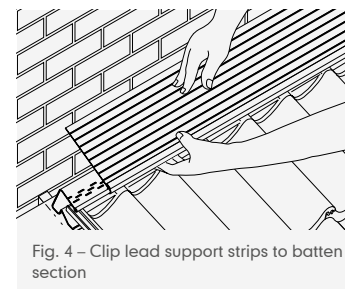
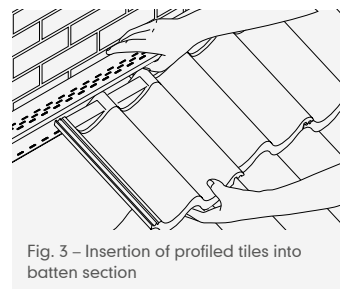
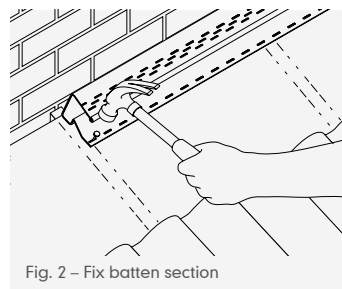
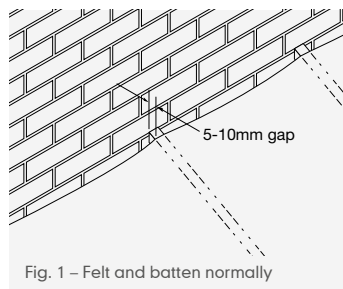
- 5 Roof is tiled in normal way and top course tiles/slates with their respective fillers fitted into batten section (Fig. 3).
- 6 Ensure each top course tile is clipped or each top course slate is secured by a hook.

INTERLOCKING TILES AND SLATES

- 1 Complete main roof tiling/slating in the normal manner. Insert tile with filler unit into batten section by lifting top flange slightly until nibs engage over upstand and tile is held securely.

(The ridge filler unit for Modern has raised lugs which fit beneath circular beads on batten sections) (Fig. 3).

- 2 Ensure each tile is mechanically fixed by using a standard tile clip located over side lock and nailed to top edge of second course tiling batten.
- 3 Clip lead support strips to batten section so that free edge rests in mortar joint previously identified (Fig. 4).
- 4 A gap of about 5mm should be left between successive lengths of lead support to allow for thermal expansion.
- 5 Dress Code 4 lead or similar flashing material, over lead support strip and fit front edge into integrated retaining channel on front edge support (Fig. 5, page 210).



TOP ABUTMENT VENTILATION SYSTEM

- 6 Wedge hip edge of lead into mortar joint as required by the Lead Sheet Association.
- 7 Ensure laps are staggered to support the unit.
- 8 At verge, dress lead flashing down over verge, turn around corner of wall and secure in a mortar joint with lead wedges.
- 3 For slate-and-a-half abutting verge, cut a 3mm wide slot parallel to verge from the head of slate down to point where leading edge of top course slate will be (Fig. 6).
- 4 Make slot a half slate width in from verge to allow for hook fixing standard width slate above.
- 5 Drive slate hook into top timber batten between each full length slate (provided by others).
- 6 Slide top course slates (cut to length) into place so leading edges are retained centrally by slate hooks.

- 7 Back edge of top course slates should touch inside edge of ridge batten section.
- 8 Place ridge filler units in position, trapped between top slate and top edge of batten section, butted together along length of ridge.
- 9 For mortar bedded verges, hips and valleys drill a 4mm diameter hole through top two courses as shown (Fig. 7) 25mm from verge and insert a copper slate nail.
- 10 Ridge filler unit should cover nail head, preventing internal movement of top course slate.

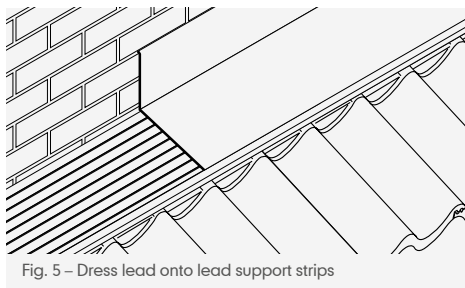


Fig. 5 – Dress lead onto lead support strips

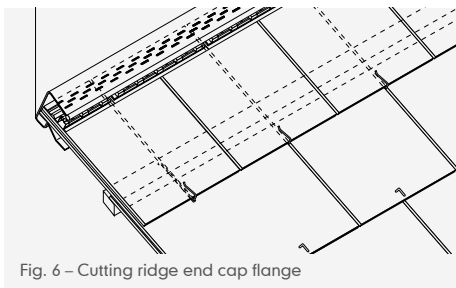


Fig. 6 – Cutting ridge end cap flange

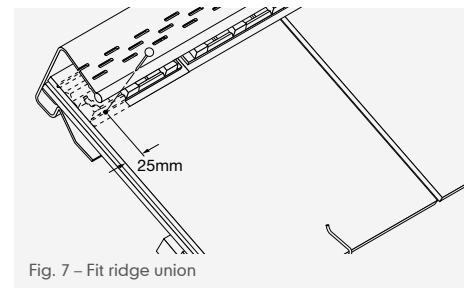


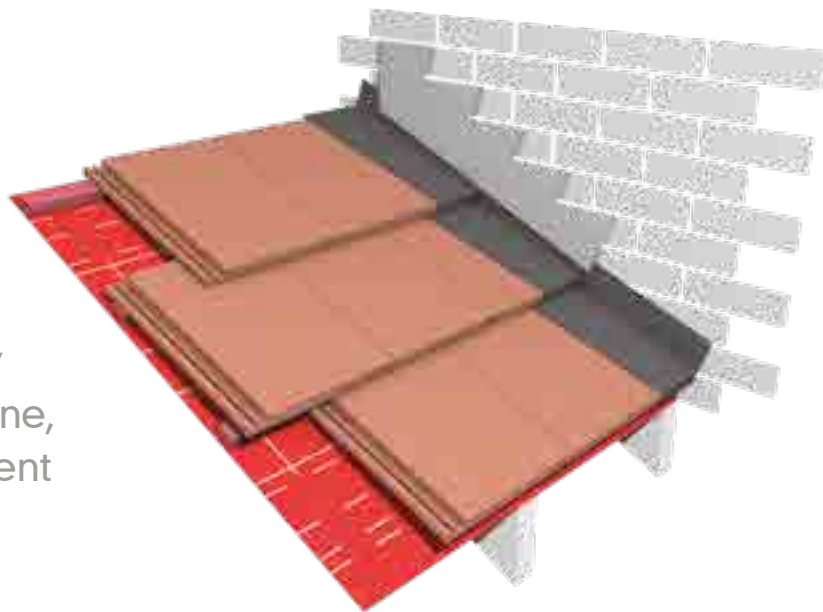
Fig. 7 – Fit ridge union

INDIVIDUAL DRY SOAKERS

The Marley range of individual dry soakers are an easy to install, lightweight and highly affordable way to reduce both the material and labour costs associated with lead at side abutments.

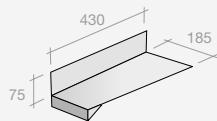
Manufactured from a high density and high performance polypropylene, the dry soaker range offers excellent thermal stability, and resistance to UV light, acid rain and cracking under temperature change.

For full details on the use of lead soakers and weatherings, please see pages 24-31.



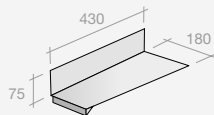
INDIVIDUAL DRY SOAKERS

COMPONENTS



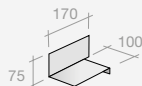
Modern
interlocking tiles
dry soaker

(LH code 30476)
(RH code 30477)



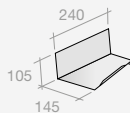
Edgemere
interlocking tiles
dry soaker

(LH code 30474)
(RH code 30475)



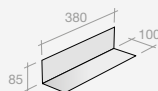
Clay or concrete
plain tiles
dry soaker

(LH code 30478)
(RH code 30479)



Ashmore
interlocking tiles
dry soaker

(LH code 30472)
(RH code 30473)



Fibre cement slates
dry soaker
(For both left and right
hand code 30480)

GENERAL INSTALLATION

- 1 Lay the roofing underlay and turn up against the abutment by 100mm
- 2 Fit battens leaving a small gap to the abutment.

EDGEMERE AND MODERN TILES

- 1 Push fit the soakers on to the tiles and lay the tiles along the abutment in the normal manner.
- 2 When all soakers are installed, the preformed 75mm upstand can be covered using a stepped lead flashing in the traditional manner.

