

# BARDOLINE Shingles<sup>®</sup>

By **Onduline**

*The stylish light weight bitumen shingle tile strip roofing system*

*Design and installation manual*

*Complementary leaflet to the Bardoline instructional film available online*



**Onduline<sup>®</sup>**

[www.onduline.co.uk](http://www.onduline.co.uk)

# Bardoline fixing guide:

*This guide provides comprehensive design and installation guidance, you can either select & click on the specific information you require from the index below or view this guide and instructional video in full.*

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**Note:** Professional advice should be sought to detail your specific project specification and mechanical fixing requirements as required.

**Please remember the covering of roofs can be hazardous. Always work from a secure ladder or platform and use the appropriate safety equipment. Guidance can be found in Health and Safety Guide HSG33 working on roofs.**

# Bardoline

## Introduction

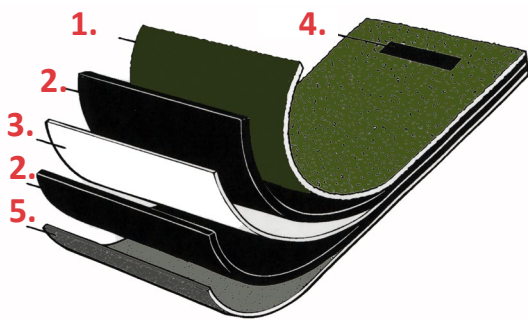
For an attractive and durable roof, please take the time to read this instructional guide. Make all relevant preparations before fixing the Bardoline shingles in accordance with these simple design and fixing instructions.

**It will also save you time and money in the long run!**

### Bardoline shingle tile strips

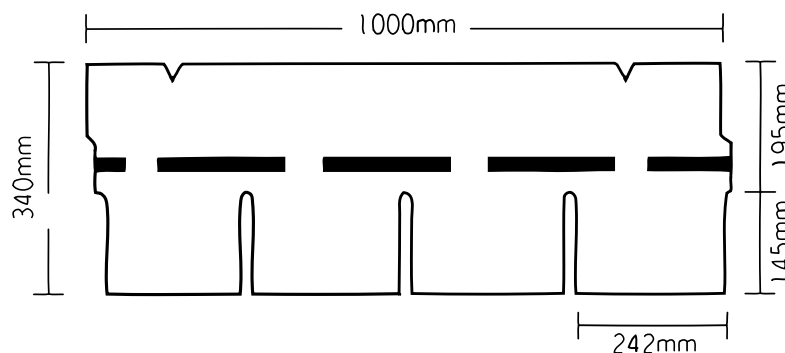
Bardoline is manufactured from high quality materials, using the latest production technology to provide first rate weathering performance.

#### Composition



1. Ceramicised granules: high temperature process vitrifies the colour pigments providing assured colour stability, Ext. S.AA fire resistance and UV protection.
2. Asphalt: specially formulated oxidised asphalt for stability in fluctuating temperatures.
3. Pre-impregnated 125g/m<sup>2</sup> Classic ( 95g/m<sup>2</sup> Base grade) bonded glass fibre mat: guarantees outstanding mechanical resistance.
4. Heat sensitive adhesive strip just apply gentle heat with hot air gun to bond the tile tabs of the overlapping tile.
5. Silicon sand: under surface finish to the tile strip.

### Material specification and packaging



Bardoline is available in two durable qualities: **DIY 100G** ideal for the domestic garden house and timber frame building market and the **Pro 125S** designed for high end specification housing, commercial and industrial projects.

