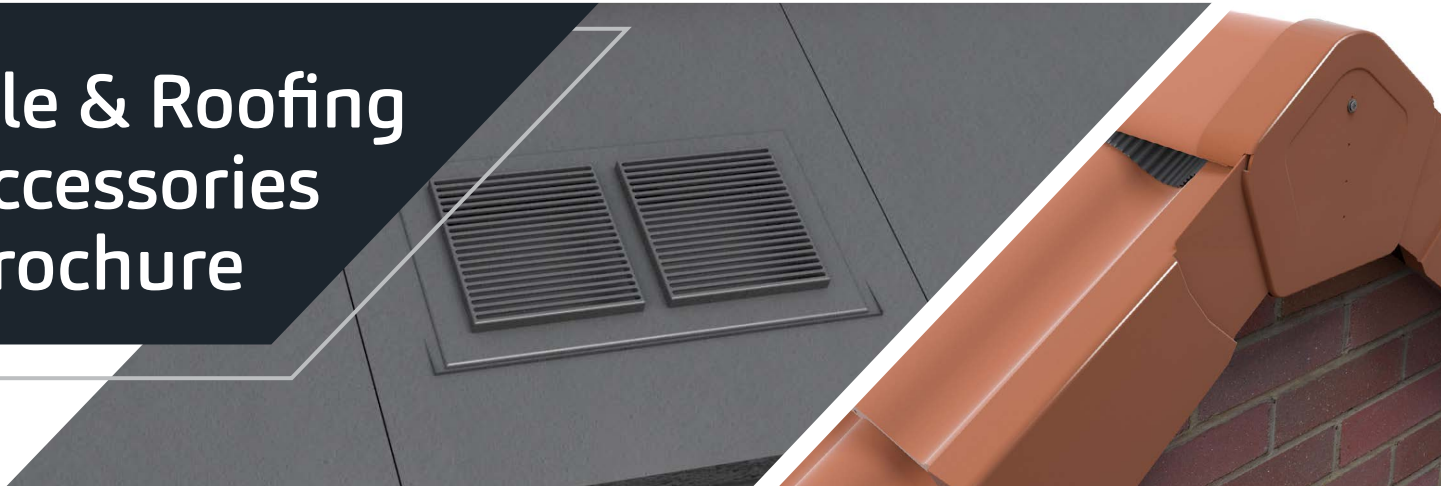




Tile & Roofing Accessories Brochure



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Who we are...



The Tile Guide has been produced by the team at Tileworks alongside industry professional and our partners from Kytun, who provide the ancillaries to the business for use alongside the roof tiles. It also serves as a guide for sales teams and others to assist them in their understanding of the Persimmon manufacturing process and inherent quality of the product.

Following the factory's commissioning in late 2019, Tileworks and Brickworks form the two halves of the manufacturing hub at Harworth near Doncaster and the first tiles were supplied

to sites in spring 2020. The equipment was supplied from Italy by Vortex Hydra, and is capable of manufacturing 100-120 tiles per minute, giving the plant the capability of producing c. 14 million tiles when running 2 shifts, sufficient to supply the entire large format concrete tile requirement of the group.

The Tile Guide will cover all aspects including manufacturing through to installation and we hope that you will find it informative and useful – please do get in touch if you have any further questions.



Raw Materials

The principle raw materials used during manufacture are sand and cement together with pigments which are added to produce the base colours for the tiles along with paint which provides the final surface finish. The sand is sourced locally from a specific ISO9001 accredited quarry where it is graded and blended using mesh screens, creating a sand containing the appropriate profile of particle sizes required to produce a tile with good strength, low permeability and excellent surface finish. This enables the final product to exceed the requirements of BS EN 490, the standard that all tiles are manufactured to within the UK.

Mixing & Batching Process

The batching process uses machinery from the world's leading manufacturers of equipment for the concrete, construction and environmental industries. The plant is fully automated with 3D technology monitoring the mixing process at each stage. A pre-set batch quantity is programmed and each individual raw material is weighed to a specific weight and the moisture content of the raw material is calculated by the equipment using digital microwave technology, giving a digital output direct to the batching programme. Measurements are taken 25 times per second as the material passes over the face of the probe, allowing for rapid detection of any moisture changes and enabling real time adjustments to maintain the optimal aggregate to water ratio.

Cement & pigment is supplied by leading manufacturers operating recognised standards of EN197 and EN12878 respectively. The delivery of these elements to the mixer is linked to and controlled by the batching system, with integrated weighing vessels providing the exact quantity requested. The raw materials are blended together by 8 mixing tools connected to 3 arms which forms the star mixing action, guaranteeing a constant supply of high quality, fully homogenised semi-dry concrete. The now coloured concrete is held in hoppers beneath the mixer and is delivered to the extrusion machine on continuous rubber belting.



Extrusion Machine

The extrusion machine was supplied and installed by Vortex-Hydra, the world leader in concrete tile equipment with over 50 years of innovation and industry experience behind them. The equipment includes a fully integrated visualisation control screen that manages all aspects of the process along with the Programmable Logic Controller (PLC) control system. Rotating pins within the tungsten-carbide extruder squeezes the concrete through a shaped aperture and onto a profiled aluminium pallet where blades cut the front and back edges of the tile. The tiles are produced at the rate of up to 120 tiles per minute, with the extruder aperture forming the shape of the top of the tile and the pallet the bottom.

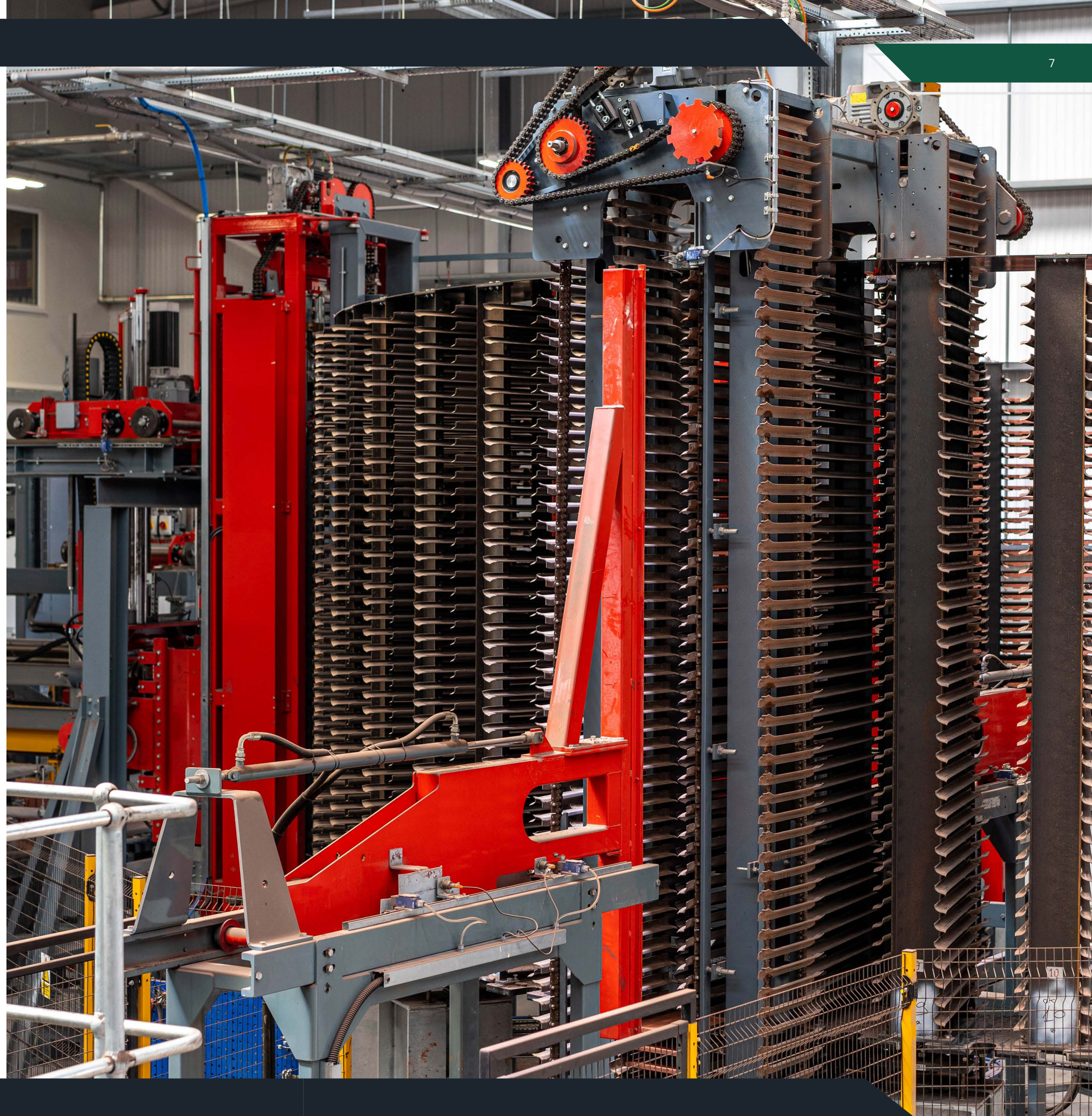
Immediately after the wet tile is formed, it is delivered into a rotating circular curing chamber where it is kept at a predetermined temperature & humidity to maintain the optimum atmospheric conditions for curing the concrete, ensuring the cementitious reaction is constant and controlled. The curing chamber completes full rotation in a minimum of 5 hours but the tiles may be held longer to ensure they are sufficiently cured to withstand the packaging process. As the tiles exit the chamber they pass over the de-palleting machine which returns the empty pallet to the extruder and delivers the tile to the paint booth. At this point the tiles are given a final inspection and any rejects are removed before they pass through the drying rotary and onto the automated packaging line where they are strapped, palletised and hooded.

Throughout the manufacturing process controls are in place to record the quality standards expected from each process. Every batch produced by the batching plant is recorded to ensure any deviation from the desired mixing process is highlighted. Sample tiles are taken from the line prior to and after curing to our in-house testing facility where they are measured, checked for fit, weighed, tested for flexural strength and permeability. Continuous inspection of all tiles is done at the extruder and inspection station, with any tiles that do not meet the required standard being removed before entering the packaging line. Every pack has a batch code printed onto the cover, which allows for full traceability of the product.

Manufacturing standards/ specifications/Approval

Our tiles have been approved for use on NHBC, LABC and Premier sites. They have been tested and declared to comply with BS EN490 as confirmed by the annual type tests carried out by Lucideon, an external UKAS accredited testing facility, therefore meeting the warranty providers' required specification. The type test comprises three separate tests which are conducted according to BS EN491 - impermeability and flexural strength (both before and after freeze thaw tests) and dimensional tolerances (including flatness, nib support, mass, hanging length and cover width).

Daily in-house testing is also carried out on a sample from each batch by our Quality Technician, which except for the absence of freeze-thaw, mirror the type testing at 7 and 28 days. The in-house equipment used in our tests is calibrated by the machine supplier at regular intervals throughout the year. No tiles are sent out to sites until they are a minimum of 28 days old and have passed the required strength threshold.