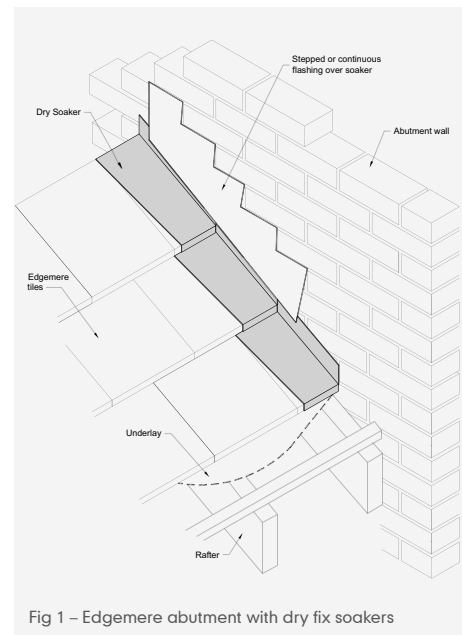
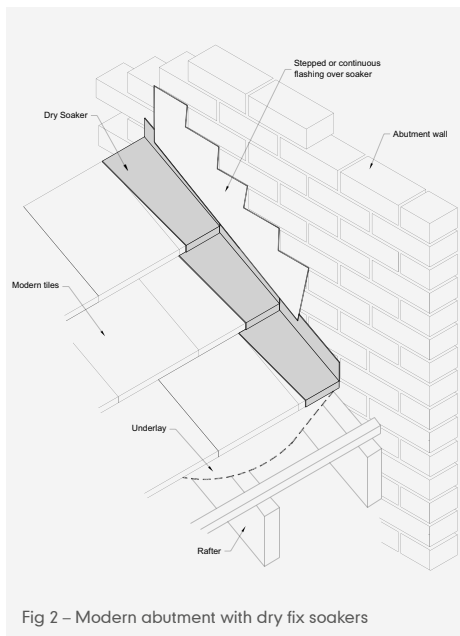


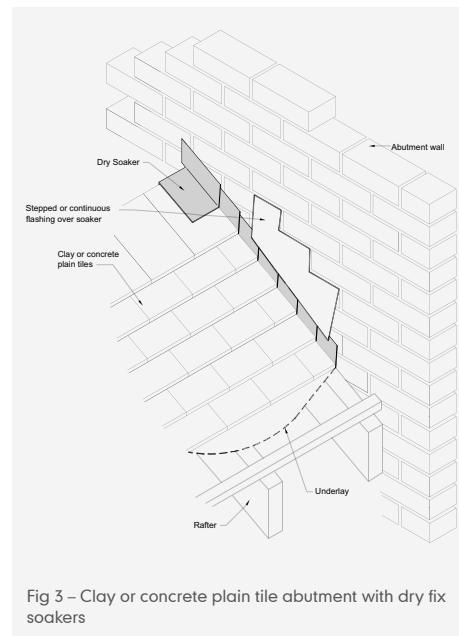
Fig 1 – Edgemere abutment with dry fix soakers

INDIVIDUAL DRY SOAKERS



CLAY OR CONCRETE PLAIN TILES

- 1 Plain tile soakers are laid on top of each consecutive abutment tile with the 90° turndown locating over the head of the tile, the weight of the following courses of tiles keeping the soaker in position against the abutment.
- 2 The 75mm upstand can be covered using a traditional lead flashing.



INDIVIDUAL DRY SOAKERS

ASHMORE TILES (FIG. 4)

- 1 Install Ashmore tile soakers with the 90° turn-down locating over the rear of the tiling battens – beneath each tile. Install Ashmore abutment tiles over each consecutive soaker unit – the weight of the tiles keeping the soakers in position against the abutment.
- 2 The 105mm upstand can be covered using a traditional lead flashing.

FIBRE CEMENT SLATES (FIG. 5)

- 1 Suitable for use with fibre cement 600mm x 300mm slates. Laid in conjunction with appropriate abutment slates and nailed into position with the slate in accordance with BS 5534.
- 2 The finished soaker upstand can be covered using a traditional lead flashing.

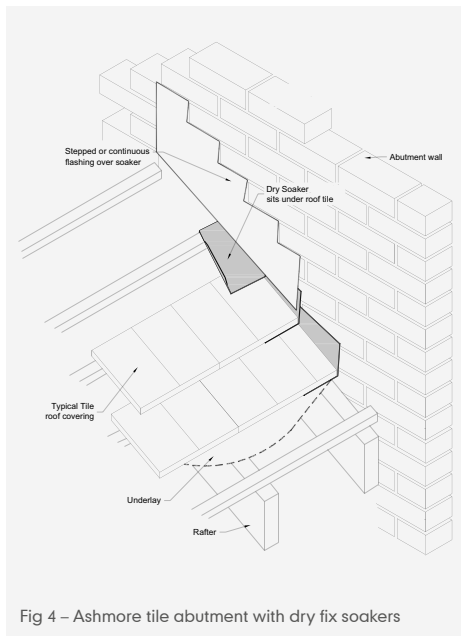


Fig 4 – Ashmore tile abutment with dry fix soakers

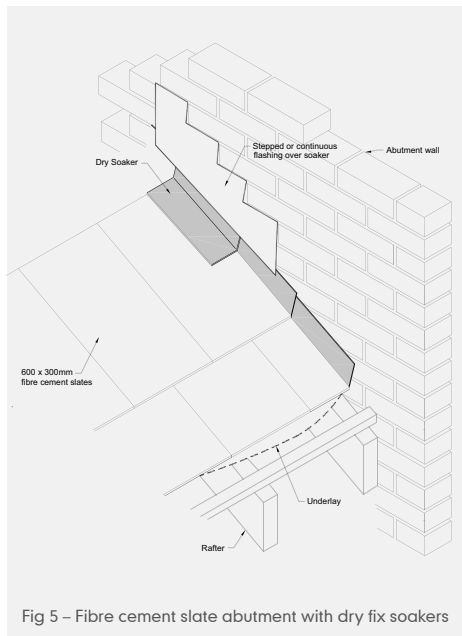


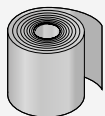
Fig 5 – Fibre cement slate abutment with dry fix soakers

FLEXFAST LEAD REPLACEMENT ROLL

The FlexFast Lead Replacement Roll has been developed as a time saving solution that doesn't require specialist fitting skills. It has excellent aesthetics and rigidity while also being easy and quick to install.



COMPONENTS



FlexFast lead replacement roll

Available in 5m x 300mm rolls (code 42610)
or 5m x 450mm rolls (code 42611).

Butyl tape (code 42612), mastic (code 42614)
and trims (code 42613) are also available.

FLEXFAST LEAD REPLACEMENT ROLL

CHIMNEY FLASHING

The following steps describe how to use Universal lead replacement roll to form a typical chimney flashing. Other types of top and side abutment can be formed using Universal lead replacement roll in a similar way:

- 1 The first step in making a chimney flashing is the fitting at the eaves section. This should be at least 30cm longer than the chimney is wide (Fig. 1).

- 2 Fold the fitting lengthwise in the centre, then fold its edges around both sides of the chimney, keeping it upright. This creates a continuous material edge that prevents leakages. Shape the material using scissors or a cutter. Cut the sides along the front of the chimney and the water-conducting surface of the roofing material, so there is approximately 3cm left on each side. Connect the two cutting lines where they meet, forming a smooth curve (Fig. 2).

Then remove the protective film and shape the wall and chimney flashing tape to the roof covering material.

Because it can be stretched by up to 60%, it can also be easily shaped against more grooved shingles or tiles.

- 3 Now, partially remove the protective film. Fold the 2cm overlap evenly over the corner on the eaves side, creating a frictional connection. One simple fold suffices (Fig. 3).



Fig. 1

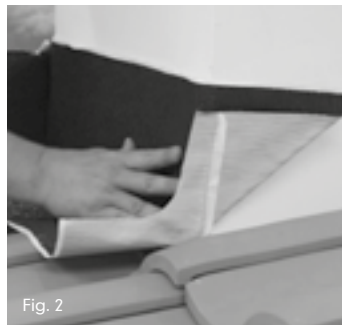


Fig. 2



Fig. 3

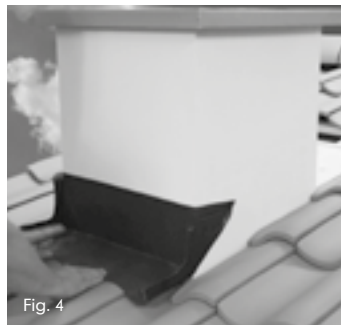


Fig. 4

FLEXFAST LEAD REPLACEMENT ROLL

- 4 When adhering the fitting, make sure to start from the inner edge and work outwards (Fig. 4). This prevents large air pockets from forming. If there is no intact interlocking joint on the roofing material at the chimney, guide the wall and chimney flashing tape over the closest covering bead.
- 5 Attach the ridge-side connection to the previously created roof valley framing (Fig. 5). The cut piece here is the same length as on the eaves side. Depending on the roof slope and appearance,

a double fitting or 450mm wide tape may be necessary.

- 6 Before covering the roof tiles or shingles, also fold the ridge-side fitting approximately 5cm over to create a connection to the roofing (Fig 6.).

The Universal lead replacement roll allows you to quickly, easily and securely create a stable chimney flashing. Since it can be stretched by up to 60%, the material is easy to use for virtually any application.

- 7 Aluminium trims are the finishing touch. Adjust these to the chimney width and roof slope and attach them to the chimney. Then, seal the trims against the upper side.
- 8 You can also use Universal lead replacement roll for wall mounting. When doing so, we recommend working with metal angles that you adjust to the length of each roof tile or shingle. If there is no intact interlocking joint on the wall, please make sure to guide the material over the crest of the closest covering bead as a minimum.