#### Pro 125S shingles

**Nominal Thickness** 3.4mm  
**Weight** 10.7kg/m<sup>2</sup>

**Package** **21 tiles pack**  
Effective surface area 3.05m<sup>2</sup>

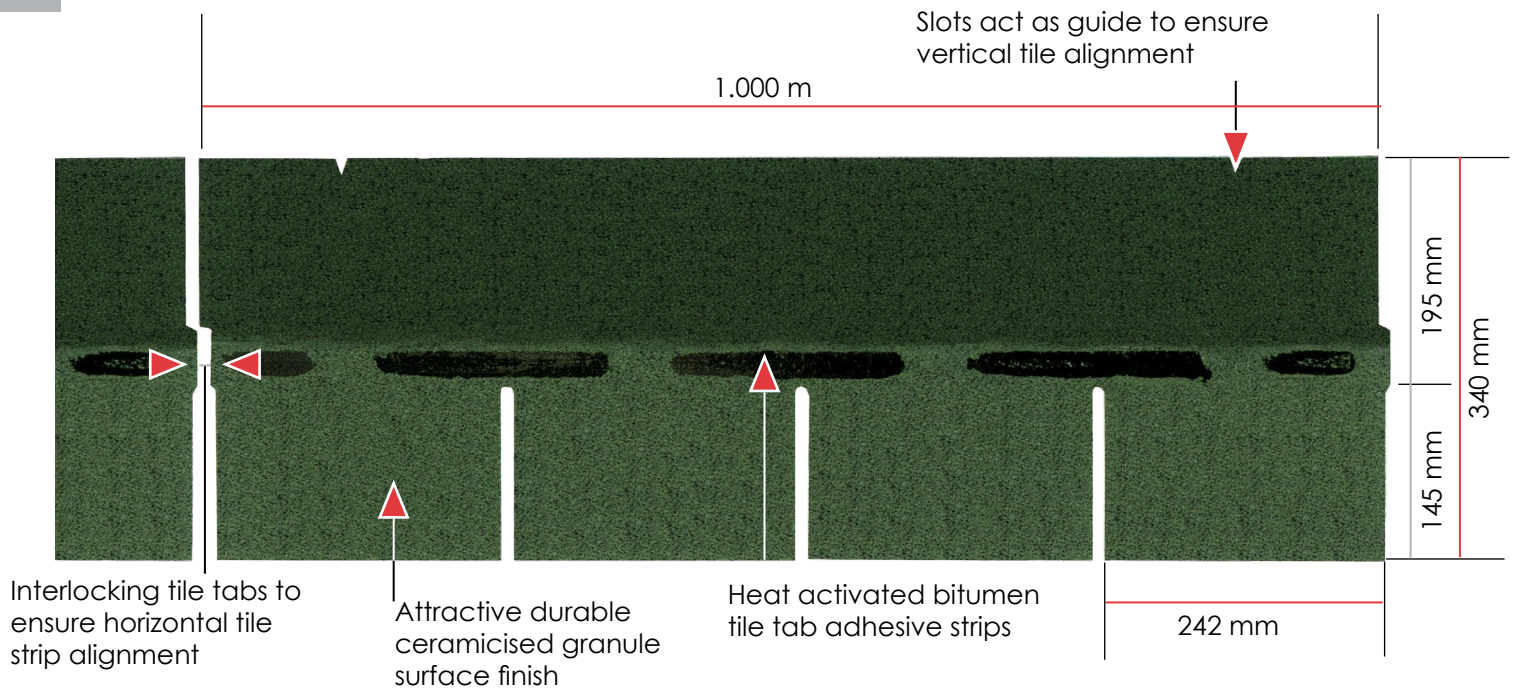
**14 tiles per pack**  
Effective surface area 2.03m<sup>2</sup>

#### DIY 100G shingles

**Nominal Thickness** 3.0 mm  
**Weight** 8.5kg/m<sup>2</sup>

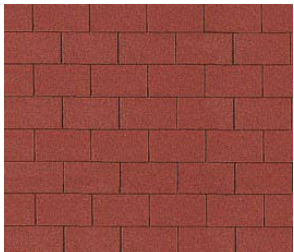
**Package** **21 tiles pack**  
Effective surface area 3.05m<sup>2</sup>

**14 tiles pack**  
Effective surface area 2.03m<sup>2</sup>



## Bardoline colour range

Red shingles



Green



Slate Grey



Red multi-colour  
(clay effect)



Brown



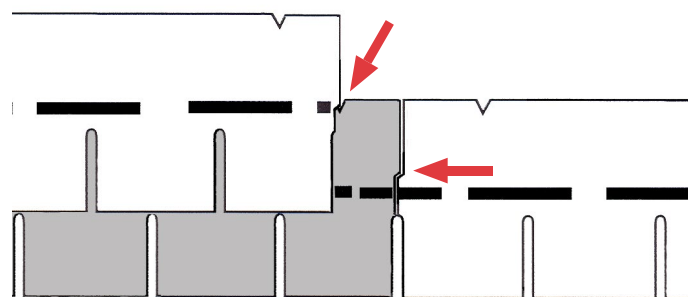
Note: Other colours are available to special order only (typical minimum quantity 6000 m<sup>2</sup>)

## Benefits:

- Durability
- Light weight
- Versatility
- Ease of fixing
- Cost effective
- Attractive appearance
- Virtually maintenance free
- Low maintenance
- Material guarantee\*
- Auto shingle alignment

\*Terms and conditions apply

## Auto tile tab alignment:



### Shingle tile strip alignment

Interlocking side tabs automatically aid the horizontal alignment of the shingle tile strips. Slots positioned in the top of the shingle tile strip engage with the edge of the next course to provide assured alignment of the tile tabs vertically.

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# Roof design:

## Roof structure

It really is worth taking the time to first check your roof and carefully set out the design for the support structure on your project.

*It will save you time and money!*

### New build project:

Just follow the information contained in this leaflet to create a long lasting trouble free roof covering.

### Existing roofs:

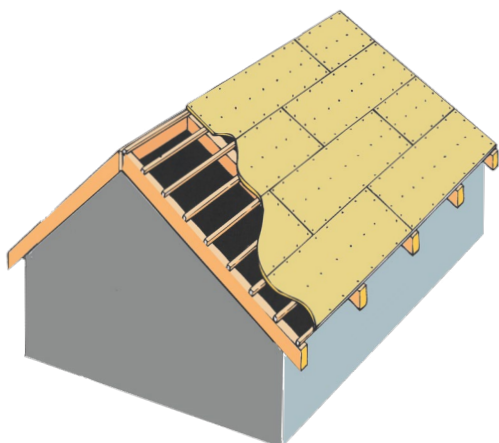
Survey your roof structure this will allow you to decide if it requires maintenance, upgrading or strengthening prior to fixing the Bardoline shingles.