TILEWORKS TILE RANGE

SEAWAVE, TLE & Duo TLE TILE RANGE

Seawave Tile



Seawave Grey Tile

Code TSG

Size Length: 420mm

Width: 334mm

Profile: 26mm

GREY



Seawave Anthracite Tile

Code TSA

Size Length: 420mm

Width: 334mm

Profile: 26mm

ANTHRACITE



Seawave Terracotta Tile

Code TST

Size Length: 420mm

Width: 334mm

Profile: 26mm

TERRACOTTA

[Technical Datasheet - Click here](#)

TLE Tile

	TLE Grey Tile Code TTG Size Length: 420mm Width: 334mm Profile: 18.5mm	GREY
	TLE Anthracite Tile Code TTA Size Length: 420mm Width: 334mm Profile: 18.5mm	ANTHRACITE
	TLE Terracotta Tile Code TTT Size Length: 420mm Width: 334mm Profile: 18.5mm	TERRACOTTA

[Technical Datasheet - Click here](#)



Duo TLE Tile

	Duo TLE Grey Tile Code TDG Size Length: 420mm Width: 334mm Profile: 18.5mm	GREY
	Duo TLE Anthracite Tile Code TDA Size Length: 420mm Width: 334mm Profile: 18.5mm	ANTHRACITE
	Duo TLE Terracotta Tile Code TDT Size Length: 420mm Width: 334mm Profile: 18.5mm	TERRACOTTA

[Technical Datasheet - Click here](#)

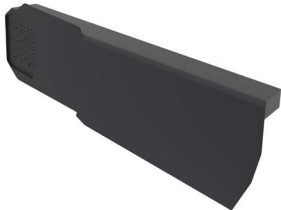
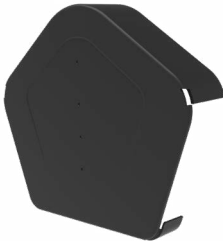




DRY VERGE
INDIVIDUAL DRY VERGE

Designed to prevent weather ingress and mortar degradation at the roof edge with our interlocking dry verge system. With a maximum batten gauge of 350mm and a simple slide and fix system of installation the product is roofer friendly. The system is suitable for use on new builds and refurbishments at any roof pitch.

Individual Dry Verge

	FFV401 Dry Verge Unit Right Hand Code FFV401 Colour Black Grey Terracotta Pk. Qty 50		FFV402 Dry Verge Unit Left Hand Code FFV402 Colour Black Grey Terracotta Pk. Qty 50
	FFV407 Dry Verge Unit Ridge Cap Multi Ridge Code FFV407 Colour Black Grey Terracotta Pk. Qty 10		FFV405 Dry Verge Starter Unit Code FFV405 Colour Black Grey Terracotta Pk. Qty 10
	FFV408 Mono Ridge Cap Left Hand Code FFV408 Colour Black Grey Terracotta Pk. Qty 10		FFV409 Mono Ridge Cap Right Hand Code FFV409 Colour Black Grey Terracotta Pk. Qty 10

Technical Information

Meets BS 5534 Code of Practice for Slating & Tiling and NHBC requirements.
Complies with all other relevant regulations and Standards.
Manufactured to ISO 9001 Quality Management Systems.

Compatibility

Compatible with the Tileworks TLE, Duo TLE and Seawave tiles.

Single Piece Length: 400mm

Available Colours:



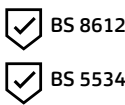
Grey



Anthracite

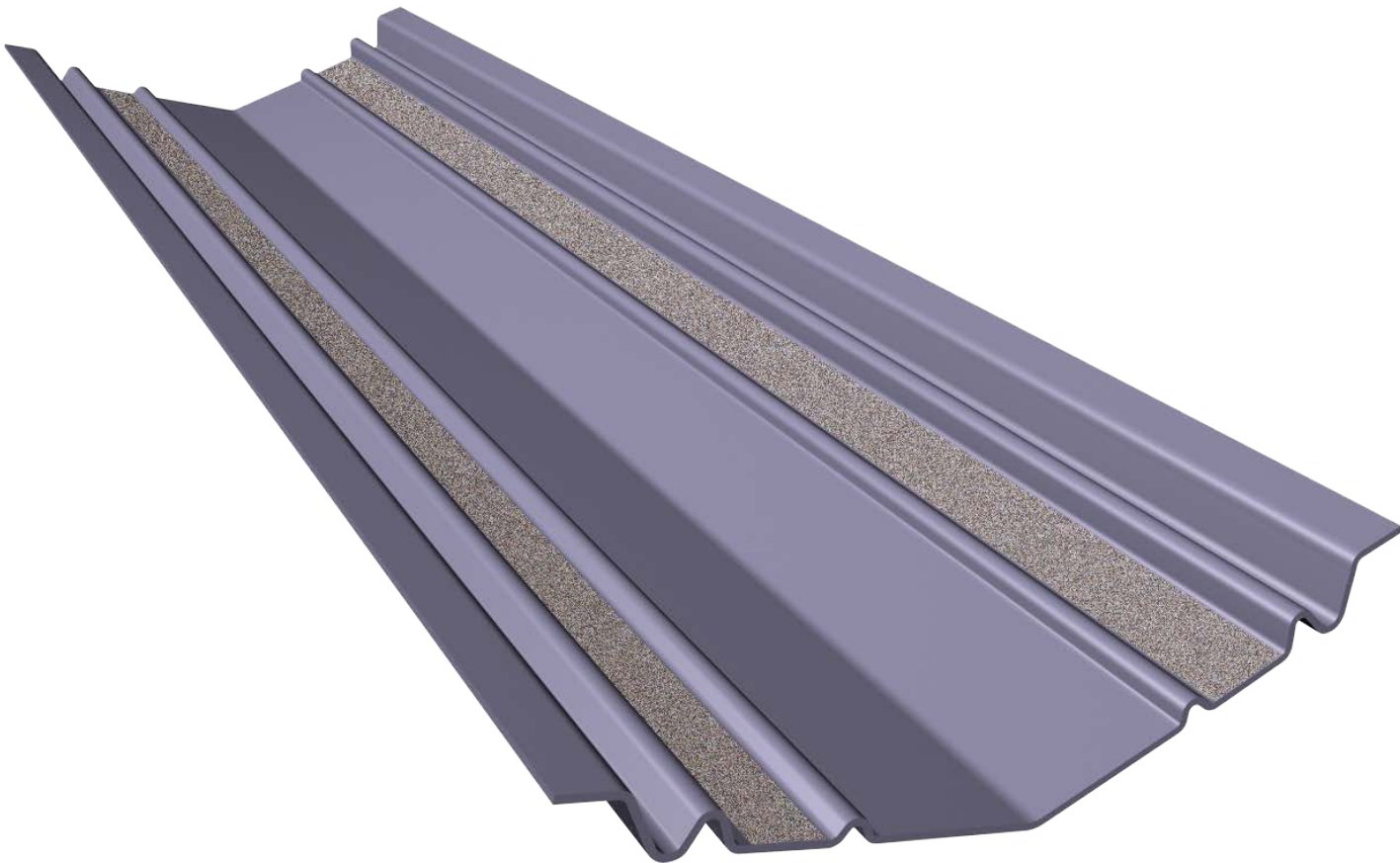


Terracotta



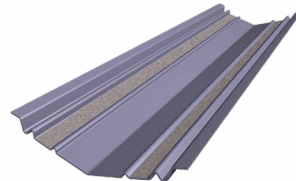
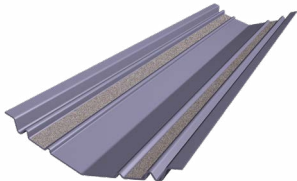
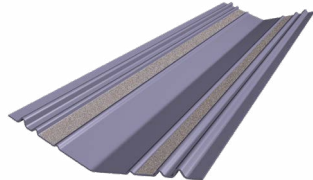
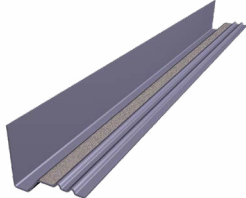
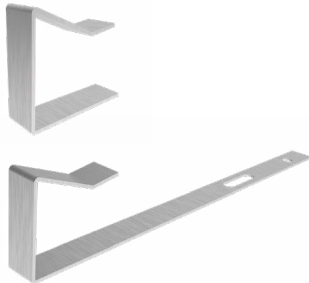
DRY VALLEY

GRP VALLEY TROUGH

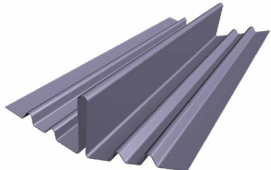
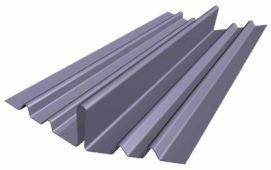
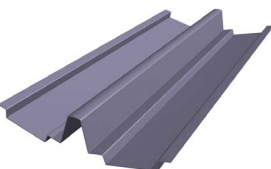
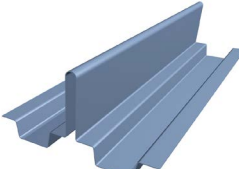


GRP Valley Troughs - STANDARD RANGE

Our **GRP Valley Troughs** can be used with clay or concrete tiles or slate roofs, as well as profiled GRP or metal roofs. Options are available for wet or dry fixing (with or without mortar).

	GTB13 Narrow Valley Single lap tile Over batten fix Code GTB13 Size 360mm x 3m		GTB14 Standard Valley Single lap tile Over batten fix Code GTB14 Size 400mm x 3m
	GTF14 Standard Valley Flat fix Under batten fix Code GTF14 Size 400mm x 3m		GAS1 Abutment Soaker Over batten fix Code GAS1 Size 140mm x 3m
	CLVH001 Dry Valley Clips Short & Long Code CLVH001 Short CLVH002 Long Qty 100		

GRP Valley Trough - DRY FIX RANGE

	GDFVTUB105 Valley Trough High Profile Tiles Under batten fix Code GDFVTUB105 Size 400mm x 3m	UNDER		GDFVTUB80 Valley Trough Low Profile or Plain Tiles Under batten fix Code GDFVTUB80 Size 400mm x 3m	UNDER
	GDFVT110 Valley Trough Concrete/clay tiles Over batten fix Code GDFVT110 Size 400mm x 3m	OVER		GDFBS110 Dry-Fix Bonding Strip Concrete/clay tiles Over batten fix Code GDFBS110 Size 225mm x 3m	OVER/BONDING

LEAD FREE FLASHING

Lead free flashing is made from a modified polyethylene compound with an integral aluminium mesh reinforcement, making it extremely easy product to install and can be worked and formed in the same way as lead.

The product is faced with a fine grey mineral giving it excellent UV protection.

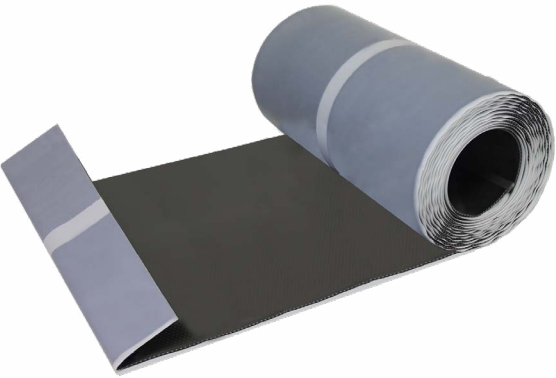
Using a lead alternative dress the intersection of the 2 valleys.

At the intersection of the valleys a strip or strips of lead free flashing is cut from the roll and lapped to cap both the valley troughs to waterproof the saddle.

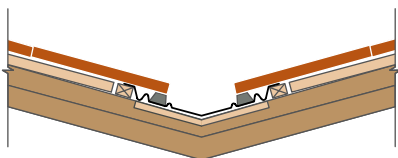
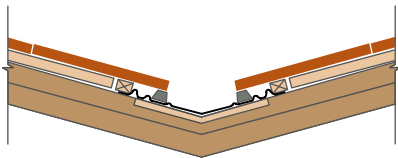
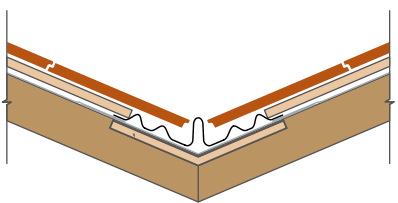
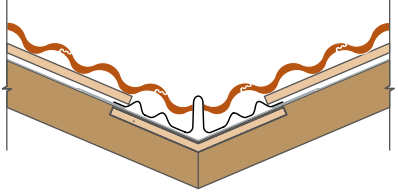
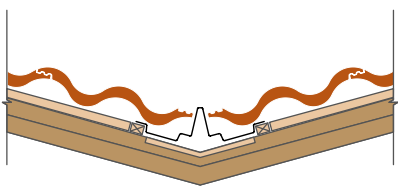
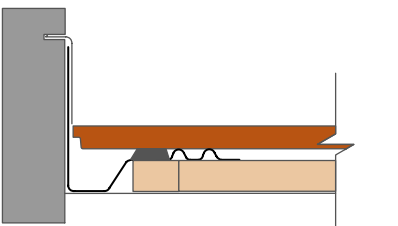
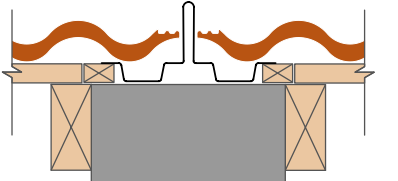
In some case a number of pieces of lead free flashing may be required.