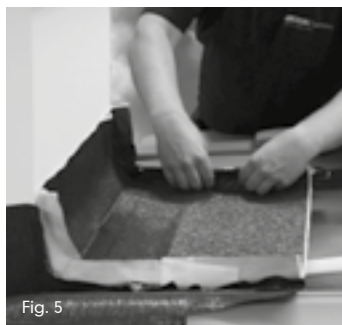


Fig. 5



Fig. 6

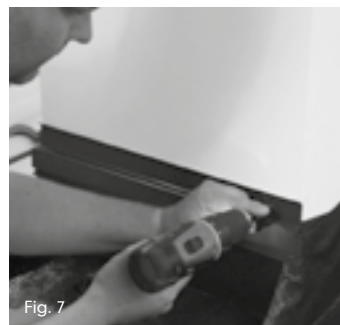


Fig. 7



Fig. 8

UNIVERSAL TILE VENT TERMINAL

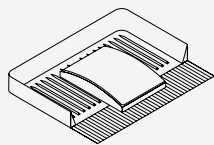
The Universal tile vent is designed for roof void ventilation and connection to 110mm soil pipe or mechanical extract systems.

It is suitable for use with most popular large format and '15 x 9' concrete interlocking tile profiles and Maxima clay double roman tiles at roof pitches 20° and above. Free area: 15,000mm²/m.



UNIVERSAL TILE VENT TERMINAL

COMPONENTS



Universal tile vent
(code 36700)



Flexible pipe
(sold separately)

INSTALLATION

- 1 Lay underlay and batten the roof in the normal manner.
- 2 Lay roof tiles up to the desired position of the vent (ideally mid-span between rafters).
- 3 Form a 'V' shaped cut in the underlay, 270mm long x 140mm wide – aligned with the centre line of the overall width of the tile below – to correspond with the position of the tile vent spigot (Fig. 1).
- 4 Fold up and secure the underlay as shown (Fig. 2).
- 5 Place the tile vent into position centrally over the overall width of the tile below, ensuring the 'nib' is resting squarely against the back face of the tiling batten. Secure the vent tile by nailing through the slot in the 'nib' into the back face of the tiling batten using a 25mm long x 3mm dia. non-corrosive nail (galvanised steel, aluminium or stainless steel) (Fig. 3).

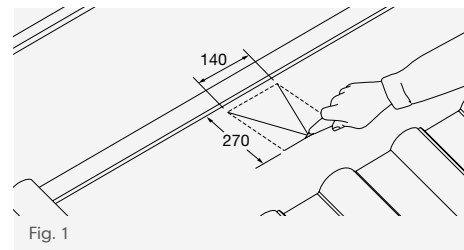


Fig. 1

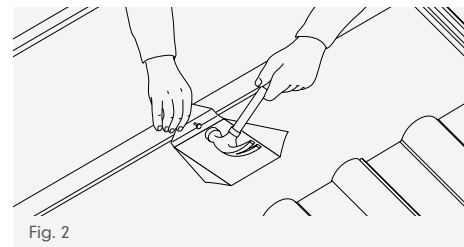


Fig. 2

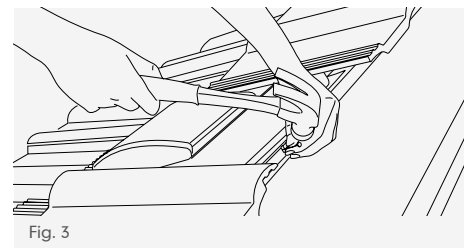


Fig. 3

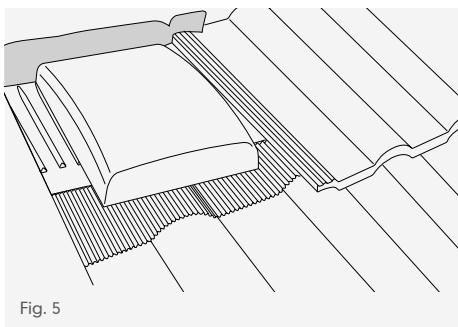
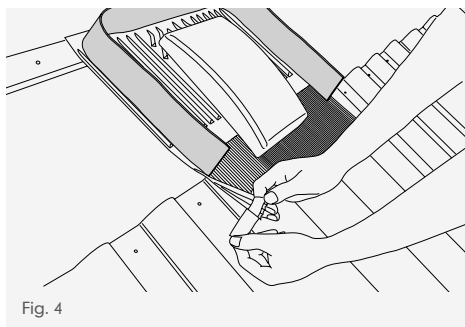
UNIVERSAL TILE VENT TERMINAL

- 6 Peel off the release paper from the mastic along the underside leading edge of the corrugated flashing and press the flashing down evenly, ensuring a good seal against the tiles below. The surface of the tiles to which the mastic is adhered must be dry and free of dust (Fig. 4).
- 7 Finish tiling. The tiles immediately adjacent to the tile vent will compress the foam upstands creating a weatherproof seal. Ensure the cutaway in the back edge of the foam is laid over the lock of the adjacent right hand tile (Fig. 5).

- 8 Tail clip the left hand tile adjacent to the tile vent and the 3 tiles immediately above.

Note: When using '15 x 9' tiles, the underlock of the adjacent right hand tile may be removed to provide more space to accommodate the vent cap.

If the unit is to be used to ventilate the roof void, the circular spigot must be sawn off on site prior to installation to achieve the maximum designed ventilation area. This product is not suitable as an exhaust for hot gases.



TILE VENT TERMINALS

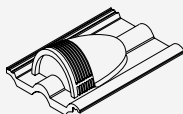
For roof space ventilation, mechanical extract and soil vent pipes.

Tile vent terminals can be used for high or low level ventilation and are also designed for connection to mechanical extract ventilation systems and soil vent pipes.

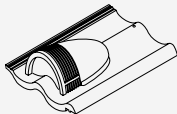


TILE VENT TERMINALS

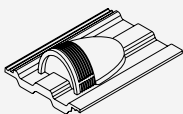
COMPONENTS



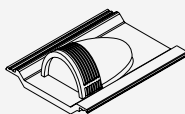
Double Roman*
Vent Terminal
(code 298)



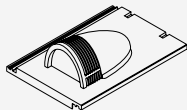
Mendip*
Vent Terminal
(code 294)



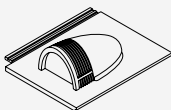
Ludlow Major*
Vent Terminal
(code 297)



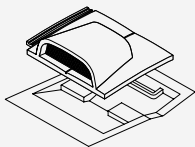
Wessex*
Vent Terminal
(code 296)



Modern*
Vent Terminal
(code 295)



Edgemere*
Vent Terminal
(code 259)



Ashmore ventilation†
roof tile and
catchment tray
(code 263)



Lincoln Clay*
Tile Vent
(Codes:
Natural Red MA123990
Rustic Red MA123991)

PRESSURE RESISTANCE (PA)

Tile	Free area (mm²)	Pa (litres/sec airflow)		
		15	30	60
Ashmore	4500	–	–	–
Double Roman	7614	6.5	24.8	89.1
Edgemere	7081	7.6	28.6	106.7
Ludlow Major	7665	6.7	24.3	88.4
Mendip	7107	7.6	27.9	101.7
Modern	7081	7.6	28.6	106.7
Wessex	6929	7.9	29.7	110.6

See also table on page 239.

* For mechanical extract and soil vent pipe installation use flexible pipe (code 39091).

† For roof ventilation only. Not suitable for mechanical extract and soil vent pipe installation.

TILE VENT TERMINALS

INSTALLATION

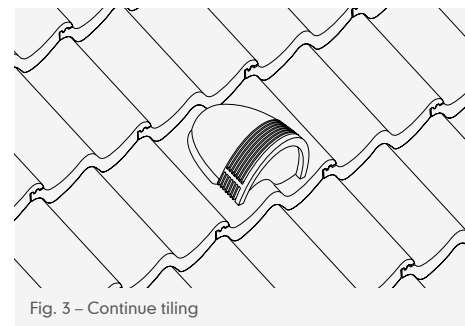
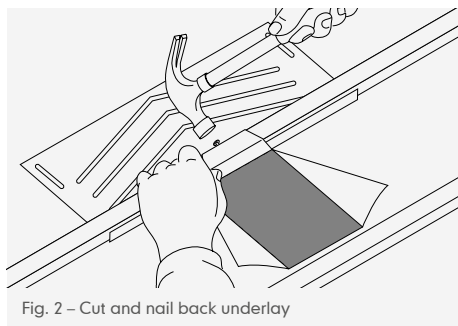
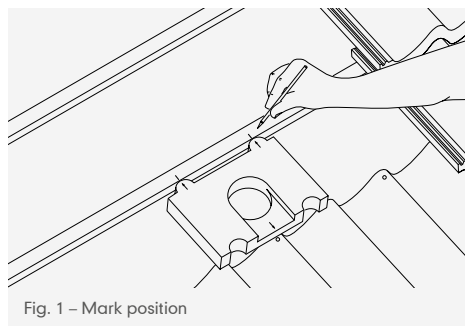
- 1 Locate vent tile clear of rafters and place special polystyrene end spacer marked 'Template' flat onto underlay at desired position (Fig. 1).
- 2 Mark batten with corresponding arrows on template to assist setting out.
- 3 Remove lower course of tiles and replace template flat onto underlay and mark outline of hole.
- 4 Carefully cut out a cross with a sharp knife.
- 5 Make a horizontal cut in the underlay, 390mm long, at a distance 150mm above bottom edge of tiling batten supporting vent tile.
- 6 Slide soaker tray under batten and through slit in underlay.
- 7 Secure soaker tray by folding cut underlay over batten and nail into top edge of tiling batten above (Fig. 2).
- 8 Lay vent terminal ensuring that pipe enters hole cleanly and is fixed in accordance with required fixing specification.