Make note of the roof construction; normally built using a decked roof laid on rafters or purlins supported on a trussed roof structure.

### Support structure design:

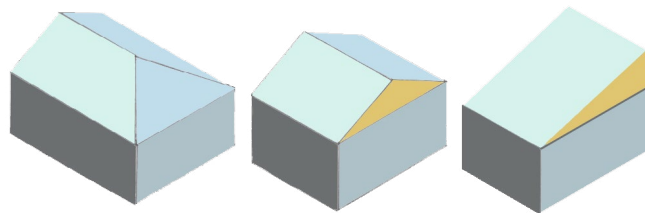
A fully supporting rigid deck must be provided below the Bardoline. Any irregularity in the decking will be apparent through the tile strips. **The roof should be constructed in accordance with relevant Building Standards and Codes of Practice**, with all timber treated with preservatives. Exterior quality plywood board is the preferred decking for Bardoline; it should be a minimum of 12 mm thick with all fixing head finished flush with the sheet surface. The board should be fully supported on at least three purlins and laid in a broken bond pattern. If close boarding is used it should be a minimum of 15mm thick and should be interlocking to avoid movement distortion in the decking.

**Note:** Alternatively suitable roofing grade 18 mm Stirling / OSB boards can also be used below Bardoline fixed in strict accordance with the manufacturers instructions.



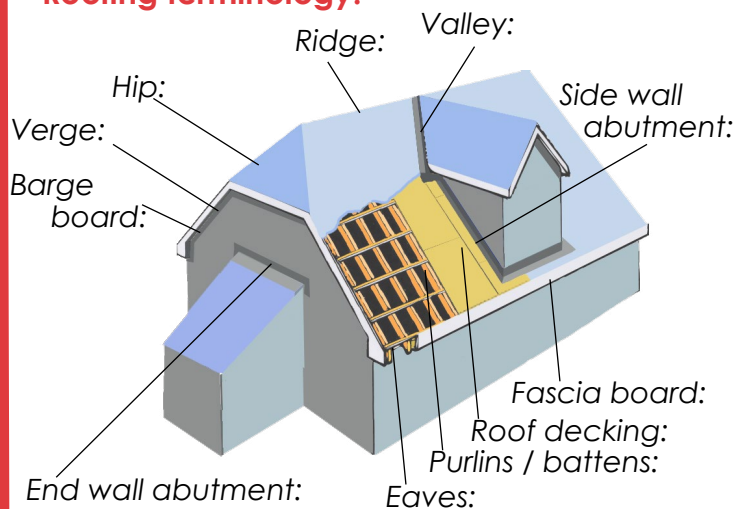
*If you are in doubt over your roof condition or design professional advice should always be sought*

## Roof types and terminology



Hipped roof: Duo-pitch roof: Mono-pitch roof:

### Roofing terminology:



## Recommended tool kit



1 Hammer:

2 Tin snips:

3 Roofers knife:

4 Tape measure:

5 Straight edge:

6 Hot air gun:

7 Hand saw for decking:

8 Power saw for decking:

9 Angle to form ridge tiles:

10 Protective gloves:

11 Protective glasses:

12 Protective hard hat:

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# Roof construction:

So let's get started with the first two steps to create your durable, attractive and long lasting roof you can be proud of...

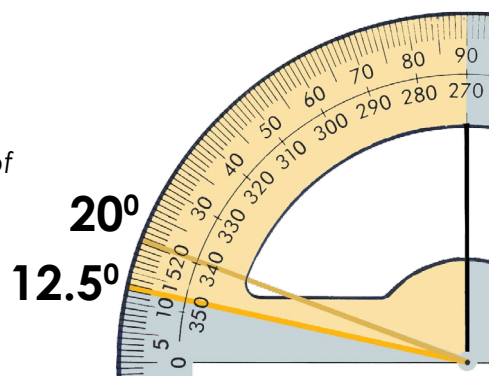
## Minimum recommended roof slope



The minimum recommended roof slope to which Bardoline roof strips can be fixed is:  $12.5^{\circ}$  degrees. Bardoline roof strips must always be laid on an Onduline roof underlay membrane on roof slopes below  $20^{\circ}$  degrees.

*(Indeed its good practice to always use an underlay)*

First calculate the slope of your roof using a protractor. Then measure your roof and take note of the materials and tools required to cover your roof including any Bardoline shingle tile strip system accessories required for your project.



## Bardoline roof construction a, b, c,

**a**

Make ready the roof Deck



Bardoline shingle tile strips must be laid on a roof deck in accordance with relevant British Standards and Codes of Practice. Minimum roof slope:  $12.5^{\circ}$  degrees.

Minimum deck thickness: 12 mm to 18 mm.