FLASH LEAD FREE - PREMIUM & TEXTURED

Code	Description	Colour
FLP300	Premium - 300mm x 5m	Grey / Black
FLP450	Premium - 450mm x 5m	Grey / Black
FLA150	Textured - 150mm x 5m	Grey / Black
FLA300	Textured - 300mm x 5m	Grey / Black
FLA450	Textured - 450mm x 5m	Grey / Black



GRP Valley Trough | INSTALLATION GUIDELINES

	GTB13 / GTB14 Compatability Flat TLE Tile, Flat Duo Over batten fix	STANDARD
	GTF14 Compatability Flat TLE Tile, Flat Duo, Seawave Tile Under batten fix	
	GDFVTUB80 Compatability Flat TLE Tile, Flat Duo Under batten fix	DRY FIX
	GDFVTUB105 Compatability Seawave Tile Under batten fix	
	GDFVT110 Compatability Flat TLE Tile, Flat Duo Over batten fix	
	GAS1 Compatability Flat TLE Tile, Flat Duo, Seawave Tile Over batten fix	SOAKERS/BONDING
	GDFBS110 Compatability Flat TLE Tile, Flat Duo, Seawave Tile Over batten fix	



DRY RIDGE

DRY RIDGE KITS



DRY RIDGE PRODUCTS

Our universal Ridge System provides mechanical fixing of Ridge and Hip tiles. Fully compliant with the requirements of BS 5534 and BS 5250. All products have also been tested to BS 8612 and works with both flat and rolled tiles.

UNIVERSAL DRY RIDGE KIT

Code	Size	Colour
DRUA02	6m	Anthracite

6m RIDGE KIT - ANTHRACITE

- 1 X VENTILATED RIDGE ROLL 6m (ANTHRACITE)
- 13 X UNIVERSAL DRY RIDGE UNION BRACKET
- 13 X UNIVERSAL DRY RIDGE SCREWS & WASHERS
- 13 X UNIVERSAL DRY RIDGE CLAMPING PLATES
- 10 X UNIVERSAL DRY RIDGE BATTEN METAL STRAPS

MONO DRY RIDGE KIT

Code	Size	Colour
DRUA09	6m	Anthracite

6m MONO RIDGE KIT - ANTHRACITE

- 1 X VENTILATED RIDGE ROLL 6m (ANTHRACITE)
- 13 X MONO RIDGE BRACKET
- 13 X DRY RIDGE SCREWS & WASHERS
- 13 X DRY RIDGE CLAMPING PLATES
- 10 X DRY RIDGE BATTEN METAL STRAPS



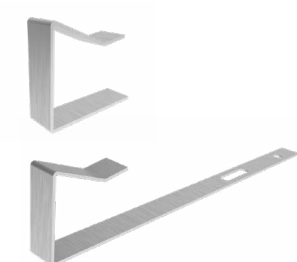
Optional Components



RIDGE HIP TRAY

Universal hip trays provide quick and easy alignment of hip tiles. Available in 1.2m.

Code	HIP1200
------	---------



Hip Clips Short & Long

Code	HIPC001 Short HIPC002 Long
Qty	100

RIDGE TILE RANGE



	Grey Ridge Tile Code RMG Size Length: 455mm Width: 255mm Height: 92mm High GREY
	Anthracite Ridge Tile Code RMA Size Length: 455mm Width: 255mm Height: 92mm High ANTHRACITE
	Terracotta Ridge Tile Code RMT Size Length: 455mm Width: 255mm Height: 92mm High TERRACOTTA

HIP STARTERS



	Grey Hip Starter Code THG Size Length: 500mm (Tip) 400mm (Base) Width: 255mm Height: 92mm High GREY
	Anthracite Hip Starter Code THA Size Length: 500mm (Tip) 400mm (Base) Width: 255mm Height: 92mm High ANTHRACITE
	Terracotta Hip Starter Code THT Size Length: 500mm (Tip) 400mm (Base) Width: 255mm Height: 92mm High TERRACOTTA

ROOF VENTILATION

VENTILATION PRODUCTS

The Ventilation requirements of roofs vary from case to case depending on the individual layout of the property. To meet these requirements, we offer a range of Tile vents which are undergoing rigorous independent testing with the Building Research Establishment (BRE). These products can also be used for soil pipe ventilation and terminals for mechanical extraction.

We also offer a wide range of eaves ventilation products.

For technical guidelines on roof space ventilation, please see pages 22-23.

ROOF TILE VENTS



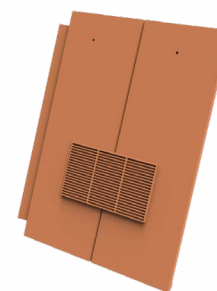
**RTVF010
In-Line Flat Roof
Tile Vent 10K**

Code RTVF010
Colour As below
Pk. Qty 10
Airflow 10,000mm²/m



**RTVSW010
In-Line Seawave Roof
Tile Vent 10K**

Code RTVSW010
Colour As below
Pk. Qty 10
Airflow 10,000mm²/m



**RTVFD010
In-Line TLE Duo
Roof Tile Vent 10K**

Code RTVFD010
Colour As below
Pk. Qty 10
Airflow 10,000mm²/m



**RTVA100
Tile Vent Adaptor**

Code RTVA100
Colour Black
Pk. Qty 10



**RTVH100
Flexi-Hose "Easy Cut"
600mm (with clip)**

Code RTVFD010
Colour Black
Pk. Qty 10

Available Colours:



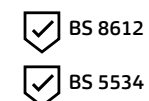
Grey



Anthracite



Terracotta



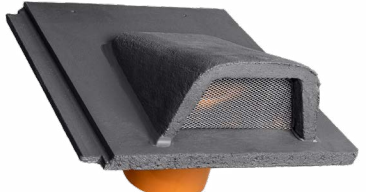
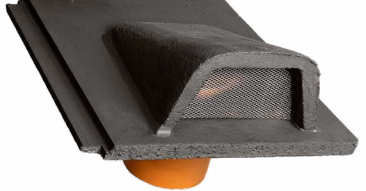
SEAWAVE - CONCRETE TILE VENTS



	Seawave Grey Concrete Tile Vent Code TVSG Size Length: 420mm Width: 334mm Profile: 26mm GREY
	Seawave Anthracite Concrete Tile Vent Code TVSA Size Length: 420mm Width: 334mm Profile: 26mm ANTHRACITE
	Seawave Terracotta Concrete Tile Vent Code TVST Size Length: 420mm Width: 334mm Profile: 26mm TERRACOTTA

TLE/DUO TLE - CONCRETE TILE VENTS



	TLE/Duo TLE Grey Concrete Tile Vent Code TVTG Size Length: 420mm Width: 334mm Profile: 18.5mm GREY
	TLE/Duo TLE Anthracite Concrete Tile Vent Code TVTA Size Length: 420mm Width: 334mm Profile: 18.5mm ANTHRACITE
	TLE/Duo TLE Terracotta Concrete Tile Vent Code TVTT Size Length: 420mm Width: 334mm Profile: 18.5mm TERRACOTTA



ALUMINIUM ROOF TERMINAL

The EPDM cone, which is trimmed on site to fit, is ingeniously locked to a high grade and malleable 99.9% pure aluminium base.
The fast economical way to flash a tile roof.

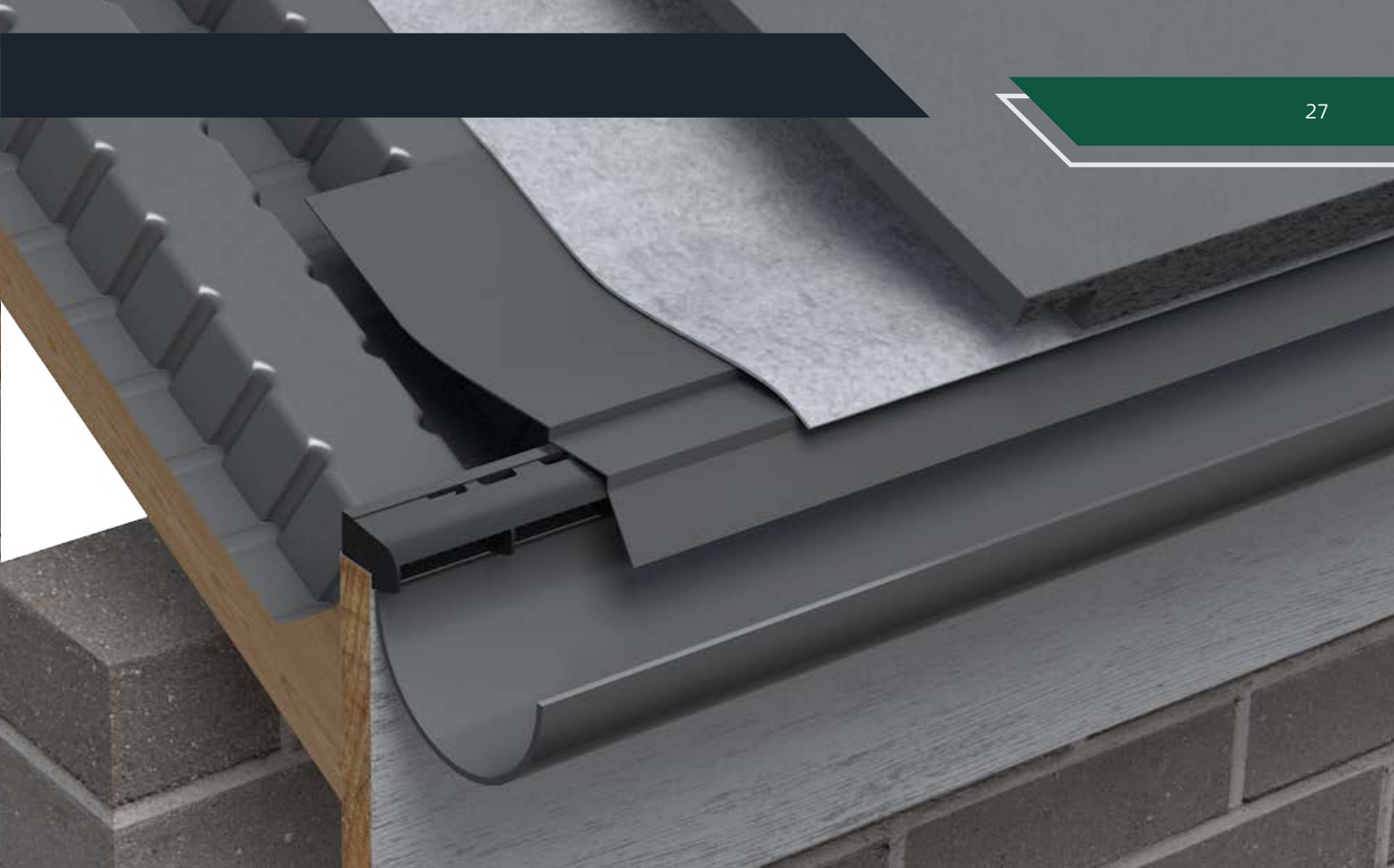
Pipe External	Roof Pitch	Base Size	Base Type	Code Black EPDM
50 - 170mm	0-45°	500 x 600mm	Aluminium	SDA101
110 - 200mm	0-45°	600 x 600mm	Aluminium	SDA102

NU LEAD ROOF TERMINAL

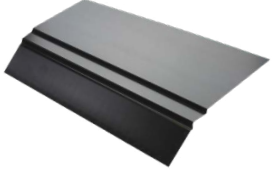
No more concern about Unprotected Lead

The Terminal has been developed for use where the handling of lead and associated environmental issues are of concern. Combines a long-life, weather-resistant EPDM cone with a grey primed acrylic coated lead base. The unique thermo-baked coating does not affect the lead's malleability, and prevents leaching onto the roof and into gutters, downpipes and the water table.