- 9 Lay adjacent tiling in normal manner (Fig. 3).

For Tile vent terminal spacings, see page 239.

Note: Tile vent terminals may be used for termination of mechanical extract systems or soil vent pipes, but must be connected by a plumber. To avoid misalignment problems, connections to 110mm pipework should be carried out using a flexible pipe connector (Code 39091) and any long runs of pipework should be supported to avoid strain on the terminal.

To enable the completed pipework to be tested, the vent grille may be prised out of the concrete hood, to allow an inflatable bag to be used, and replaced later when testing is completed. Where the terminals are used for extraction of soil vent pipes they must not terminate lower than 900mm above any opening into a building within 3m.



TILE VENT TERMINALS

ASHMORE VENTILATION ROOF TILE

The Ashmore ventilation roof tile is designed to provide ventilation of the roof space, either at high or low level and have a colour-matched concrete hood with matt black aluminium grille. Incorporating a standard tile base, the terminal is simply substituted for a standard tile and fixed accordingly. Free area: 3,000mm²/m.

- 1 Select a position for vent tile clear of rafters and lay catchment tray in position. Cut a 170mm gap in the batten to accommodate the catchment tray.
- 2 Mark airway aperture on underlay (Fig. 4).
- 3 Remove catchment tray and cut underlay back to tiling batten to form a flap which should be pulled up so there is a gap of approx. 6mm between underside of batten and underlay.
- 4 Nail flap to top of tiling batten (Fig. 5).
- 5 Lay ventilation tile over catchment tray and clip or nail, if necessary (Fig. 6).
- 6 Lay adjacent tiling in normal manner (Fig. 7).

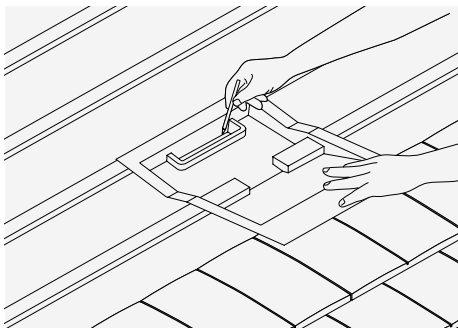


Fig. 4 – Mark aperture

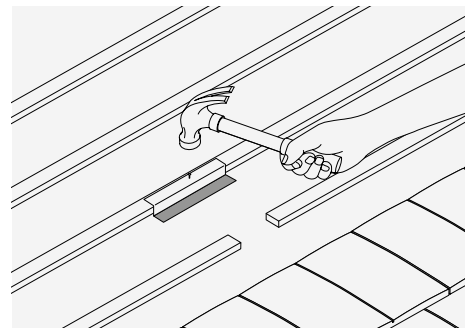


Fig. 5 – Cut and nail back underlay

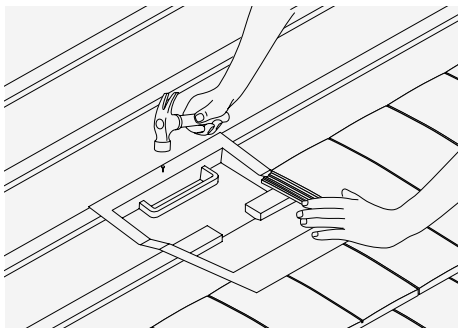


Fig. 6 – Nail catchment tray

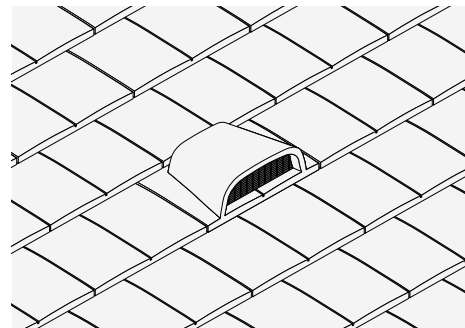
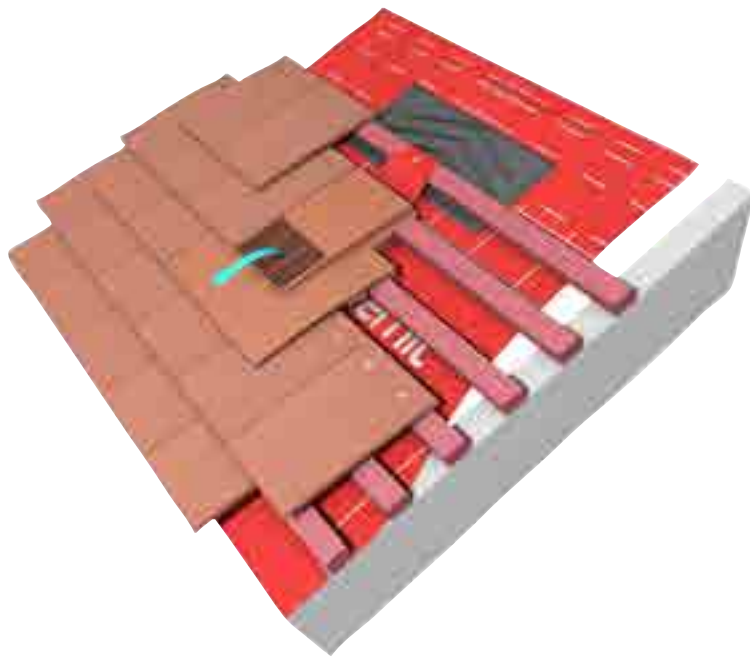


Fig. 7 – Continue tiling

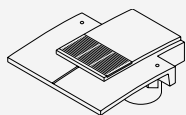
CONTOUR TILE VENT TERMINALS

Offering an unequalled combination of performance and appearance, contour vent terminals are designed to provide ventilation of the roof space, either at high or low level for either mechanical extraction or soil vent pipes whilst retaining an uninterrupted roofscape.

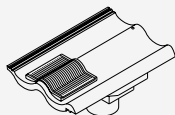


CONTOUR TILE VENT TERMINALS

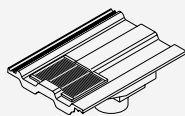
COMPONENTS



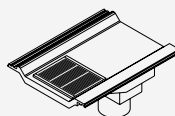
Universal Plain Tile
Contour Vent Terminal
(code 455)



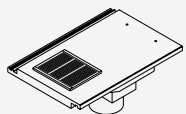
Mendip Contour
Vent Terminal
(code 452)



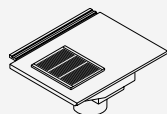
Ludlow Major
Contour Vent Terminal
(code 456)



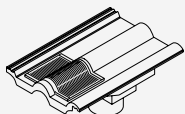
Wessex Contour
Vent Terminal
(code 459)



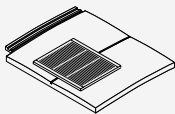
Modern Contour
Vent Terminal
(code 451)



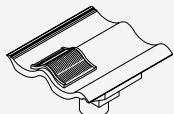
Edgemere Contour
Vent Terminal
(code 259)



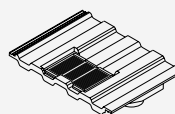
Double Roman
Contour Vent Terminal
(code 453)



Ashmore Contour
Vent Terminal
(code 450)



Anglia Contour
Vent Terminal
(code 453)



Ludlow Plus
Contour Vent Terminal
(code 457)

INSTALLATION FOR ASHMORE, LUDLOW PLUS, PLAIN TILE AND ANGLIA

1 Felt and batten roof in normal manner.

Note: If unit is to be used as a roof void vent, circular spigot and 5mm of box section must be sawn off on site to achieve maximum designed free vent area.

2 Determine position of vent tile (ideally mid-span between rafters) and remove section(s) of tiling batten to accommodate unit.

Note: the battens should be cut to provide a gap of 210mm when fitting with clay plain tiles and 260mm with concrete plain tiles.

3 Form 'V' cut in underlay in manner shown to accommodate rectangular spigot.

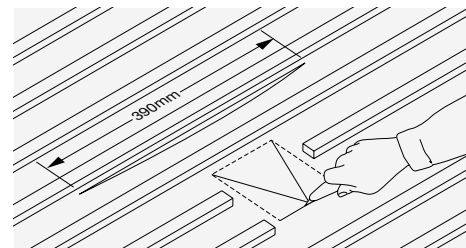


Fig. 1 – Make aperture in underlay

CONTOUR TILE VENT TERMINALS

- 4 Make a horizontal cut in underlay, 390mm long, at a distance 150mm above bottom edge of tiling batten above unit and slide soaker tray under batten and through slit in underlay (Fig. 1, page 226).
- 5 Secure soaker tray by folding cut underlay over batten and nail into bottom edge of tiling batten above (Fig. 2).
- 6 Insert tile unit and mechanically fix using screws provided (Fig. 3).
- 7 Continue tiling in normal manner.

INSTALLATION FOR LUDLOW MAJOR, EDGEMERE, MENDIP, MODERN, DOUBLE ROMAN, DUO MODERN, WESSEX.