**Note:** Any irregularity in the surface of the decking will become apparent through the shingle strips in service.

**b**

Lay Onduline roof underlay

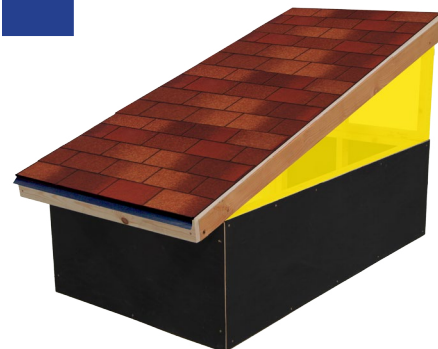


Onduline underlay must be used on roof slopes below  $20^{\circ}$  degrees, the membrane laid with a 15 cm end laps and nailed at 10 cm centres using large headed galvanised clout nails.

**Note:** Select one of the range of Ondutiss underlays either conventional or vapor permiable to match your design requirements.

**c**

Fix Bardoline tile strips

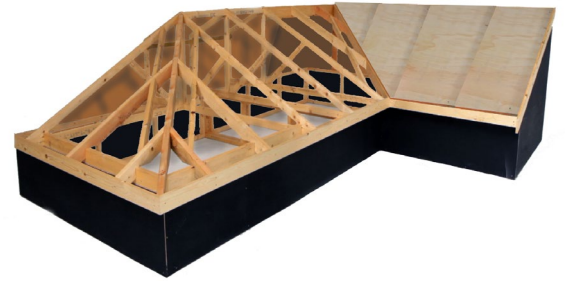


Finally fix the Bardoline tile strips in accordance with the instructions set out in the Bardoline fixing instructions.

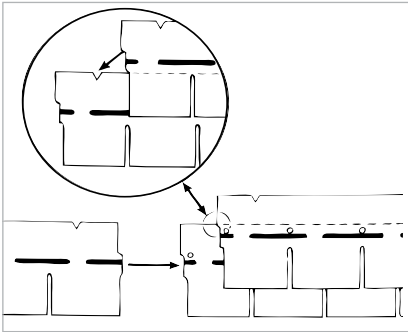
**Note:** Remember before fixing the shingles to your roof take time to look at the instructional video available on the Onduline website.

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# Fixing shingles



## Aligning shingle tile strips



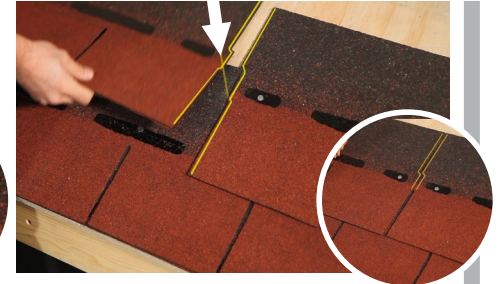
### Fixing tile strip

Interlocking side and top slots aid positioning shingle strips. Start alternate trimmed to a form tile bond pattern.



### Vertical alignment slot

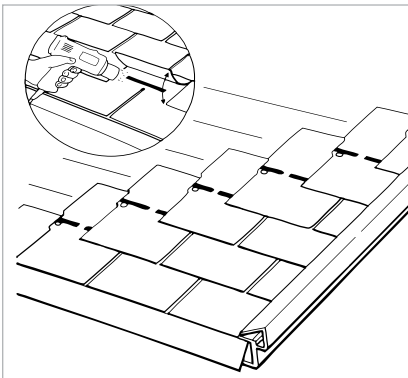
Guide slots are cut into the top edge of the tile strip, which when opened form a slot into which the next course is engaged for vertical alignment.



### Horizontal alignment tag

Ensure the shingles are positioned square to the line of the eaves and verge. Interlocking side tags provide horizontal alignment of shingle tile strip.

## Fixing shingle tile strips



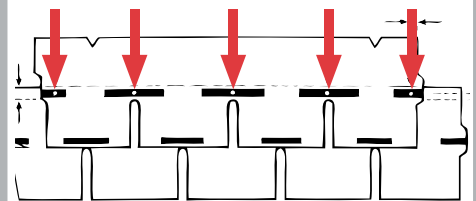
### Fixing shingle tile strips

Lay the tile strips diagonally, square to the eaves and ridge.



### Fixing shingles

Lay the shingles diagonally across the roof taking care to keep them square to the line of the eaves and verge at all times in a broken bond pattern.



### Securing shingle strips

Fix using 5 x 20mm large headed galvanised clout nails per tile strip. Nail through the adhesive strip band into the top edge of the lower course.



### Fixing file tab

Bond the tile tabs by gently heating the bitumen tab on the lower course with a hot air gun  
**Note:** Take care to keep the bitumen strip clean of roof debris prior to heating.



### Consolidating bond

Consolidate the bonding of the tile tab by pressing with batten. Check the bond after cooling and reinforce laps joints with gun applied adhesive as required.



## Eaves preformed eaves tray detail



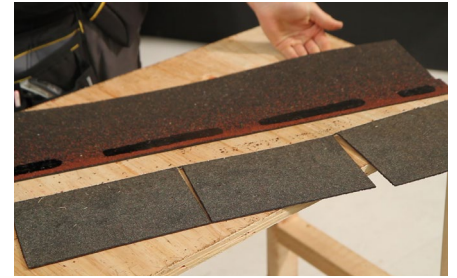
### Onduline eaves tray

Fix the Onduline universal eaves tray to form a drip edge into the gutter. Allow a 20cm end lap and fix using 20 mm galvanised clout nails at 20 cm centres.