Pipe External	Roof Pitch	Base Size	Base Type	Code Black EPDM
50 - 170mm	0-45°	600 x 450mm	Nu-Lead	SNL101
175 - 330mm	0-45°	850 x 550mm	Nu-Lead	SNL103



EAVES VENTILATION

	RAFTER ROLL		EAVES PROTECTOR
	Code Size Qty.		Code Size Qty.
	RPV300 300mm x 6m 4		EP15 1.5m Lgth 10
	RPV400 400mm x 6m 4		
	OVER FASCIA VENT		BIRD COMB
	Code Size Qty.		Code Size Qty.
	OFV10 10mm x 1m 60		BC001 1m 10
	OFV25 25mm x 1m 50		
	"ONE-FIX" 2 IN 1 Eaves Ventilation System		"ONE-FIX" 3 IN 1 Eaves Ventilation System with Comb Filler
	Code Size		Code Size
	OVEP210 1m x 10mm		OVEP310 1m x 10mm

Roof Membrane

VP300

Protect VP300 can provide a secondary line of defence against wind driven rain and snow, the reduction in wind uplift loads on the roof covering and is also able to be used as a temporary roof covering before the slates or tiles are applied.

BENEFITS

- Vapour permeable with a performance better than required in BS 5250.
- Completely watertight providing at least 2.0m in water resistance.
- Good all round performance for its weight and one of the best in its class.
- UV and heat resistant.
- Tough and durable.
- Can be used as a temporary roof covering.
- BMTRADA Independently certified.
- Helps to avoid condensation risk

PRODUCT DESCRIPTION

Roll width:	1.0m
Roll length:	50m
Roll total area:	50m ²
Roll weight:	6.55kg
Appearance:	Embossed grey upper and white lower surface. Printed with product branding for ease of identification.



VP300 is suitable for zones 1-3

COMPATIBILITY

As with all vapour-permeable underlays, do not lay in direct contact with undried timber preservatives (whether water or solvent based). Protect OFV Eaves Skirt should be used at all gutter details.

PERFORMANCE

	MD	CD
Nail tear strength (N) to EN 12310-1 with mods	140	198
Unaged tensile strength (N/50mm) to EN 12311 with mods	225	160
Aged tensile strength (N/50mm) to EN 12311 with mods	190	130
Nail tear strength (N) to EN 12310-1 with mods	125gsm	
Unaged tensile strength (N/50mm) to EN 12311 with mods	-40°C	
Aged tensile strength (N/50mm) to EN 12311 with mods	0.17 MNs/g	
Watertightness Pass	Class W1	>2.0m hydrostatic head resistance

MD = machine direction (along roll), CD = cross direction (across roll).

UV and heat ageing conditions: UVA lamps at 50°C for 336 hours followed by heat ageing at 70°C for 90 days.



ROOF MEMBRANE - VP400

Protect VP400 PLUSLR is a highly vapour permeable roof underlay. It offers the lowest vapour resistance of any Type LR roofing underlay in its class, and yet it remains completely airtight. It is suitable for use in all pitched roofs.

Protect VP400 PLUSLR is both CE marked & BM TRADA certified.

BENEFITS

- Highly vapour permeable, but completely airtight.
- Completely watertight >7.0m water resistance.
- Strongest underlay in its class/weight range.
- UV and heat resistant.
- Tough and durable.
- Can be used as temporary roof covering.
- Has ‘unrestricted’ use for wind uplift in all exposure conditions in the UK and Ireland.
- BMTRADA Independently certified.
- Helps to avoid condensation risk in the roof space in accordance with BS 5250 and NHBC requirements.

PRODUCT DESCRIPTION

Roll width:	1.0m
Roll length:	50m
Roll total area:	50m ²
Roll weight:	6.55kg
Appearance:	Embossed grey upper and white lower surface. Printed with product branding for ease of identification.



VP400 is suitable for all zones

COMPATIBILITY

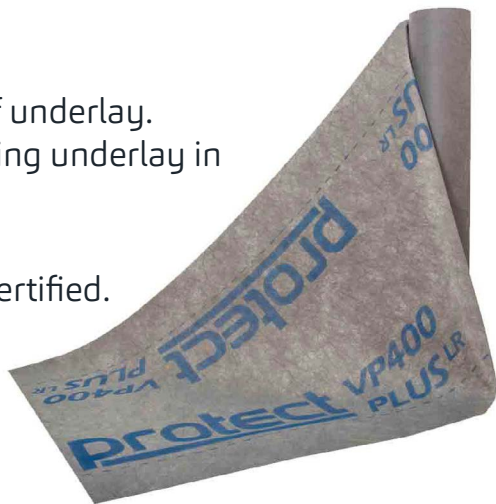
As with all vapour-permeable underlays, do not lay in direct contact with undried timber preservatives (whether water or solvent based). Protect OFV Eaves Skirt should be used at all gutter details.

PERFORMANCE

	MD	CD
Nail tear strength (N) to EN 12310-1 with mods	248	294
Unaged tensile strength (N/50mm) to EN 12311 with mods	325	305
Aged tensile strength (N/50mm) to EN 12311 with mods	290	295
Nail tear strength (N) to EN 12310-1 with mods	170gsm	
Unaged tensile strength (N/50mm) to EN 12311 with mods	-40°C	
Aged tensile strength (N/50mm) to EN 12311 with mods	0.08 MNs/g	
Watertightness Pass	Class W1	>7.0m hydrostatic head resistance
Wind uplift resistance unrestricted at 345mm batten gauge and 600mm rafter centres		

MD = machine direction (along roll), CD = cross direction (across roll).

UV and heat ageing conditions: UVA lamps at 50°C for 336 hours followed by heat ageing at 70°C for 90 days.



Installation Guide for Protect VP300 & VP400 Vapour Permeable Underlays

Introduction

This guide is intended for the use of Protect VP300 and VP400 vapour permeable roof underlays on Persimmon house types where the underlay is laid unsupported directly over rafters spaced at up to 600mm centres.

The two primary functions of roofing underlay are to 1) provide a secondary barrier against water penetration and 2) to reduce the wind loads acting on the roof tiles. Vapour permeable underlay also plays an important role in controlling condensation within the roof structure. It is therefore important that the underlay is installed correctly and in accordance with this guide and BS 5534.

Protect underlays will provide temporary protection against wind and rain prior to installation of the roof tiles. The roof tiles must be installed as soon as possible after the underlay and certainly no longer than a month. If the underlay is to be left exposed longer than this period, then a temporary protective covering must be installed over the underlay.

Product details

	VP300		VP400	
Roll Width	1m	1.5m	1m	1.5m
Roll Length	50m		50m	
Roll Total Area	50m ²	75m ²	50m ²	75m ²
Roll Weight	6.55kg	9.83kg	9.68kg	14.81kg

Installation

Generally

lay the underlay parallel with the eaves. Drape the underlay between each rafter sufficiently to enable any moisture on the upper surface of the underlay to drain away safely under the tile battens to the gutters and to prevent water reaching and penetrating the batten fixing holes. Do not drape the underlay more than 15mm to avoid the transference of wind loads to the roof tiles and to prevent noise nuisance caused by excessive flapping of the underlay through wind action.

Horizontal laps should be at least 150mm wide and must coincide with a tile batten. Increase the underlay lap where necessary to coincide with a tile batten. Do not install an extra batten to restrain the underlay lap as this may cause a trip hazard during installation of the roof tiles. Vertical laps should be at least 100mm wide and must coincide with a rafter.

Avoid tearing, penetrating or otherwise damaging the underlay and repair any penetrations or tears that do occur using an approved repair tape or replace the damaged piece of underlay.

Eaves

Install underlay support trays continuously along the eaves in accordance with the approved architectural detail. Lap the first course of underlay over the underlay support trays by at least 150mm. Do not allow the underlay to extend into the gutter or beyond the first tiling course.

Verge

Where a dry verge system is to be installed, finish the underlay to overhang the outer brickwork leaf or bargeboard by 40mm.

For mortar bedded verges, finish the underlay midway over the outer brickwork or outer rafter in the case of a gable ladder detail.

Ridge

Where a dry ridge system is to be installed, finish the underlay 30mm from the roof apex at each side of the ridge to allow roof space ventilation. If roof space ventilation is not required (for example, in a warm roof detail) lay the underlay from one side of the ridge to overlap the underlay on the other side by not less than 150mm.

Valley

For GRP valleys, lay a continuous 1 metre wide strip of underlay along the valley and lap the general underlay at each side over this by at least 300mm.

For lead-lined valleys, cut the underlay to the rake and dress over tilting fillets to lap onto lead valley. Do not lay the underlay under the lead.

Hips

Finish the underlay on one side of the hip along the hip line. Extend the underlay on the other side of the hip over the first underlay by at least 300mm.

Abutments

Extend the underlay up each side, top or back abutment by at least 150mm. Where a ventilator system is to be installed at a top abutment, finish the underlay 30mm from the wall or abutment upstand.

Pipe penetrations

Where a pipe or other component penetrates the underlay, cut a cross and turn the underlay up and tape to the pipe to give a tight, water-shedding fit.

If available, install a proprietary underlay protector directly above the penetration to direct water around the penetration. If a protector is not available, then install an additional piece of underlay, as shown in the detail here.



This information sheet is based on British Standards and good practice current at the time of writing. Persimmon Homes reserves the right to change products and specifications without notice. Please ensure you have our latest information.

Issued: April 2020

VENTILATION REQUIREMENTS

WARM ROOFS

with small or no voids above sloping insulation

Non-permeable underlays (Type HR)

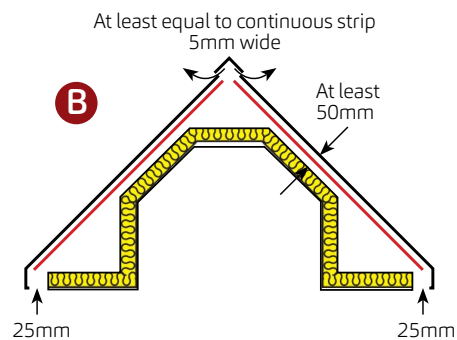
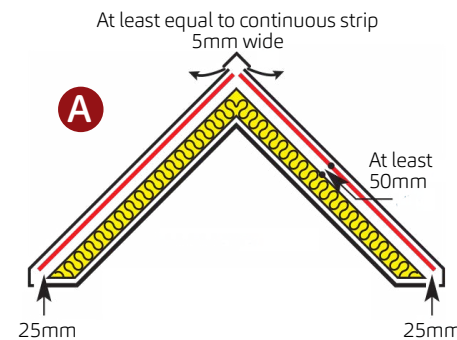
All roof types / All roof pitches:

Ventilation beneath the underlay and above the insulation of 25,000mm²/m at eaves or low level and 5000mm²/m at ridge or high level.

A 'well-sealed ceiling' must be provided as defined by BS 5250 clause H.3.2, and a separate air and vapour control layer on the warm side of the insulation.

The space between the underlay and insulation should be at least 50mm deep with a minimum of 25mm at the centre of underlay drape.