- 1 Felt and batten the roof in normal manner.

Note: If unit is to be used as a roof void vent, circular spigot and 5mm of box section must be sawn off on site to achieve designed free vent area.

- 2 Determine position of tile vent terminal (ideally mid-span between rafters) and form a 'V' cut in the underlay to accommodate box spigot (Fig. 4).



Fig. 2 – Secure soaker tray

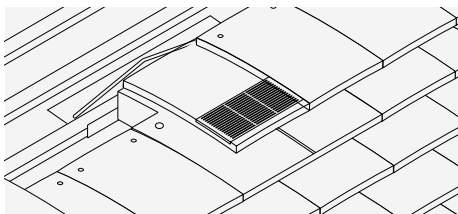


Fig. 3 – Fix contour tile vent

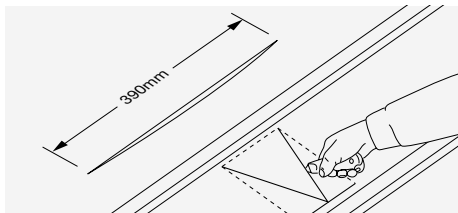


Fig. 4 – Make aperture in underlay

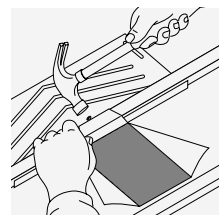


Fig. 5 – Secure soaker tray

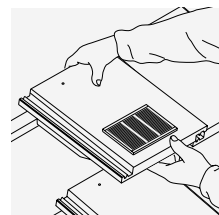


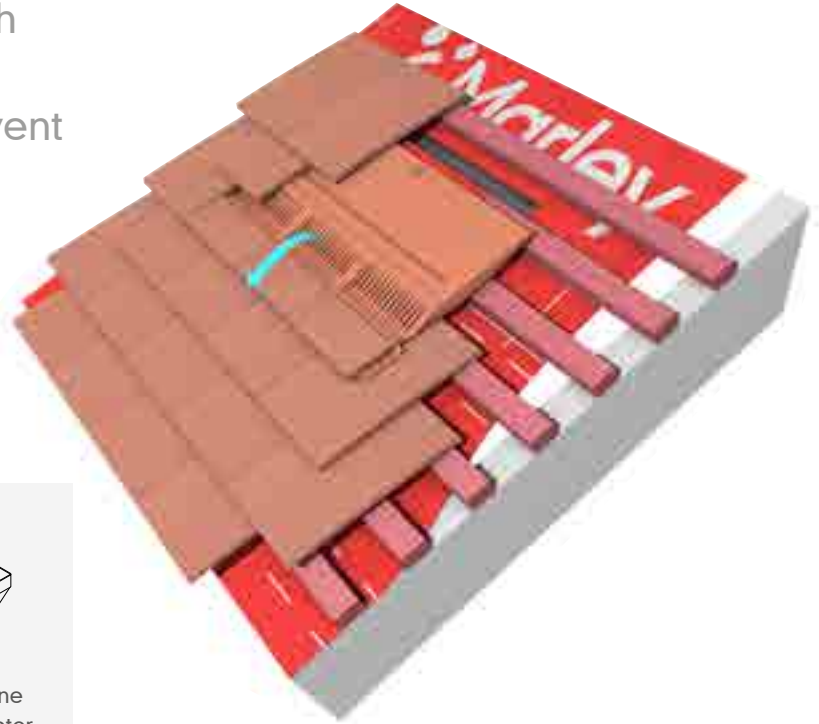
Fig. 6 – Fix contour tile vent

- 3 Make horizontal cut in underlay, 390mm long, at a distance 150mm above bottom edge of tiling batten, supporting vent tile and slide soaker tray under batten and through slit in underlay (Fig. 5).
- 4 Secure soaker tray by folding cut underlay over the batten and nail into the top edge of the tiling batten above.
- 5 Insert tile vent unit within main body of tiling and mechanically fix using standard tile clip fixings (Fig. 6).

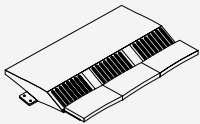
Note: This product is not suitable as an exhaust for hot gases.

CLAY IN-LINE VENT TERMINAL

Available in a range of bases with real clay tile slips on the visible edge (3 tiles wide). The clay tile vent provides a net ventilation area of $7,500\text{mm}^2$ per vent. Suitable for natural, mechanical or soil pipe ventilation.



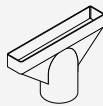
COMPONENTS



Clay in-line vent
terminal



Flexible pipe
(sold separately)
(code 39091)



Clay in-line
vent adaptor
(sold separately)

CLAY IN-LINE VENT TERMINAL

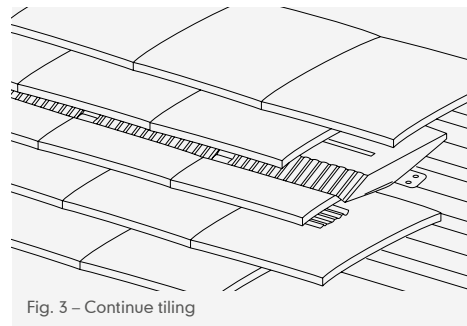
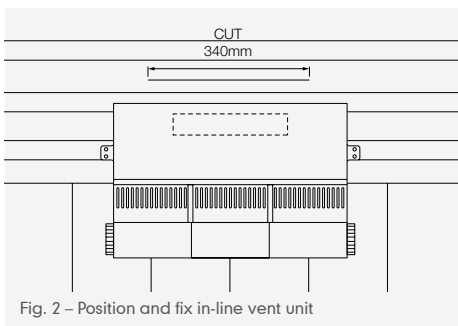
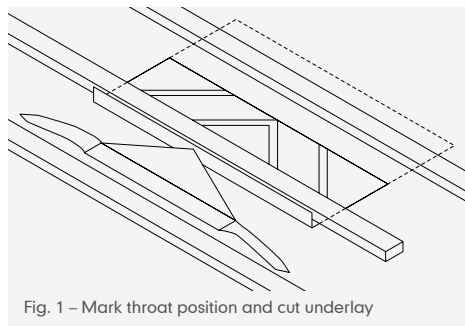
INSTALLATION

- 1 Fix the roof underlay, batten and tile in the normal manner.
- 2 At the position the ventilator is required, align the throat between two tile battens, and mark the throat position before cutting through the underlay as shown (Fig. 1).
- 3 Fold the three flaps upwards and outwards to provide the hole for the ventilator throat (Fig. 1).
- 4 Make a second horizontal cut 340mm wide in the underlay between the next two battens directly above the opening already created. Slide the underlay protector unit through the horizontal cut as shown (Fig. 2).
- 5 Insert the ventilator throat through the hole in the underlay into the roof space and position ventilator onto surrounding tiles. Fix to tile batten by the two side flanges using two nails ensuring half bond is

maintained. Positive fixing is required to prevent the ventilator lifting when fitting pipe adaptor.

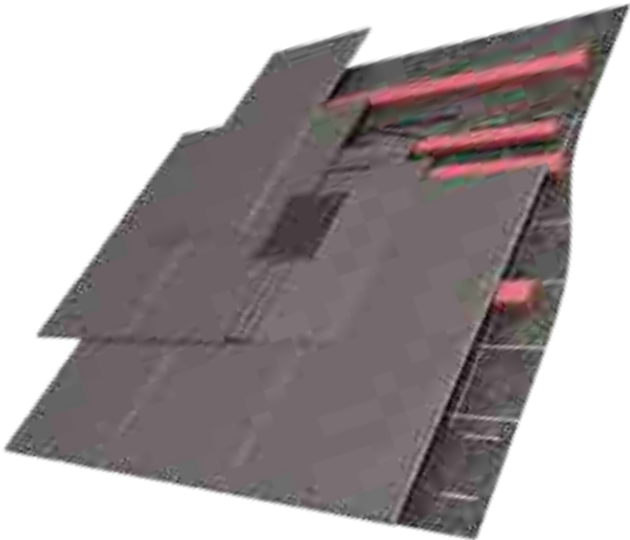
- 6 Continue tiling in the normal manner (Fig. 3).
- 7 For soil venting or mechanical extraction, attach pipe adaptor and flexible pipe (supplied separately) after installation of the ventilator.

Note: The ventilator is not suitable for the extraction of hot combustion gases.

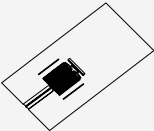


IN-LINE SLATE VENTILATOR


Ideal for roof designs where the normal ventilation air path is blocked by valleys, hips, abutments, dormer windows and fire breaks or party walls, or where it is not possible to incorporate standard eaves or ridge ventilation. For 600 x 300mm slates only.



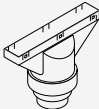
COMPONENTS



In-line slate ventilator*
(code EU_UNIVSLATEVENT)



Flexible pipe
(sold separately)
(code 39091)



In-line slate vent adaptor
(sold separately)
(code EU_INLINESLATEADAP)

* Minimum pitch 20°

- ▲ Provides visual integration with roof slope
- ▲ Ideal for natural, mechanical or soil pipe ventilation
- ▲ 10,000mm² free area of ventilation

PRESSURE RESISTANCE (PA)

Pa (litres/sec airflow)	15	30	60
10,000mm ² free area	10.9	41.5	162.0

IN-LINE SLATE VENTILATOR

- 1 Felt and batten the roof in the normal manner.
- 2 Determine the position of the ventilator, between rafters. Cut the slate directly below the ventilator so that it does not project past the slate batten to which it is secured.