### Preparing base course

Cut off tile tabs with knife from shingle strip using a deep straight edge to cut against to protect fingers should the blade slip.



### Eaves base course

The remaining strip forms the eaves base course which is nailed onto the roof. Note: Cut the underside of the shingles to reduce blade wear.



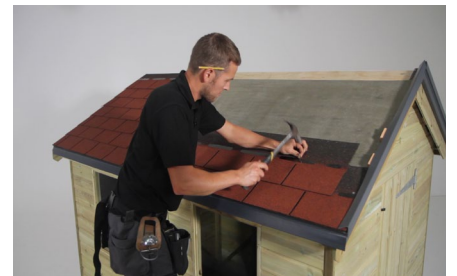
### Fixing base course

Position and nail the base course strip onto the roof, aligning the bitumen tabs with the position of the shingle eaves course tile tabs.



### Fixing eaves course

The eaves course is then fixed. Heat is used to consolidate the bond of the eaves course tile tab onto the eaves base course.



### Eaves and Verge

The shingles are then fixed diagonally across the roof to the line of the verge.

## Eaves detail strip application



### Fixing eaves course

Position and unroll the detail strip square to the line of the eaves. Note: The detail strip is often not an exact colour match to the shingle granules.



### Forming drip edge

Nail the detail strip using 20 mm galvanised large headed clout nails, form the drip edge either dressing into a gutter or nailing at 5 cm centres to the fascia.



### Detail tape eaves verge

The detail strip can also be used to seal the verge by forming the drip edge and securing by nailing at 5 cm onto the bargeboard fascia.



### Fixing eaves course

Overlay the eaves course strip onto the roof and nail into place as described above.



### Fixing eaves course

Apply bitumastic adhesive below the eaves shingles course tile tabs to secure the tile tabs in position.

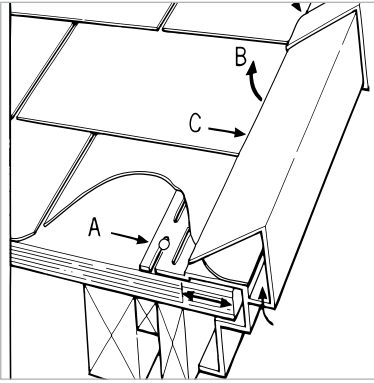


### Fixing to verge

Apply bitumastic adhesive below the shingles up the line of verge to secure the shingles in place.



## Verge detail using preformed verge



### Bardoline verge detail

Provides a heavy duty finish to weather the verge abutment.



### Bardoline verge trim

To secure the verge unit provide a 25mm deck overhang over verge fascia line. Position the verge onto the decking lap and nail dry verge trim to decking through preformed slots (A).



### Basic verge detail

Fix membrane / shingles by lifting the cover strip (B) (use wedges). Slide shingles into position (C). Use trim connectors to join verge trims (D) and align verge units at ridge cut and seal with sealant.

## Verge and ridge using detail strip



### Verge using detail tape

The detail strip is used to seal the verge weathering. Form the drip edge by folding down 5 cm drip edge and secure by nailing at 5 cm into the bargeboard fascia.



### Fixing detail tape

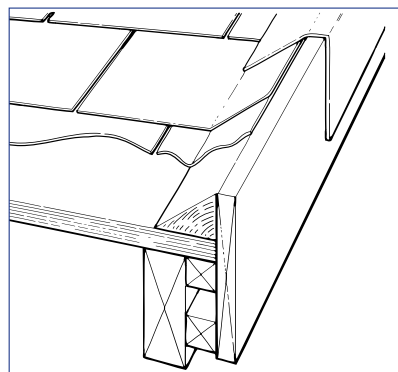
Lay membrane over detail tape and nail in position at 10 cm centres. Next fix the shingles using bitumastic adhesive to bond the shingles onto the detail tape up the line of the verge.



### Ridge using detail tape

The detail strip at the verge is cut and sealed at the ridge verge abutment. Detail strip is then fixed square to the ridge line on a line of bitumastic adhesive and nailed at 10 cm centres.

## Verge alternative fixing options



### Fabricated verge option

A raised verge detail can be used with a separate cover flashing can be fabricated.



### Fabricated verge detail

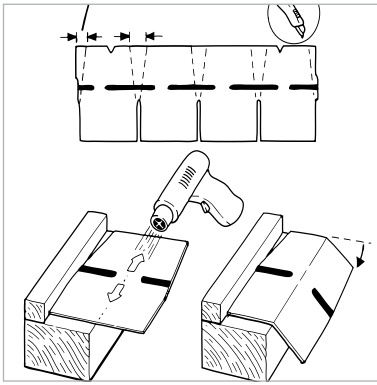
Fix timber-tilting fillet to raised bargeboard. Cut and form Bardoline strips using gentle heat from hot air gun up up-stand. Seal edge with bitumastic sealant adhesive.



### Fabricated verge detail

Form verge cap using metal flashing, or Bardoline ridge tiles. Alternatively Onduline batten cloak pieces can be used nailed and sealed to shingles using Onduline adhesive.

## Ridge and hip using shingle tile pieces



### Fabricating ridge tiles

For a superior aesthetic and weathering of ridge and hips.