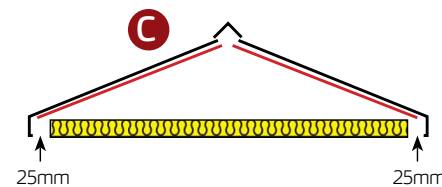
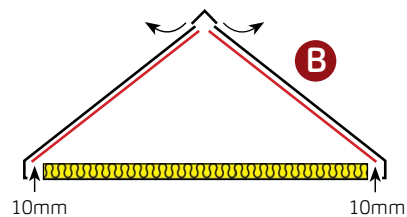
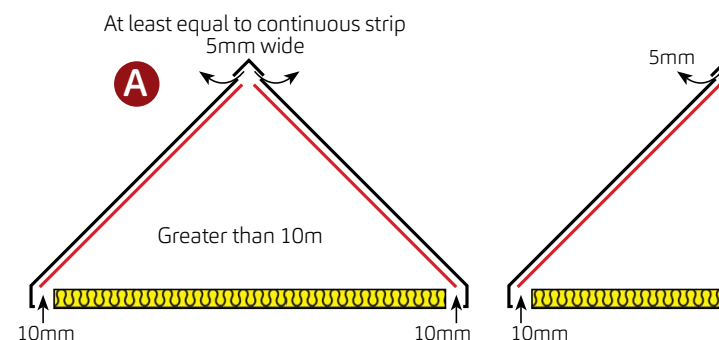
Obstructions such as dormers, valleys, roof windows, compartment walls, fire barriers and changes in pitch create separate voids below the roof slope. Provide ventilation openings to each void at high and low level as shown in the examples.



Non-permeable underlays (Type HR)

Roof pitch: Greater than 35° (degrees)

Roof Type: Pitched Roof, Lean-to Monopitch or where roof span exceeds 10m.
Additional ventilation of 5,000mm²/m at ridge or high level.



Non-permeable underlays (Type HR)

Roof pitch: Greater than 15° Additional ventilation of 10,000mm²/m at ridge or high level.

Non-permeable underlays (Type HR)

Roof pitch: 15° or less: Ventilation beneath the underlay of 25,000 mm²/m at eaves or low level.

COLD ROOFS

with large voids above horizontal insulation

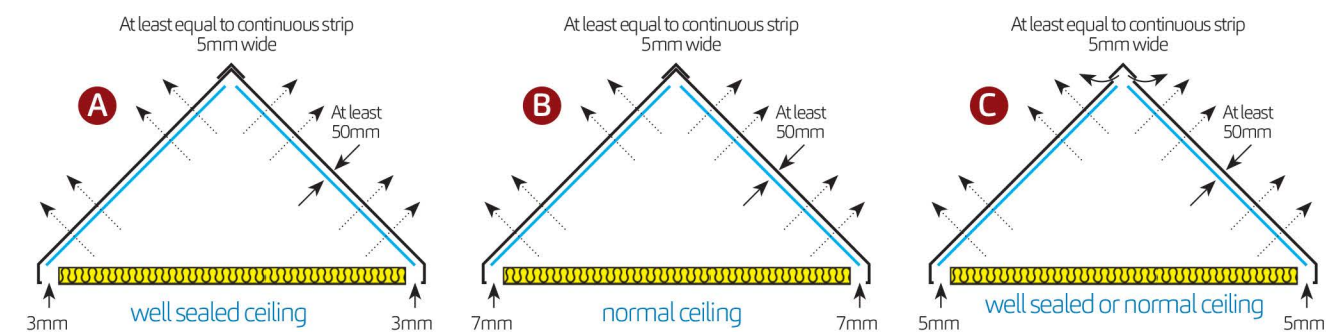
Vapour permeable underlays (Type HR) Dwelling sized roofs

All roof pitches, with 'well-sealed ceiling' as defined by BS 5250 clause H.3.2: Ventilation beneath a vapour permeable underlay of 3,000mm²/m at eaves or low level.

This reduction is possible due to the vapour permeability of the underlay.

All roof pitches, with ceiling not well sealed (likely in re-roof situations): Ventilation of 7,000mm²/m at eaves or low level.

Alternative solution (all ceilings): Ventilation of 5,000mm²/m at ridge or high level only.

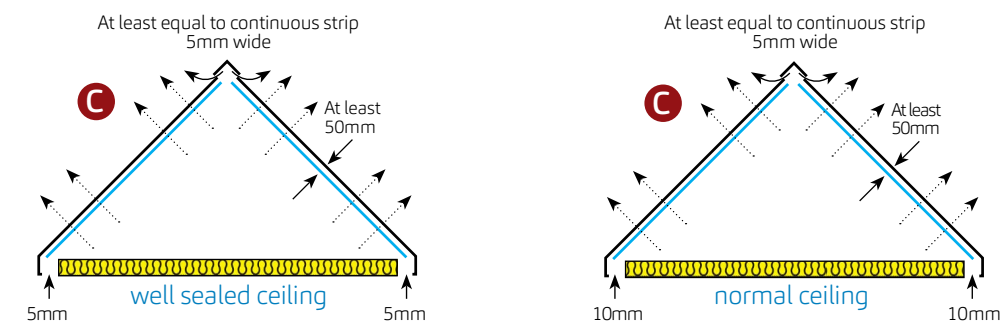


Vapour permeable underlays (Type HR)

Larger than dwelling sized roofs

All roof pitches, with 'well-sealed ceiling' as defined by BS 5250 clause H.3.2: Ventilation beneath a vapour permeable underlay of 5,000mm²/m at eaves or low level plus ventilation of 5,000mm²/m at ridge or high level.

All roof pitches, with ceiling not wellsealed (likely in re-roof situations): Ventilation of 10,000mm²/m at eaves or low level plus ventilation of 5000mm²/m at ridge or high level.





Lead Free Flashing

FLASH LEAD FREE - PREMIUM & TEXTURED

Code	Description	Colour
FLP300	Premium - 300mm x 5m	Grey / Black
FLP450	Premium - 450mm x 5m	Grey / Black
FLA150	Textured - 150mm x 5m	Grey / Black
FLA300	Textured - 300mm x 5m	Grey / Black
FLA450	Textured - 450mm x 5m	Grey / Black

Advantages & Benefits

- Highly flexible wall and chimney flashing tape
- Ideal for every kind of weather, durable, UV-resistant colour, fully recyclable
- Easy and durable fastening on roof covering due to butyl adhesive

Full Metal Product

- Highly durable and weather resistant
- High form- and function resistance
- Fully recyclable

Continuous Corrugation

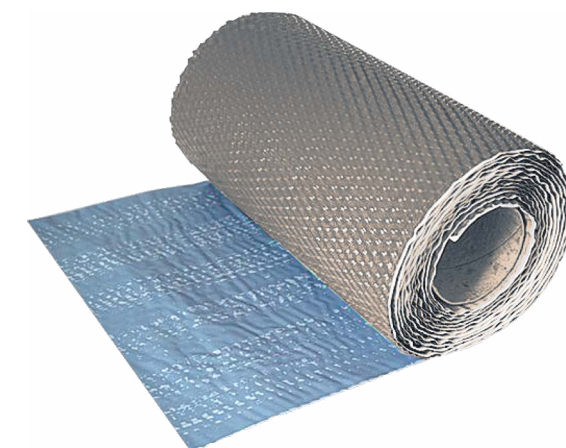
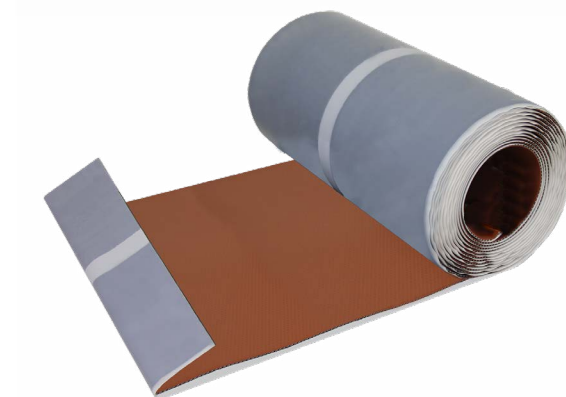
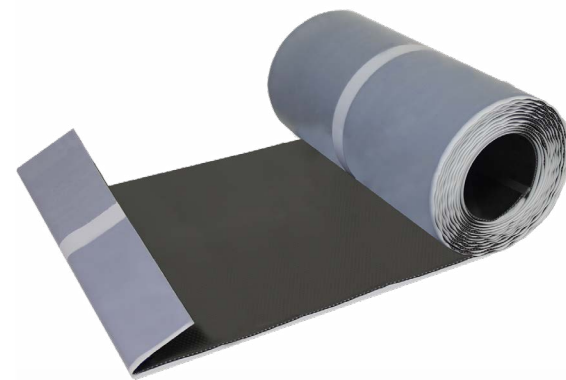
- Stretch Factor - 30 %
- Perfect mouldability on tile surface
- Useable as chimney- or lateral wall flashing

Material

- Durable UV-resistant colour
- Available in almost all RAL colours
- Break-proof

Soil-resisting

- Fully covered with butyl
- Easy application due to split release protective foil
- Fastening and sealing on tile surface



ANCILLARIES

ANCILLARIES & FIXINGS



ABUTMENT VENTILATION

The Glidevale AV50 AbVent provides unobtrusive high-level ventilation and can be used in conjunction with traditional 'lead roll' details on plain tile and slate roofs.

- Guaranteed 5000mm²/m ventilation provision to comply with BS 5250 and Building Regulations.
- Deluge and driving rain resistant as well as preventing large insect ingress.
- Unobtrusive when installed. Hidden within the roof flashings.
- Available with integral lead free alternative.
- Each unit overlaps the next to ensure integrity of flashing.
- Quick and easy to install. Does not affect the normal laying of the roof covering.
- Minimum pitch 20 degrees.



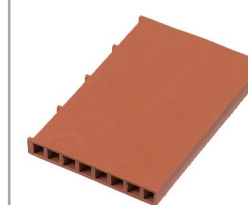
Code	Description	Pk Qty
ABV51	Abutment Ventilator (with Lead Free flashing strip) 1m	6

VENTILATION ANCILLARIES



FLEXI-PIPE PVC

Code	Description	Pk Qty
P003210235	102mm x 1m	10
P009210235	102mm x 3m	10
P009213335	133mm x 3m	10
P009215235	152mm x 3m	10
P018010235	102mm x 6m	10
P044010235	102mm x 15m	10
P044015235	152mm x 15m	10



WEEP VENT

Code	Pk Qty
WPV	50



PEEP VENT

Code	Pk Qty
PPV	50



REDUCER

Code	Description	Pk Qty
VKC437	150mm x 100mm	10
VKC603	125mm x 100mm	10
VKC619	150mm x 125mm	10

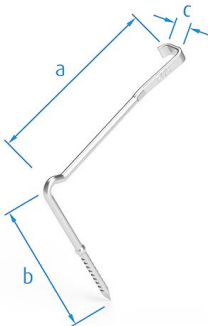


Sidelock Tile Clips 409®-2

Sidelock clips offer an excellent anchorage for roof tiles and ensure professional storm protection. On the lower part of the roof tile, at the sidelock, the clip secures three roof tiles simultaneously. On the impact tip, an additional collar clearly indicates the minimum depth to which the clip must be hammered in. The new embossed grooved section on the impact tip increases the clip's pull-out resistance from the wood. In order to simplify the handling of the clip for roofers, Persimmons offers the 409®-2 collated on plastic strips. Each strip contains 25 clips and is suitable for the Clipholster. The magazine clip storage on plastic strips enables swift individual clip removal and reduces the risk of injury as well.