Ensure that the bottom edge of slate vent aligns with bottom edge of adjacent slates.

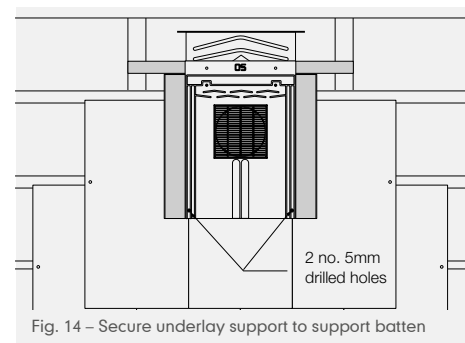
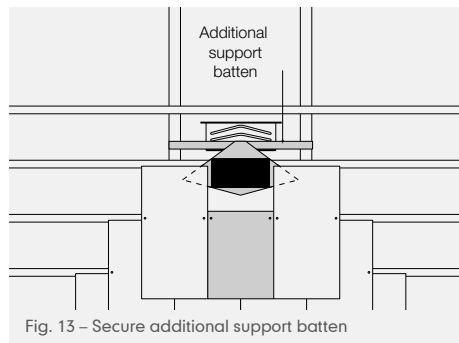
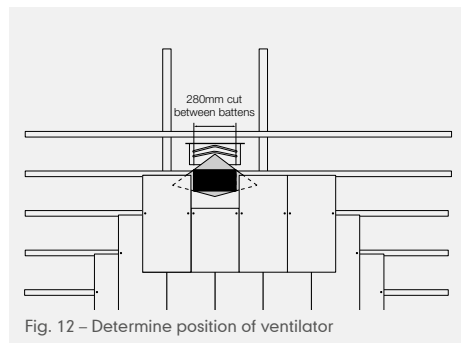
Remove a 280mm section of batten to accommodate the unit. Form a 'V' cut in the underlay to accommodate the rectangular spigot (Fig. 12).

- 3 Secure an additional support batten 20mm above the cut batten. Cut a 354mm horizontal slit in the underlay 50mm – 60mm centrally above the additional support batten.

Slide the underlay protector tray above the additional support batten until the protector's upstand can be secured to the lower edge of this batten.

Nail the uppermost 'V' of the underlay to the rear of the additional support batten (Fig. 13).

- 4 Position the In-line slate ventilator centrally on the slate coursing below and level with adjacent slates. Drill two 5mm holes in the ventilator, ensuring adequate clearance to accommodate the copper disc rivet shanks for securing the tail of the overlapping slates (Fig. 14).



IN-LINE SLATE VENTILATOR

- 5 Cut two 'C' shaped slates to fit either side of the ventilator so that they neatly abut the grille and central draining upstand.

Hole each formed slate piece as shown, ensuring that it is twice nailed to battens (Fig. 15). Continue slating in the normal manner.

- 6 Lay the next course of slates, cutting the slate directly above, to neatly abut the ventilator grille as required. Inspect the junction, security of the ventilating unit and adjacent slating before laying further courses. (Figs. 16 and 17). Continue slating in the normal manner.

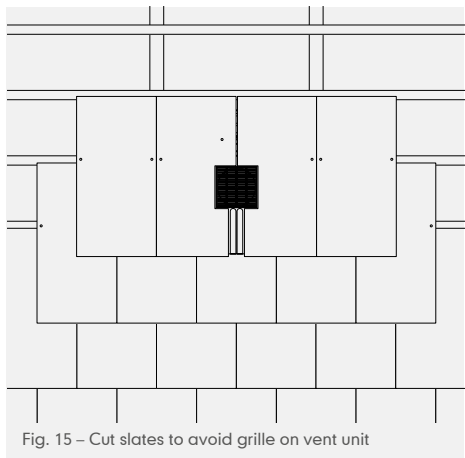


Fig. 15 – Cut slates to avoid grille on vent unit

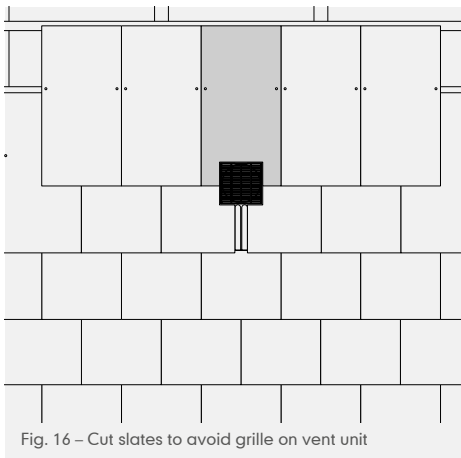


Fig. 16 – Cut slates to avoid grille on vent unit

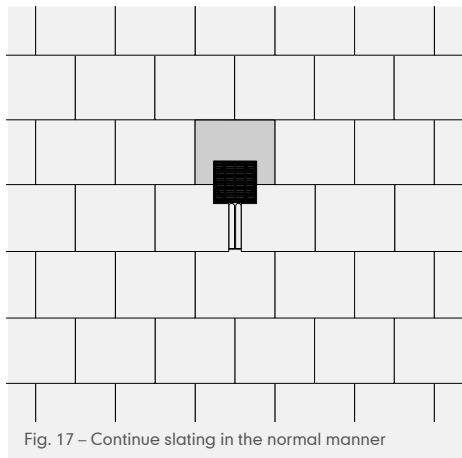


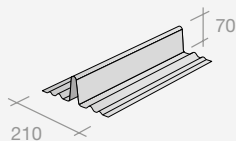
Fig. 17 – Continue slating in the normal manner

BONDING GUTTERS

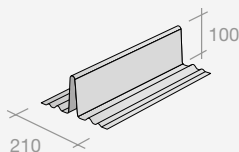
Mortar-free, BS 5534 compliant weathertight joins between dissimilar roof coverings. Dry Fix Bonding Gutters are manufactured from GRP (Glass Reinforced Polyester). The Dry Fix Bonding Gutter eliminates the requirement for mortar altogether.



COMPONENTS



Low profile bonding gutter
(code 40470)



High profile bonding gutter
(code 40471)

BONDING GUTTERS

PREPARATION

The Dry Fix Bonding Gutter is designed to fix directly over the tiling or slating battens of both new and adjacent roof or over the underlay and directly into the sarking boards in a fully boarded roof, typical of Scottish practice.

Any battens and underlay on the adjacent roof should be checked for condition and if necessary renewed back to the nearest appropriate rafter, any defective nails should be replaced.

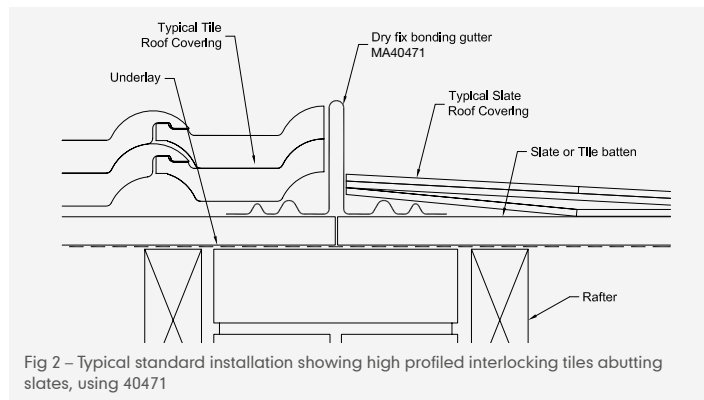
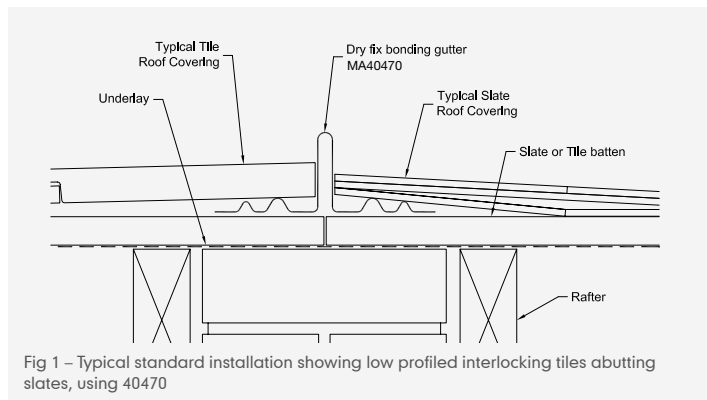
POSITIONING

The Dry Fix Bonding Gutter should be placed to allow the slate or tile bond to be maintained and using either a replacement tile-and-a-half or wider slate, as required.

Where the tile nibs may interfere with the bonding gutter profile, they should be removed and each tile mechanically fixed. Where standard fixings cannot be used, use either 'C' clips or secret cut tile clips (available separately).

INSTALLATION (FIGS. 1, 2 AND 3)

- 1 Before installing the Dry Fix Bonding Gutter, mark the centre line of its intended position onto the roof and then remove the slates or tiles for cutting.
- 2 With the slates or tiles removed, install the bonding gutter to the established centre line between the old and new roof, commencing at the eaves.