### Fabricating ridge tiles

On a bench cut the underside of the rectangular shingle into four pieces, trimming the top lapped section removing the side slot sections as illustrated.



### Ridge tile coverage

The cut ridge pieces provide a coverage of 14.5 cm per tile, so prepare sufficient for your project. Caution always use a deep straight edge to protect fingers.



### Forming ridge tiles

Next, either make a former or use the edge of the bench to form the shingle ridge tiles. Then gently heat along fold line using a heat gun.



### Forming ridge tiles

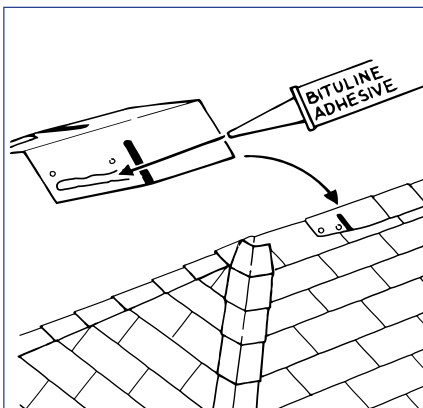
The Bardoline ridge tile is then formed by bending over the angled former to fabricate the Bardoline ridge tile.



### Forming ridge tiles

Place the Bardoline ridge tiles over the edge of the bench, they can then be taken to the roof and laid as described below.

## Fixing Bardoline ridge and hip tiles



### Ridge and hip bond

On exposed locations reinforce the tile lap bonding with Onduline lap adhesive applied to the section to be lapped or as a continuous bead if Detail tape is used.



### Laying ridge and hip tiles

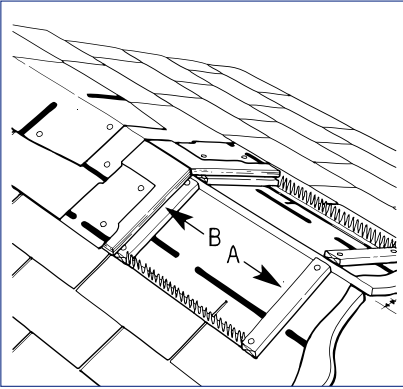
The ridge tiles are positioned on the roof and nailed through the lapped section using 20 mm large headed galvanised clout nails.



### Preparing eaves course

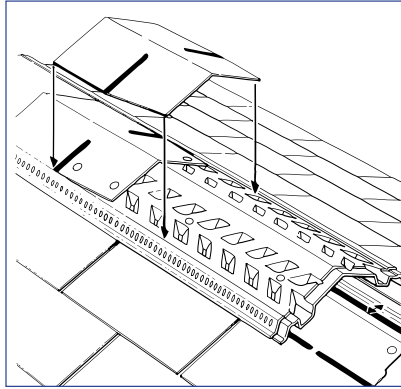
The fixing is completed by heating the shingle bitumen sealant strip and using a batten to consolidate the joint. On exposed locations reinforce this bond with Onduline sealant.

# General fixing details



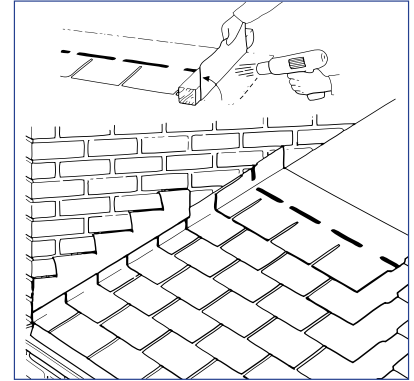
## Fabricated vented ridge

Fix ridge as Fig. 9. Nail 12 x 150mm support battens (A) at 200mm centres. Fix ventilator comb and overlay with 12mm plywood raised ridge (B), allow a 12mm overhang at ridge. Overlay with Bardoline strips/ridges.



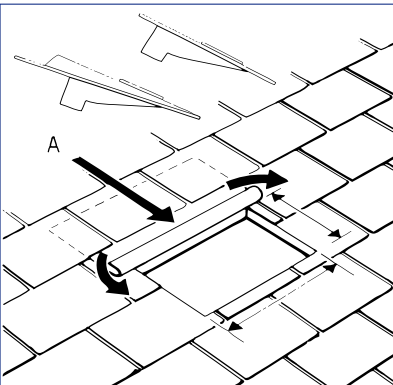
## Preformed ventilated ridge

Provide 25mm gap in decking at ridge and lay tile strips to ridge. Lap and fix ridge unit by nailing through designated line. Overlay with Bardoline ridge tiles fixed as previously described.



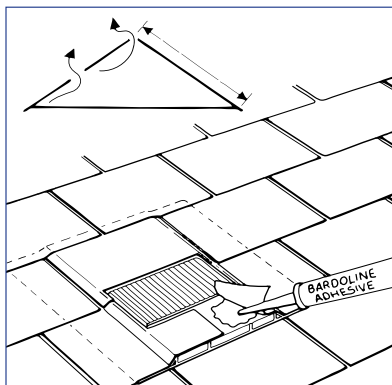
## Side wall abutment

Dress the underlay 65 mm up the wall abutment, then form a 75 mm upstand in the shingles by gently heating and bending the fold line using a hot air gun. Finish with a separate cover flashing.