Advantages

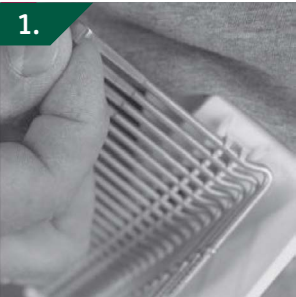
- Magazine storage on plastic strips
 - Reduction of installation time by up to 25 %
 - Easy handling
- Modified ring shank
 - Additional collar
 - Optimised tip lengths



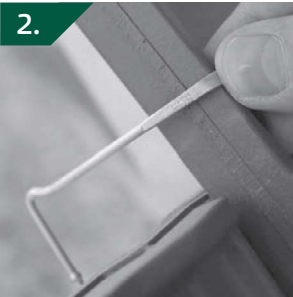
SIDELOCK TILE CLIPS

Code	Description	A	B	C	Pk Qty
P40920166	Sidelock TLE Tile Clip - Collated	45	42	9.5	500
P40902066	Sidelock 'Seawave' Tile Clip - Loose	65	42	9.5	500

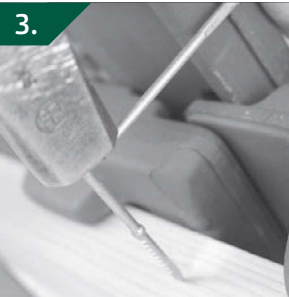
Installation Guide



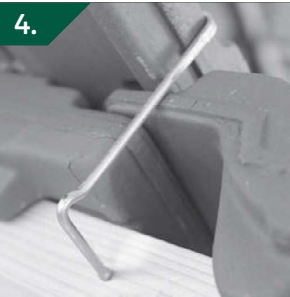
1. Installation time is reduced by up to 25% while using the ClipHOLSTER. Remove clip from the collated strip.



2. Place the clip onto the sidelock.



3. Position the tip onto the batten ...



4. ... and nail the clip up to the collar into the batten.



Eaves Tile Clips 436D EAVES CLIP TO SCREW

Eaves clips give the necessary stability and flexibility in eaves areas where a common storm clip cannot be mounted.

- The eaves clip is versatile due to its strength and flexibility.
- The metal strip with the pre-punched holes can be easily bent to the required height during installation.
- The adjustable end adjusts to the sidelock of various roof tiles.

Advantages

- High quality materials.
 - Deliverable in different lengths.
 - Deliverable in round and angular hook forms.
- For screwing at batten.
 - Hole line facilitates flexibility in installation.
 - Bent to desired height by processor.



EAVES TILE CLIPS

Code	Description	Pk Qty
P436d0671-2	Eaves Tile Clip	100

Installation Guide



1. Define bending point.



2. Bend accordingly.



3. Place twisted tip of the clip onto the sidelock and screw it into the fascia board.



Tile Clip Holster

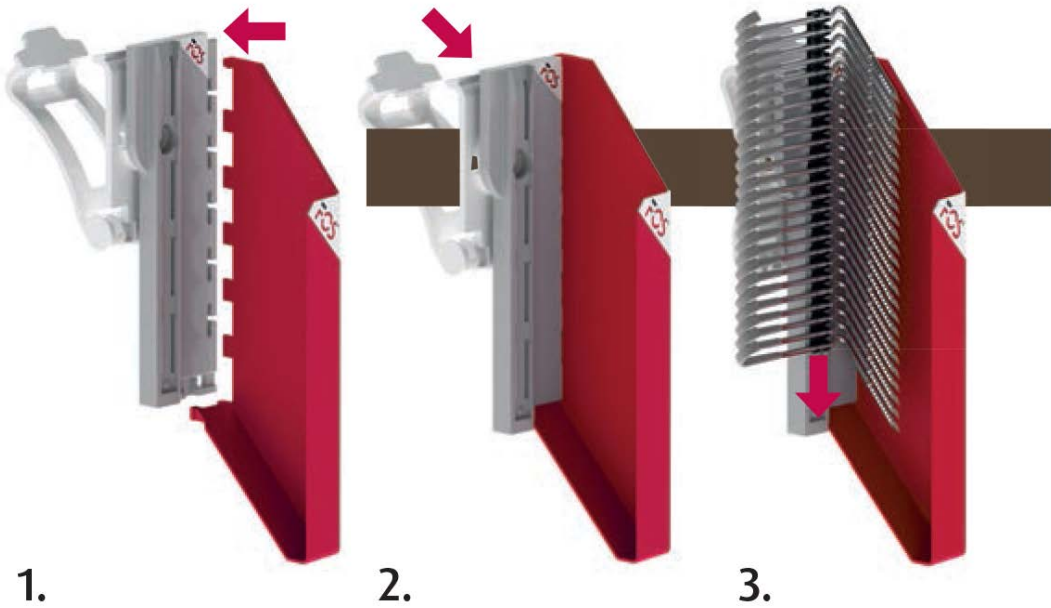
On the roof the use of the ClipHOLSTER accelerates the installation considerably. Because the ClipHOLSTER is fastened to the belt, the clips are within easy reach. The roofer has his hands free and can therefore work more efficiently. Empty magazine strips can be replaced quickly and conveniently. In practical tests, time savings of up to 25 % were recorded. Note: When mounting 409®-2 strips, the red protective cover can be used.



EAVES CLIP HOLSTER

Code	Description	Pk Qty
P60900199	Eaves Clip Holster	10

*For use with Sidelock TLE Tile Clips



Tileworks Product Range Codes

Code	Description	Colour	Pk
Concrete Tile Vents			
TSG	Seawave Concrete Tile	Grey	216
TSA	Seawave Concrete Tile	Anthracite	216
TST	Seawave Concrete Tile	Terracotta	216
TTG	TLE Concrete Tile	Grey	228
TTA	TLE Concrete Tile	Anthracite	228
TTT	TLE Concrete Tile	Terracotta	228
TDG	DUO TLE Concrete Tile	Grey	228
TDA	DUO TLE Concrete Tile	Anthracite	228
TDT	DUO TLE Concrete Tile	Terracotta	228
Concrete Ridge Tile			
RMG	Concrete Ridge Tile	Grey	160
RMA	Concrete Ridge Tile	Anthracite	160
RMT	Concrete Ridge Tile	Terracotta	160
Concrete Hip Starters			
THG	Concrete Hip Starter	Grey	1
THA	Concrete Hip Starter	Anthracite	1
THT	Concrete Hip Starter	Terracotta	1
Concrete Tile Vents			
TVSG	Seawave Concrete Tile Vent	Grey	20
TVSA	Seawave Concrete Tile Vent	Anthracite	20
TVST	Seawave Concrete Tile Vent	Terracotta	20
TVTG	TLE, DUO TLE Concrete Tile Vent	Grey	20
TVTA	TLE, DUO TLE Concrete Tile Vent	Anthracite	20
TVTT	TLE, DUO TLE Concrete Tile Vent	Terracotta	20

Kytun Product Range Codes

Code	Description	Colour	Pk
Individual Dry Verge Units			
FFV401	Dry Verge Unit (Right Hand)	Grey (GR), Black (BL), Terracotta (TR)	50
FFV402	Dry Verge Unit (Left Hand)	Grey (GR), Black (BL), Terracotta (TR)	50
FFV403	Dry Verge Unit Ridge Cap Universal	Grey (GR), Black (BL), Terracotta (TR)	10
FFV404	Dry Verge Unit Ridge Cap Half Round	Grey (GR), Black (BL), Terracotta (TR)	10
FFV407	Dry Verge Unit Ridge Cap Persimmon Multi Ridge	Grey (GR), Black (BL), Terracotta (TR)	10
FFV405	Dry Verge Starter Unit	Grey (GR), Black (BL), Terracotta (TR)	10
FFV406	Metal Batten End Clips	n/a	50
FFV408	Dry Verge Unit Mono Ridge Cap - Left Hand	Grey (GR), Black (BL), Terracotta (TR)	10
FFV409	Dry Verge Unit Mono Ridge Cap - Right Hand	Grey (GR), Black (BL), Terracotta (TR)	10
Standard GRP Valley Trough			
GTB14	Standard Valley Trough GRP (single lap tile) over batten fix 400 x 3000mm	n/a	5
GTB13	Narrow Valley Trough GRP (single lap tiles) over batten fix 360 x 3000mm	n/a	5
GSVT1	Standard Valley Trough GRP (double lap slate/ tiles) 330 x 3000mm	n/a	5
GJS1	Secret Joining Strip GRP (bonding in channel) 216 x 3000mm	n/a	5
GAS1	Abutment Soaker GRP 140 x 3000mm	n/a	5
GTF14	Standard Valley Trough GRP (slate or tiles) under batten fix 400 x 3000mm	n/a	5
CLVH001	Dry Valley Clips - Short (box of 100) *same as Hip Clips	n/a	100
CLVH002	Dry Valley Clips - Long (box of 100) *same as Hip Clips	n/a	100
Dry Fix GRP Valley Trough			
GDFBS70	Dry Fix Bonding Strip GRP (natural/man made slate) 225 x 3000mm	n/a	5
GDFBS110	Dry Fix Bonding Strip GRP 225 x 3000mm	n/a	5
GDFVTUB55	Dry Fix Valley Trough GRP (55mm) under batten 400 x 3000mm	n/a	5
GDFVTUB80	Dry Fix Valley Trough GRP (80mm) under batten 400 x 3000mm	n/a	5
GDFVTUB105	Dry fix Valley Trough GRP (105mm) under batten 400 x 3000mm	n/a	5
GDFVT70	Dry Fix Valley Trough GRP (70mm) over batten fix 400 x 3000mm	n/a	5
GDFVT110	Dry Fix Valley Trough GRP (110mm) over batten fix 400 x 3000m	n/a	5

Kytun Product Range Codes

Code	Description	Colour	Pk
Dry Fix Ridge/Hip			
DRUA02	Universal Dry Ridge Kit 6m	Anthracite	1
DRUA09	Universal Dry Mono Ridge Kit 6m	Anthracite	1
HIP1200	Hip Tray PVC 1200mm	Black	10
HIPC001	Hip Multi Ridge Tile Closer	Grey (GR), Black (BL), Terracotta (TR)	1
Lead Alternatives			
FLP300	Lead Free - Premium 300mm x 5m	Black (BL), Anthracite Grey (AG)	4
FLP450	Lead Free - Premium 450mm x 5m	Black (BL), Anthracite Grey (AG)	4
FLA150	Lead Free - Textured 150mm x 5m	Black (BL), Anthracite Grey (AG)	4
FLA300	Lead Free - Textured 300mm x 5m	Black (BL), Anthracite Grey (AG)	4
FLA450	Lead Free - Textured 450mm x 5m	Black (BL), Anthracite Grey (AG)	4
RPV400	Continuous Rafter Tray 400mm x 6m	n/a	4
RPV600	Continuous Rafter Tray 600mm x 6m	n/a	4
Roof Tile Ventilation			
RTVF010	In-Line TLE Roof Tile Vent 10k	Grey (GR), Black (BL), Terracotta (TR)	10
RTVSW010	In-Line SeaWave Roof Tile Vent 10k	Grey (GR), Black (BL), Terracotta (TR)	10
RTVFD010	In-Line TLE Duo Roof Tile Vent 10k	Grey (GR), Black (BL), Terracotta (TR)	10
RTVA100	Tile Vent Adaptor 100mm	n/a	10
RTVH100	Flexi Hose "Easy Cut" 600mm (Hose Clip included)	n/a	10
Roof Terminals			
SNL101	Tile Roof Vent Terminal (Aluminium) 50 - 170mm		1
SNL103	Tile Roof Vent Terminal (Aluminium) 175 - 330mm		1
DNL101	Tile Roof Vent Terminal (Lead Replacement) 50 - 170mm		1
DNL103	Tile Roof Vent Terminal (Lead Replacement) 175 - 330mm		1
Eaves Ventilation			
BC001	Bird Comb 1m	n/a	10
EP15	Eaves Protector 1.5m	n/a	10
OFV10	Overfascia Vent 10mm x 1m	n/a	60
OFV25	Overfascia Vent 25mm x 1m	n/a	50
RPV300	Continuous Rafter Tray 300mm x 6m	n/a	4
RPV400	Continuous Rafter Tray 400mm x 6m	n/a	4
RPV600	Continuous Rafter Tray 600mm x 6m	n/a	4
Abutment Ventilation			
ABV51	Abutment Ventilator (with Lead Free Flashing Strip) 1m		6
Fixings			
P40920166	Sidelock TLE Tile Clip - Collated (500 qty)		500
P40902066	Sidelock Seawave Tile Clip - Loose (500 qty)		500
P60900199	Sidelock Tile Clip Holster (each) for use with Collated Clips		10
P436d0671-2	Eaves Tile Clip (100 qty)		100
Roof Membrane			
GVPVP3001	VP300 Vapour Permeable Underlay 1m x 50m		1
GVPVP4001	VP400 Plus Vapour Permeable Underlay 1m x 50m		1
Ancillaries			
DVC1	Drill Vent	Clear, Buff, Terracotta, Cream	50
WPV	Weep Vent	Black, Buff, Natural, Grey, Terracotta	50
PPV	Perp Vent	Black, Buff, Natural, Grey, Terracotta	50
P009213335	133mm x 3mtr Flexi Pipe PVC	White	10
P009215235	152mm x 3mtr Flexi Pipe PVC	White	10
VKC125	Hose Clip 125mm		10
VKC437	150mm to 100mm reducer	n/a	10
VKC603	125mm to 100mm reducer	n/a	10
VKC619	150mm to 125mm reducer	n/a	10



INSTALLATION GUIDES
VENTILATION PRODUCTS

Tileworks Seawave, TLE & Duo TLE roof tiles | INSTALLATION GUIDE

Introduction

The following instructions are the minimum requirements for the installation of Tileworks Seawave, TLE and Duo (mock bond) TLE roof tiles. All roofing materials must be installed in accordance with BS 5534: British Standard Code of practice for slating and tiling. All roofing works must be carried out in accordance with BS 8000-6: British Standard Code of Practice for Workmanship on building sites.