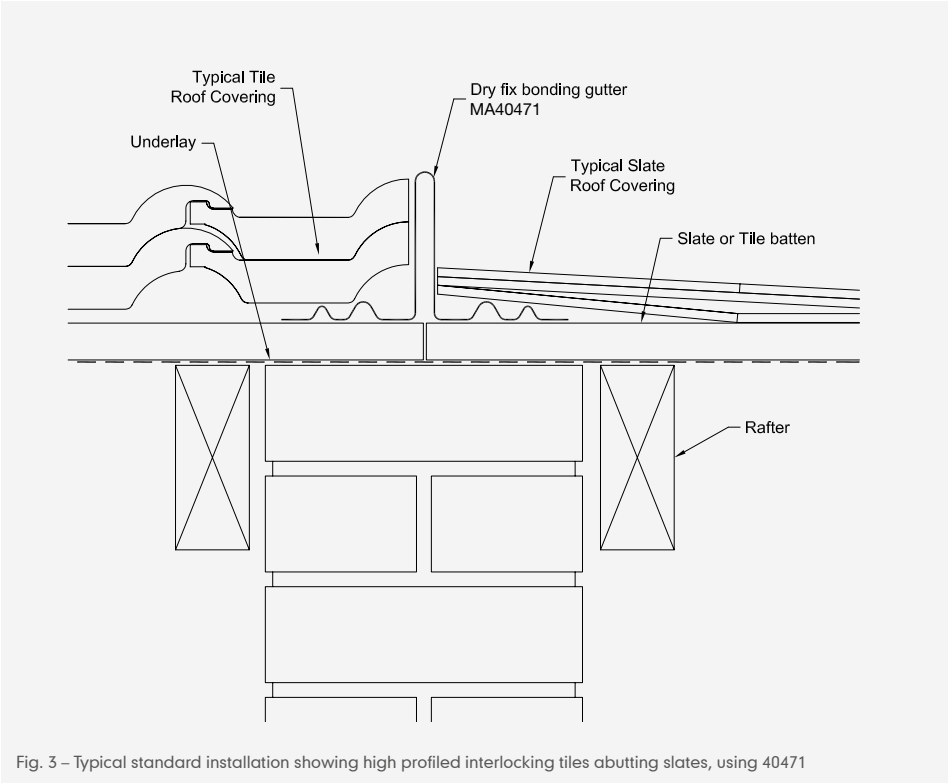


BONDING GUTTERS

- 3 Allowing for a 50mm overhang of the Dry Fix Bonding Gutter into the rainwater gutter, the central upstand should be pinched together before fixing with nails of acceptable quality through the outer flanges and into the battens on both sides and at 500mm centres maximum.
- 4 When joining lengths of Dry Fix Bonding Gutter use the minimum lengths of overlap as follows:

Roof pitch	>39°	30-39°	22.5-29°	<22.5°
Overlap	150mm	200mm	300mm	350mm

- 5 The slates or tiles, when fitted onto the Dry Fix Bonding Gutter, should be close or touching the central upstand on both sides but with care taken to avoid any pressure or distortion and maintain the straight line appearance of the profile.
- 6 When nailing the slates or tiles, care should be taken to avoid nailing into or between the water channels.



BONDING GUTTERS

- 7 At the ridge, consideration should be given to fitting a minimum code 4 lead saddle over the apex of the roof and dressed over the Dry Fix Bonding Gutter. The length of overlap of the saddle onto the Dry Fix Bonding Gutter should be in accordance with the overlap lengths given previously. Ridge tiles, whether dry fixed or mortar bedded, are fitted in the normal manner.

FIRE BREAK INSTALLATIONS (FIG. 4)

- 1 When creating a fire break installation, e.g. at a party wall, the battens should be cut to allow a smooth trowelled mortar barrier to be built up off the wall and finished level with top of the slating or tiling battens.
- 2 When dealing with an existing fire break detail, any loose mortar should be removed and the mortar barrier reinstated, ensuring it is brought up to the level of the battens.
- 3 The underlay on both sides of the mortar barrier should be folded back over the battens before nailing the Dry Fix Bonding Gutter into position and proceeding with the installation as previously described.

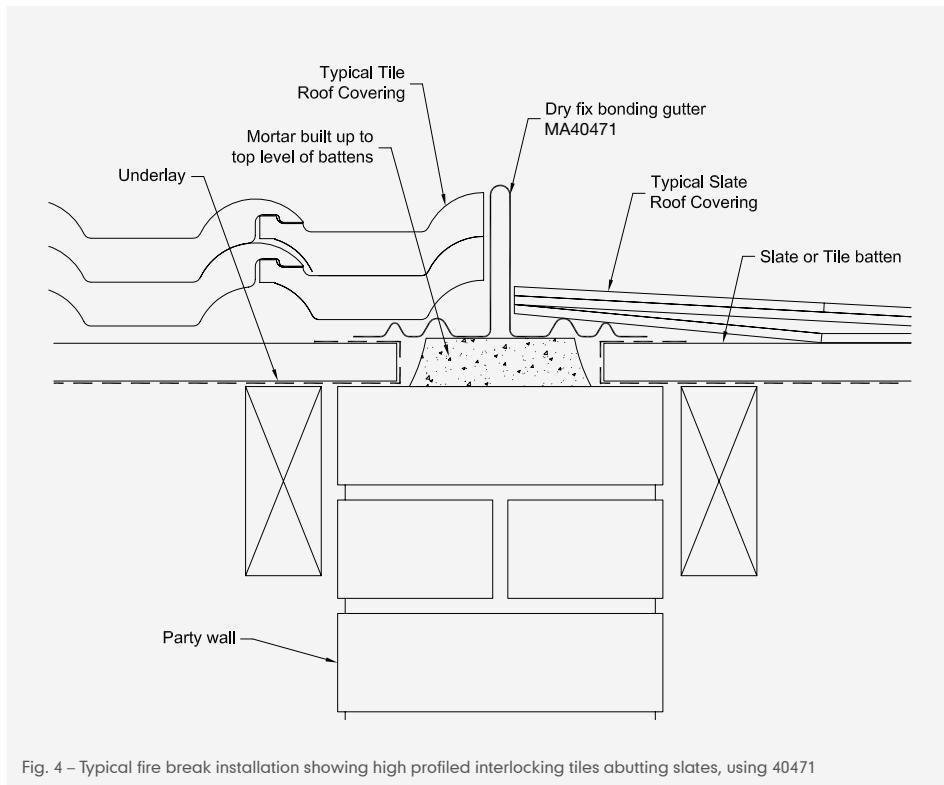


Fig. 4 – Typical fire break installation showing high profiled interlocking tiles abutting slates, using 40471



TABLES AND TERMINOLOGY

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EAVES FASCIA HEIGHTS

The following tables, calculated using a 19mm thick timber fascia board with tile projecting 50mm beyond the front plane of the fascia. Heights shown will be affected where rigid sarking and counter battens (Scottish practice) are used or where there is variation in batten thickness, tile overhang, fascia thickness or pitch.

The eaves course of tiles must be in the same plane as the remainder of roof.

- 1 For comprehensive tabulated reference for vertical measurement of eaves fascia above rafter, see below. For measurements using the Marley Universal 10mm and 25mm Eaves ventilation systems, please refer to tables on page 132.

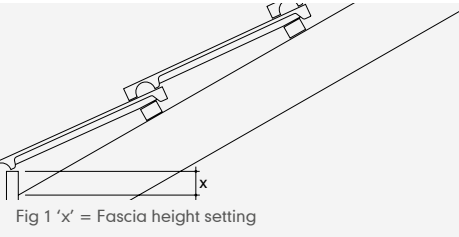


Fig 1 'x' = Fascia height setting

FASCIA HEIGHT SETTINGS (MM) 'X' WITHOUT OVER FASCIA VENTILATION SYSTEM*

Pitch	12.5°	15°	20°	30°	40°	50°	60°	70°
Anglia	–	–	–	34	34	38	72	95
Ashmore	–	–	–	44	44.6	50	–	–
Double Roman	–	–	31	32	34	38	49	–
Eden	–	–	–	61	61	64	66	66
Edgemere range	–	–	40	40	41	44	52	68
Lincoln	–	–	44	44	44	46	50	64
Ludlow Major	–	–	–	35	36	39	45	58
Ludlow Plus	–	–	–	33	35	55	65	84
Maxima	–	–	55	55	55	58	70	90
Melodie	44	44	44	44	44	46	50	64
Mendip	–	–	–	33	33	36	42	53
Modern/Duo Modern	–	–	47	48	51	58	71	98
Plain	–	–	–	–	45	50	58	76
Wessex	–	44	47	52	57	62	71	–

* The nominal dimensions given are for guidance only and may need to be adjusted to suit site requirements by ensuring that the eaves course of tiles or slates is laid at the same pitch as the main body of the roof.