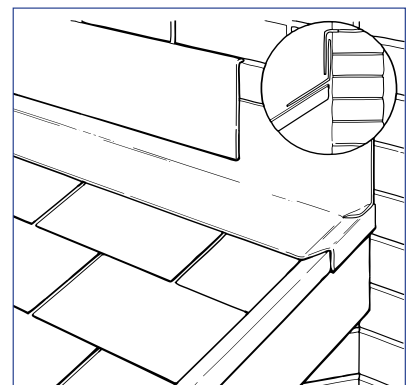
## Bardoline ventilator

Select the correct ventilator to suit roof pitch. Cut hole in decking and form a welt in the Ondutiss (A) under tile strip above.



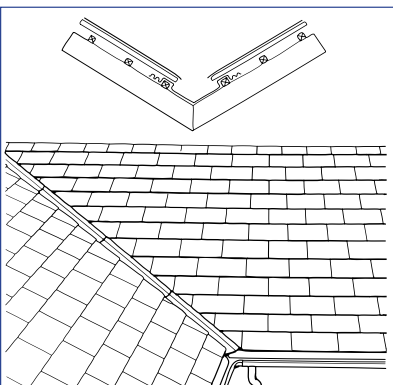
## Fixing in line ventilator

Position and fix ventilator by nailing apron. Cut and overlay Bardoline tile strips using adhesive to bond onto ventilator. Connectors are available to connect to soil vent pipes.



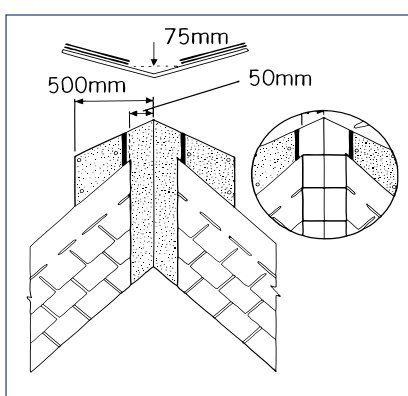
## End wall abutment

Gently heat tile strip and fold up 75mm upstand to wall abutment. use adhesive to bond tile strips. Alternatively use a metal apron flashings Finish with a separate cover flashing.



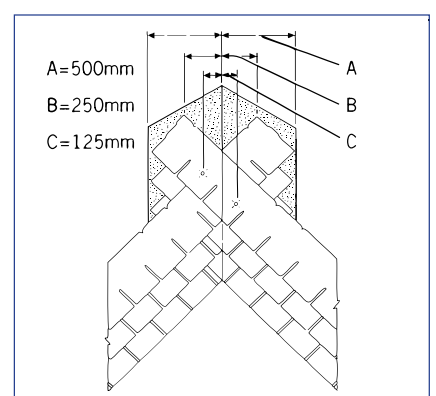
## Valley preformed lining

Proprietary valley linings can be easily incorporated into decked roof construction. Envelope the exposed edge of decking with trimmed detail tape. Fix the Bardoline strips with a 6mm overhang from the deck into the valley.



## Bardoline lined valley

High performance mineral surfaced membrane to line valley. Fix tile strips to valley line. Alternatively lay ridge pieces on membrane and overlap strips, sealing edges with sealant adhesive.



## Bardoline lapped valley

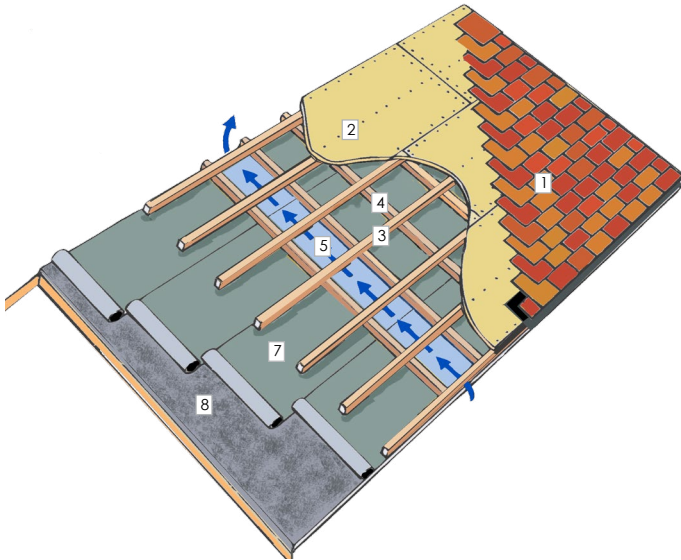
Line the valley base with Ondutiss underlay, then lap alternative courses of tile strips over it. Mechanical fixings should not be made within 125mm of valley base.