Arrival & Storage

Tileworks roof tiles are delivered to site shrink-wrapped on wooden pallets. On arrival, they should be unloaded and handled with care to avoid damage or injury. Once unloaded, tiles should be checked to ensure that they conform to the project specification and for damage or any quality issues.

Tiles should be stored on site prior to installation in a place to prevent damage from passing traffic or soiling from ground conditions or mortar preparation.

Roof structure

Before commencing work, the structure should be checked to ensure it is sound and true, with roof trusses or rafters set correctly in line and at a pitch suitable for the products to be installed. Check that fascia boards or tilt fillets are installed at a level to set the eaves tiles at the correct angle. Check that gable walls finish neatly in line with the roof trusses or rafters.

Stacking on Roof

Stacking of tiles on the roof prior to installation must be done in such a way to avoid slippage and distributed evenly to avoid overloading a part of the roof structure. Load from at least three pallets and mix randomly on the roof.

Underlay

Refer to the Tileworks installation guides for underlay.

Tile Battens

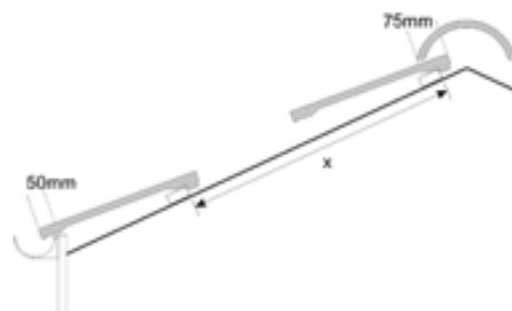
All battens must be marked as fully compliant with the latest version of BS 5534. Battens for Tileworks tiles must be minimum 50 x 25mm in section for rafter spacings up to 600mm.

Battens should be secured directly into rafters using approved fixings. Any batten must not be less than 1200mm long. There should be no more than one joint in any four consecutive battens on the same rafter. Where battens are jointed, the cut ends must be square and the joint located centrally over a rafter, with the batten ends secured by splay nailing. All batten ends must be fully supported at junctions such as hips, valleys, verges and abutments etc.

Setting Out – Batten Gauge

Tileworks Seawave, TLE & Duo TLE tiles must be laid with a minimum 75mm headlap, ie at a maximum 345mm batten gauge.

To set out from eaves to ridge, position the eaves course batten so that the tiles will overhang the wall or fascia by at least 50mm, measured on the rake. Position the last batten at the ridge so that the ridge tiles will overlap the top course of tiles by at least 75mm. See drawing.



Measure the distance (X) from the eaves course batten to the top course batten. Divide this distance by 345mm (maximum tile gauge). Round the answer up to the nearest whole number to give the number of tile courses required. Divide (X) by the number of courses to determine the actual batten gauge. Fix the remaining battens at this gauge.

Setting out across the roof

Firstly, determine the tiles' average linear coverage; lay three tiles and mark the position with their sidelocks fully closed, then mark the position of the three tiles fully 'open'. Set the average linear coverage by making a third mark midway between the previous 2 marks. Use this third position to mark out along the eaves and top battens. Strike a chalk line from eaves to ridge at each mark. Tiles should be laid to these marks to ensure perpendicular lines remain straight.

Tiling generally

Tileworks Seawave tiles are laid 'straight bond', TLE tiles are laid 'half bond' and Duo TLE tiles are laid 'quarter bond'. Tiling starts at the right-hand side of the roof plane and progresses towards the left. For TLE use half tiles every alternate course at verges to create the half bond. For Duo TLE, cut three quarter-width tiles to maintain quarter bond where required. Make sure that every third tile is positioned to the chalk line.

In general, all perimeter tiles must be twice fixed and every tile in the local and general areas must be fixed in accordance with the specification. A fixing specification appropriate for each site and house type must be obtained prior to starting work.

Eaves

Set the fascia board or tilt fillet so that the eaves course tiles lie at the same pitch as the tiles above. If using over fascia ventilators, adjust the height of the fascia or tilt fillet accordingly.

Eaves course tiles should be secured by head nailing and eaves clips nailed into the fascia or tilt fillet using 25mm long aluminium clout head nails. If installing over fascia ventilators, locate the clip nails through the slots in the ventilator. Depending upon the depth of the ventilator, use nails long enough to give at least 20mm penetration into the fascia or tilt fillet.



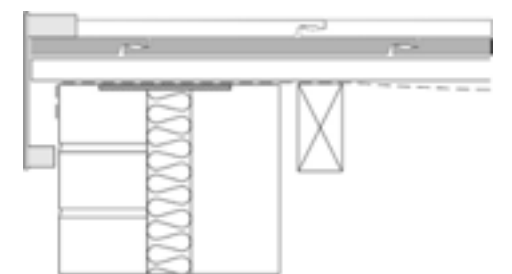
Dry verge system

Check that the gable wall is level with the tops of the rafters. Carry the underlay 40mm over the outer edge and turn down the wall or bargeboard. Finish the tiling at a distance beyond the outer edge as described in the dry verge fixing instructions.

For Seawave tiles, fit standard tiles at right and left-hand verges. For TLE tiles, fit standard tiles and half tiles in alternate courses at right and left-hand verges. For Duo TLE tiles, fit standard tiles and cut half/three-quarter tiles as required in alternate courses at right and left-hand verges. Position the tiles at the correct overhang as described in the dry verge fixing instructions.

At eaves, locate an eaves starter dry verge unit and secure into position. Install dry verge units to each tiling course up to the ridge. At the ridge, fit a block end or ridge end cap.

Install the dry verge system fully in accordance with the dry verge manufacturer's instructions.

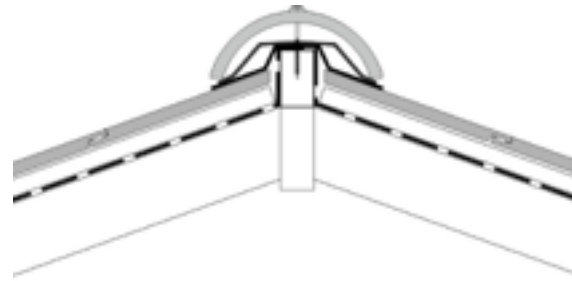


Dry Hip system

Fix a 50mm wide timber batten centred on the hip, securing with the straps or brackets supplied with the dry hip system. The batten height will depend upon the pitch of the roof, the tile type and hip ridge type.

Lay the tiles as described earlier, cutting tiles to fit closely at the hip junction. Twice fix each cut tile by head nailing and tail clipping. Use purpose-made cut tile clips where necessary. Where it is not possible to twice fix very small cut tile pieces, use an approved adhesive to bond the cut tile to the adjacent tile.

Install the dry hip components in accordance with the dry hip manufacturer's instructions. Fit a dry hip starter ridge where each hip meets the eaves. Continue fixing subsequent hip ridges to the ridge apex.

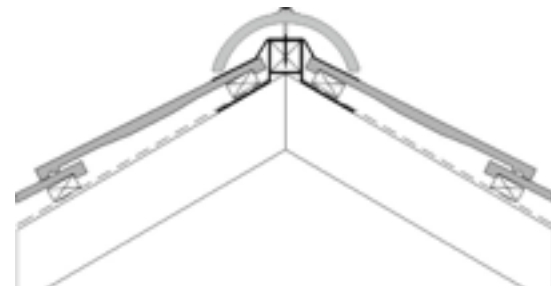


Dry Ridge system

For a ventilated roof space, terminate the underlay 30mm from the ridge apex. Fix a 50mm wide timber batten along the ridge apex securing with the straps or brackets supplied with the dry ridge system. The batten height will depend upon the pitch of the roof, the tile type and hip ridge type. Use tile battens to make up to the appropriate height of ridge batten, ensuring that the ridge tile fixing screws penetrate the batten by at least 40mm. Lay the top courses of tiles and secure each tile by head nailing and tail clipping.

Install the dry ridge components in accordance with the dry ridge manufacturer's instructions. Fit a fit a block end or ridge end cap at each gable end.

At each ridge/hip junction, install a purpose-made junction ridge/hip tile if available. Alternatively, cut the end hip and ridge tiles to form a close and neat junction. Weather the junction using a lead or lead replacement product saddle.



Valleys

Fit noggin timbers to support the valley boards set level with the tops of the rafters. Ensure the valley boards are wide enough to support the valley troughs or lining and the ends of the tile battens. For lead valleys, overlay the valley boards with 6mm continuous plywood, butt jointed over rafters. For GRP valley troughs, lay a continuous strip of underlay centred on the valley.

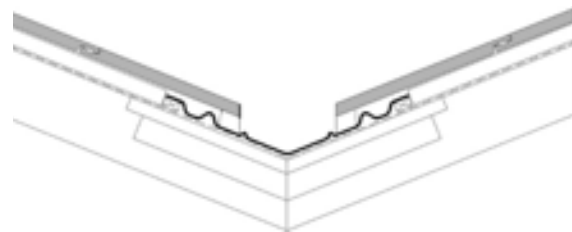
GRP Valley troughs

Set each GRP valley trough centrally over the valley boards and secure by nailing through its outer flanges into the valley boards at 500mm centres. Where overlapping additional lengths, the overlap should be 150mm for roof pitches over 39 degrees, 200mm for pitches 30 to 39 degrees, 300mm for pitches 22.5 to 29 degrees and 350mm for pitches below 22.5 degrees.

Install the general roof underlay to overlap the valley troughs. Cut the tile battens to terminate close to outer flanges of the valley trough and nail to secure the batten ends into the valley boards.

Cut the valley trough at eaves to finish 50mm over the gutter. At the top of the valley where it meets another valley or ridge, fit a lead or lead replacement product saddle.

Neatly cut the tiles into the valley at a rake to finish close (within 15mm) to the valley upstand, or to provide an open valley, depending on the type of valley trough. Twice fix each cut tile by head nailing and tail clipping. Use purpose-made cut tile clips where necessary. Where it is not possible to twice fix very small cut tile pieces, use an approved adhesive to bond the cut tile to the adjacent tile.