VENTILATION ROOF TILES AND VENT TERMINAL SPACING

Product and profile	Code	Free area	Tile spacing to suit vent equivalent to gap of			Cover width
			5mm	10mm	25mm	
VENTILATION ROOF TILE						
Ashmore	263	4000mm ²	800mm	400mm	–	302mm
UNIVERSAL TILE VENT TERMINAL						
All profiles	36700	15000mm ²	3000mm	1200mm	600mm	–
IN-LINE VENT TERMINALS						
Clay plain tiles	–	7500mm ²	1500mm	750mm	300mm	495mm
Fibre cement slates	–	10,000mm ²	2000mm	1000mm	400mm	300mm
TILE VENT TERMINALS						
Double Roman	298	7614mm ²	1520mm	760mm	–	300mm
Edgemere range	259	7081mm ²	1415mm	705mm	–	290mm
Lincoln	123990/1	8000mm ²	1600mm	8000mm	–	222mm
Ludlow Major	297	7665mm ²	1530mm	765mm	–	295mm
Mendip	294	7107mm ²	1420mm	710mm	–	298mm
Modern / Duo Modern	295	7081mm ²	1415mm	705mm	–	292mm
Wessex	296	6929mm ²	1385mm	690mm	–	298mm

Product and profile	Code	Free area	Tile spacing to suit vent equivalent to gap of			Cover width
			5mm	10mm	25mm	
CONTOUR VENT TERMINALS						
Anglia (2 tile)	460	15000mm ²	3000mm	1500mm	600mm	408mm
Double Roman	453	13500mm ²	2700mm	1350mm	540mm	300mm
Edgemere range	465	10000mm ²	2000mm	1000mm	400mm	290mm
Ludlow Plus (2 tile)	457	15000mm ²	3000mm	1500mm	600mm	408mm
Ludlow Major	456	11000mm ²	2200mm	1100mm	440mm	295mm
Mendip	452	14500mm ²	2900mm	1450mm	580mm	298mm
Modern/Duo Modern	451	10000mm ²	2000mm	1000mm	400mm	292mm
Plain	455	10000mm ²	2000mm	1000mm	400mm	165mm
Wessex	459	12500mm ²	2500mm	1250mm	500mm	298mm
RIDGE VENT TERMINALS						
Concrete segmental	198	9500mm ²	1900mm	–	–	497mm

VALLEY GUTTER WIDTHS

MINIMUM WIDTHS OF VALLEY GUTTER FOR DIFFERENT ROOF PITCHES AND PLAN AREAS

Roof pitch	Design rainfall rate 225mm/h		Design rainfall rate 150mm/h		Design rainfall rate 75mm/h	
Degrees (°)	25m² and less on plan (mm)	over 25m² up to 100m² on plan (mm)	25m² and less on plan (mm)	over 25m² up to 100m² on plan (mm)	25m² and less on plan (mm)	over 25m² up to 100m² on plan (mm)
15° - 17°	150	250	125	200	125	150
17.5° - 22°	125	200	125	150	100	125
22.5° - 29.5°	100	150	100	125	100	100
30° - 34.5°	100	125	100	100	100	100
> 35°	100	100	100	100	100	100

MINIMUM WIDTHS OF VALLEY GUTTER FOR DIFFERENT ROOF PITCHES AND PLAN AREAS

Degrees (°)	Area to be drained 25m² and less on plan (mm)	Area to be drained over 25m² up to 100m² on plan (mm)
15° - 17°	150	250
17.5° - 22°	125	200
22.5° - 29.5°	100	150
30° - 34.5°	100	125
> 35°	100	100

PITCHED ROOFING TERMINOLOGY

ABUTMENT – The junction of a roof surface with a wall, or any other structural feature which arises above it.

BARGE BOARD – A board fixed along the edge of a gable.

BATTENS – Horizontal, small-section timbers on which tiles or slates are laid.

BONNET HIP – Rounded hip tile used in plain tiling.

BROKEN BOND – A way of laying tiles so that the edge of each tile is above the middle of the tile in the course below.

CAPILLARY ACTION – A phenomenon whereby moisture is drawn up into the space between closely fitting surfaces.

CLOAK VERGE TILE – A tile to cover the edge of a verge.

CLOSE COUPLE ROOF – Roof composed of rafters with their feet to wall plates, their heads butting against a ridge board and with horizontal ties at wall plate level.

COLD ROOF – Roof that has insulation laid horizontally at ceiling level and a void between the insulation and its outer roof structure and covering.

COLLAR ROOF – Roof composed of rafters with their feet fixed to wall plates, their heads butting against a ridge board and with horizontal ties at approximately mid slope.

COUNTER BATTENS – Timbers fixed vertically between the battens and the surface below.

COUPLE ROOF – Roof composed of rafters with their feet fixed to wall plates and their heads butting against a ridge board without ties.

COURSE – A horizontal row of tiles or slates.

DENTIL SLIP – Small rectangular pieces of plain tile bedded between the underside of a ridge tile or hip tile and the pan of a profiled single-lap tile.

DOUBLE PANTILE – Single-lap tile moulded to two pans in section.

DRY RIDGE – A roof ridge which is fixed mechanically without mortar.

DRY VERGE – A roof verge which is fixed mechanically without mortar.

EAVES – The lower edge of a roof.

EAVES FILLER – A component that fills the space under the roll of a roof tile at the eaves to keep out birds, vermin and insects.

EFFLORESCENCE – The formation of a white crystalline deposit on the surface of a tile, caused by mineral migration to the surface.

FASCIA BOARD – The board attached vertically to the rafter ends at the eaves, the wall plate or the wall face.

FELT – (Also known as underlay or sarking felt). Untearable bituminous or PVC sheet material, supplied in rolls and laid over rafters or counter battens.

FINIAL – A decorative fitting used at the end of a ridge or at the highest point of a roof.

FLASHING – A sheet of metal, usually lead or aluminium, which protects a joint from water penetration.

GABLE – The vertical triangular section of wall above the level of the eaves and below the sides of a pitched roof.

GAUGE – The length of tile exposed after it has been installed. It equals the distance between the top of one batten and the top of the next.

GUTTER (BACK) – A gutter formed at the back of a chimney, or any other structure which penetrates the roof.

GUTTER (SECRET) – A gutter formed at an abutment and effectively hidden from sight. (As opposed to Side Gutter, which is exposed to view).

GUTTER (VALLEY) – A visible gutter running down the valley.

HIP – The meeting of two pitched roof surfaces which meet at an external angle (known as a Piend in Scotland).

PITCHED ROOFING TERMINOLOGY

HIP IRON – A metal strap bent to form a stop for the hip covering and screwed to the lower end of a hip rafter (known as a Piend Strap in Scotland).

HIP TILE – A fitting designed to cover the hip (Piend in Scotland) intersection of a pitched roof of a given pitch.

INTERLOCKING TILE – A single-lap tile designed to connect with adjoining tiles by close fitting ribs.

LAP – The amount by which a tile overlaps the course below it - or, in the case of plain tiles, the course next but one.

MANSARD ROOF – A roof having two slopes on both sides and ends, the lower slopes being steeper in pitch.

MONOPITCH ROOF – A pitched roof with a single slope from eaves to ridge.

NIBS – Projecting lugs on the underside of a tile near the head, which locate the tile on the battens.

PANTILE – Single-lap tile moulded to a flat S-shape in section.

PITCH – The angle of the roof to the horizontal. (Normally applies to the rafters).

PLAIN TILE – A small, slightly cambered roofing tile, size 267mm x 165mm. Usually with nibs and nail holes.

RAKING CUT – A diagonal cut across courses of

tiles.

RIDGE APEX – The junction of two slopes forming the apex of a pitched roof.

RIDGE TILE – A fitting designed to cover the apex of a pitched roof of a given pitch.

RIDGE VENT TERMINAL – A ridge tile which incorporates a ventilation outlet.

SADDLE – A piece of impervious flexible sheet material (usually lead) dressed to shape, fitted to provide weather protection.

SOAKER – A small piece of sheet (usually lead), shaped and inserted between double lap tile or slates on the abutment between a roof slope and a vertical wall, or at a hip or valley.

SOFFIT BOARD – Board fixed to the feet of rafters which forms the underside of projecting eaves.

SPROCKET – An alteration in pitch from steep to shallow, normally close to the eaves (Bellcast).

TILTING FILLET – A strip of wood laid beneath a course, to tilt it up slightly so that the slates or tiles rest properly on the roof.

UNDERCLOAK – Roofing slates, plain tiles or fibre cement strip fixed at the verge beneath the battens, on to which the verge tiles are bedded.

UNDER EAVES COURSE – The courses of plain tiles or slates laid broken bond under the eaves course, finished flush with its lower edge and of such a length to give the correct lap.

UNDERLAY – A layer of material acting as a barrier between the roof covering and the sub-structure (see Felt).

VALLEY – The junction of two inclined roof surfaces at an internal angle.

VALLEY TILE – A concrete or clay tile used at valleys with plain tiles.

VALLEY TROUGH – A concrete tile or glass reinforced polyester resin section, used for weathering valley junctions when using interlocking tiles or slates.

VAPOUR CONTROL LAYER – Layer of material intended to restrict the transmission of water vapour.

VENT TERMINAL – A roof tile fitted with a hood and grille for natural ventilation which can also be connected to soil pipes or mechanical extractors.

VENTILATION TILE – A roof tile with a hood and grille to ventilate the roof space.

VERGE – A free end of a roof surface; for example that at the end of a gable or dormer.

WARM ROOF – Roof that has insulation and a vapour barrier laid above its supporting structure (normally on the pitch of the rafters) and immediately below its weatherproofing membrane.



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