# Bardoline roof renovation system

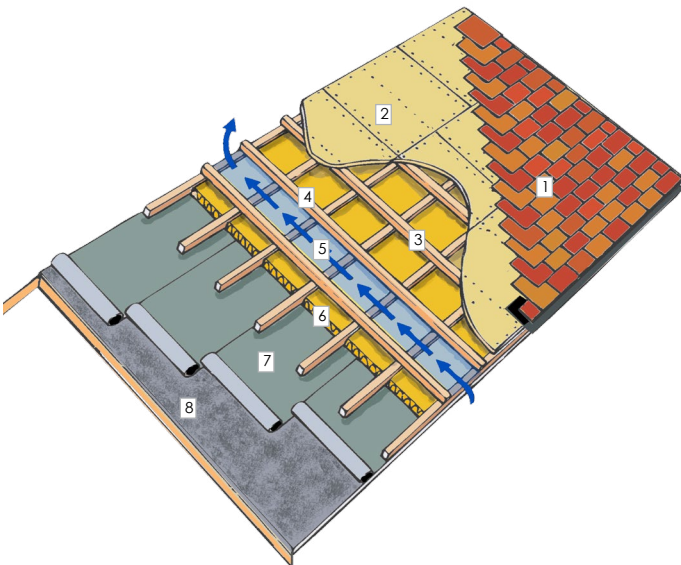
## Over roofing of existing deteriorated felt pitched roofs:

The light weight of the Bardoline system makes it an ideal solution for overshooting existing failing and deteriorated pitched roof coverings in either cold or warm roof configurations. It can also be used to form vertical wall rain screen applications.

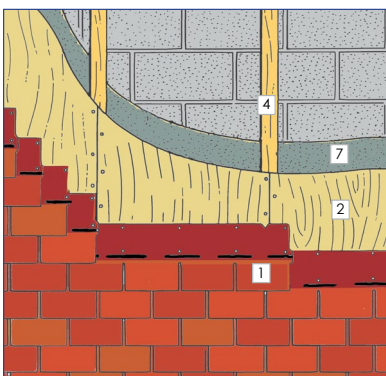
### Cold roof application



### Warm roof application



### Wall cladding application



#### Wall cladding fixing specification

Form studded plywood framed partition with vapour permeable mebrane. Fix the tile strips as per roofing specification, but with an additional line of nail fixings at the top of each strip.

#### Note:

Technical advice should be sought to detail your specific project specification and mechanical fixing requirements

#### Roof preparation:

First survey, clean and upgrade the roof structure as required and repair any deteriorated to make it suitable to accept Bardoline over roofing.

Determine the fixings required to secure the support battens to the existing roof support structure as required to confirm to British Standards and Codes of Practice. Note: The fixings must offer sufficient resistance to wind uplift specialist fixings suppliers should be consulted for advice.

- 1 Bardoline tile shingles
- 2 12 mm plywood decking
- 3 50 x 25 mm deck framing batten
- 4 50 x 50 mm support treated batten
- 5 Ventilation channel
- 6 50 mm\* rigid insulation board
- 7 Ondutiss underlay membrane
- 8 Existing roof covering

#### Cold roof application (typical).

Overlay existing roof deck with Onduline Ondutiss underlay membrane laid with 100mm laps. Next fix 50 x 50 mm treated counter battens at 450mm centres to eaves, then overlay and screw 50 x 50 mm treated battens to the lower support battens to form framing to accept the 12mm exterior quality plywood decking. Provide high and low ventilation to complete the ventilated roof section.

#### Warm roof application (typical).

Differs from the cold roof in laying roof insulation boards laid between counter battens laid at 50cm centres to which 50 x 50 mm treated battens to the lower support battens to form framing to accept the 12mm exterior quality plywood decking. The Bardoline roof can then be fixed onto the decking in compliance with the fixing instructions.

# Other Instructional leaflets



## ONDULINE CLASSIC

The Classic Onduline bituminous corrugated roofing and cladding system is lightweight but delivers a heavy duty roofing performance, which combined with its low maintenance attributes make Onduline Classic the professional's choice for a wide range of roofing projects, ranging from large industrial and agricultural projects to a simple garden shed. **Onduline Classic sheets are also the only approved sheet for use with the Ondutile tile underlay system.**



## ONDUVILLA TILES

Onduvilla tile strips are produced with a unique three tone colour in an attractive 'bold roll' tile profile. This recreates the warm natural colours that are normally only associated with expensive and heavy clay roof finishes. Onduvilla is produced in an easy to handle and fix tile strip format, making them the ideal roof covering for a wide range timber framed garden and commercial buildings.



## ONDULINE MINI 18 SHEETS

Onduline Mini 18 sheets are designed with a low profile corrugation which compliments perfectly the scale of sheds, summer houses, workshops and garages. Making Mini 18 the ideal 'Do it Once' upgrade to your garden and timber frame buildings.

**Mini profile sheets are also the only approved sheet for use with the Ondutile 'low line' tile underlay system.**

## MAINTENANCE

To ensure a long service life for your shingles the roof should be cleaned regularly of leaves and debris, as leaf mould can reduce the service life of the product. Also check that tree and shrub overhanging branches are not into contact with the surface of the roof; as wind generated movement can cause surface damage.

## TERMS AND CONDITIONS

Although the colouring process in the manufacture of the Onduline products are long lasting, as with similar natural roofing materials it is subject to the effects of weathering over its lifetime. The colour can also differ between production batches.



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[www.onduline.co.uk](http://www.onduline.co.uk)

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