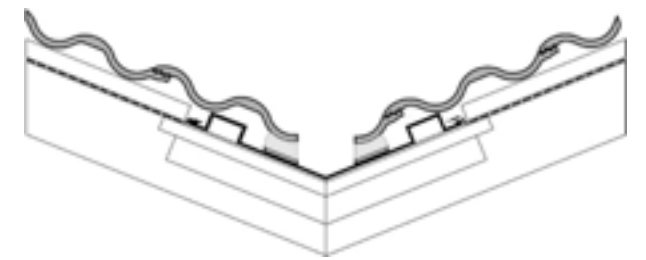
Lead lined valleys

Fix tile battens to create upstands in the lead each side of the valley, at least 150mm from the valley centre. Lead should be Code 4 or 5, at least 450mm wide and each piece should be no longer than 1.5 metres.

Set the first strip of lead at the eaves to overhang the gutter by 50mm and dress closely onto the valley boards, over the upstands and finish each side in a welt.

The overlap between subsequent pieces will depend upon the pitch of the roof. (see Lead Sheet Training Academy manual). At the top of the valley where it meets another valley or ridge, fit a lead saddle.

Neatly cut the tiles into the valley at a rake to provide a minimum 125mm wide channel. Bed the valley tiles onto an undercloak of slate or fibre cement board at each side of the valley. Do not lay the mortar directly onto the lead. Ensure there is a clear channel between the mortar and the upstands. Twice fix each cut tile by head nailing and tail clipping. Use purpose-made cut tile clips where necessary. Where it is not possible to twice fix very small cut tile pieces, use an approved adhesive to bond the cut tile to the adjacent tile.



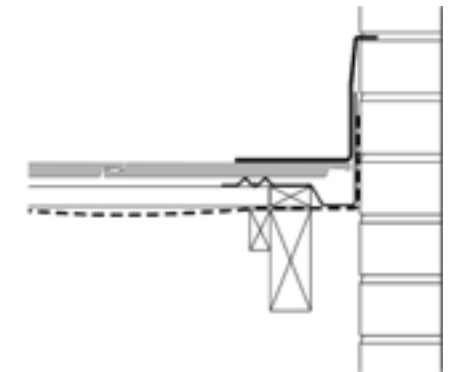
Side Abutments: TLE and Dual TLE

Side abutments must be weathered using either a lead secret gutter or a proprietary GRP continuous soaker system. In addition, to prevent the possibility of the gutter or soaker becoming blocked by debris over time, a cover flashing should also be installed.

Fix timber bearers, flush with the tops of the rafters, to support the secret gutter and battens ends. Finish the underlay to turn up against the wall by at least 75mm. Cut the tile battens, making sure they are fully supported on the rafter or bearer. Fix a counterbatten over the bearer or rafter, allowing enough space to the wall for the secret gutter or soaker. Install the lead or continuous soaker with its upstand against the wall and its outside edge nailed to the battens or counterbatten.

Finish the tiling within 15mm of the wall and fix all edge tiles. Install a lead or lead replacement step and cover flashing, overlapping the lead or soaker upstand by not less than 65mm and dress over the tiling by not less than 150mm. The cover flashing can count as one of the two required tile fixings.

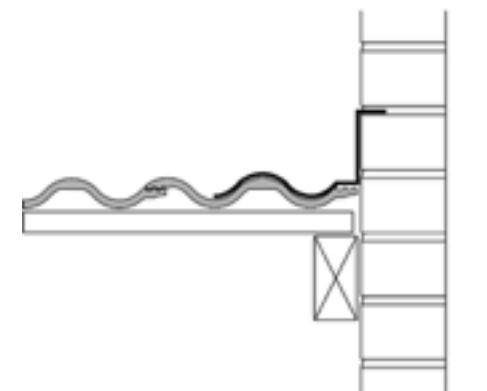
At eaves install a lead or lead replacement soaker between the lead or soaker and the gutter, welted at the outer edge and fully supported on a board.



Side abutments: Seawave

Side abutments for Seawave tiles must be weathered using a step and cover flashing made from lead or a lead replacement product. Chase out the brickwork 25mm to enable the flashing to be turned into the joint. The minimum distance from the tiles to where the lead turns into the wall should be at least 65mm. The total distance the lead flashing extends up the wall should be at least 150mm. If using separate single step and cover flashings, then the step flashing should cover the upstand of the cover flashing by at least 65mm. The lead should cover the tiles by at least 150mm or one complete tile roll, whichever is the greater.

Finish the tiling close to the wall and fix all edge tiles; the cover flashing can count as one of the two required tile fixings.



Dry Ridge Kit | INSTALLATION GUIDELINES

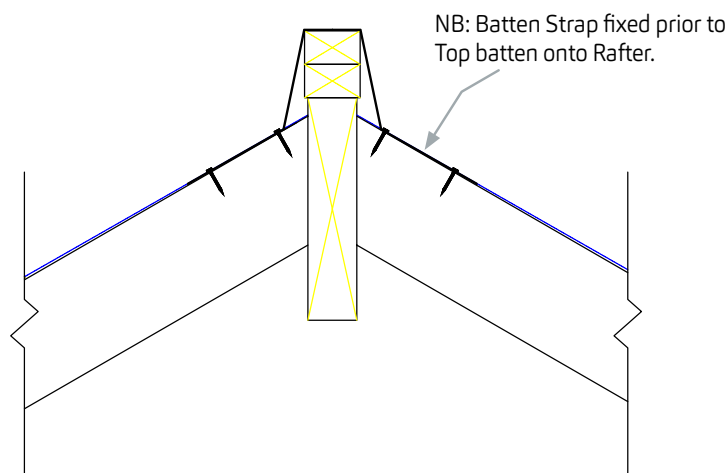


Fig 1. Batten Strap fixed to rafter. - 2D View.



Fig 2. Batten Strap in place prior to fixing. - 3D view.

1. The roof is dressed as normal with underlay placed. Fix the battens to the roof as normal apart from the top batten on each side. The roof is dressed as normal with underlay placed. Fix the battens to the roof as normal apart from the top batten on each side. Depending on the type of Ridge tile (Universal, half round and Plain Angle) there may need to be additional battens secured onto the top of the ridge board. Bend the Batten Strap and place over the battens on the ridge board with allowance to have the leg fixed to the rafter. One fixing should be placed to affix the batten strap to the battens. The remaining roof batten on each side can then be fixed in place.

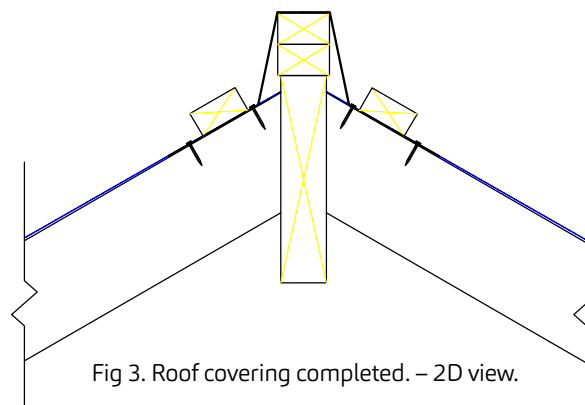


Fig 3. Roof covering completed. - 2D view.

2. At this stage the roof covering is finished to the ridge as per the manufacturer's instructions.

IMPORTANT: The top of the batten should be a maximum of 20mm from the underside of the Ridge Tile. This allows the fixing screw to get a strong fixing into the batten.

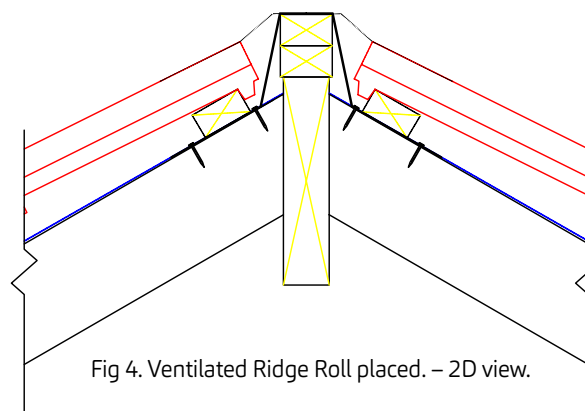


Fig 4. Ventilated Ridge Roll placed. - 2D view.

3. The ventilated ridge roll is then placed on the ridge. The two corrugated side flaps are designed to drape down over the top row of tiles on either side as the roll is opened out. The underside has a strip of self-adhesive butyl protected by an easy-release backing tape. Removing the tape the Ridge Roll is firmly applied by hand to the roof tiles. A ridge roll applicator is then used to securely fix in place. (Fig.4)
4. Lay the Ridge tile along with the Dry Ridge Union Bracket on the roof to ensure placement is correct.
5. Fix Ridge tiles using the Dry Ridge Screws and Washers.
6. This process is then repeated over the full roof.
7. Where the ridge tiles run into chimney stacks the ridge tile should be secured as close to the lead flashing as possible by drilling the roof tile as required and fixing using same process as above. Further information can be obtained by contacting the technical department.

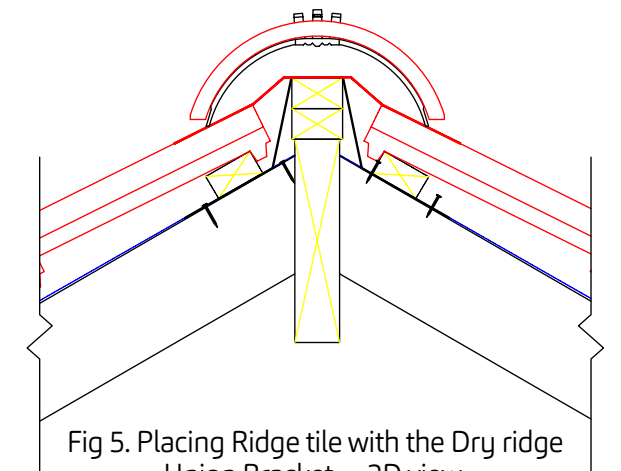


Fig 5. Placing Ridge tile with the Dry ridge Union Bracket. - 2D view.

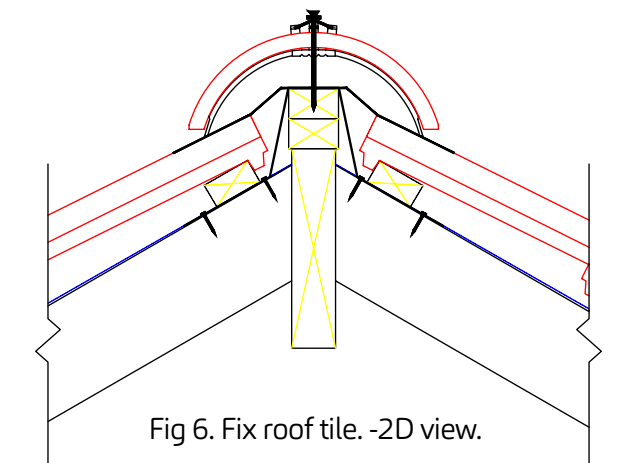


Fig 6. Fix roof tile. -2D view.



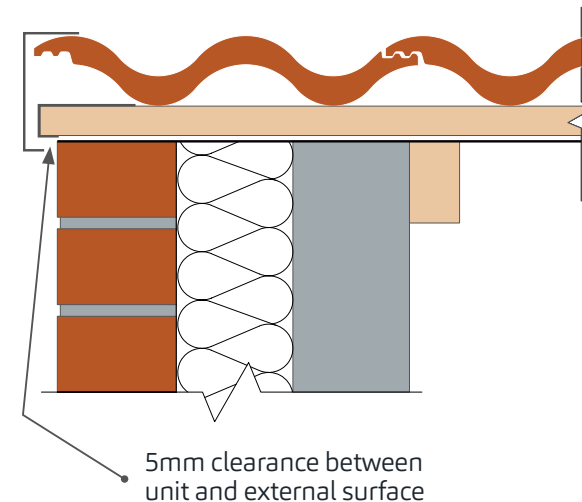
Fig 7. Fix roof tile. - 3D View.



Fig 8. Ridge Tiles fixed over length of roof. - 3D View.

Individual Dry Verge | INSTALLATION GUIDE

1. Saw off tiling battens 50mm from edge of gable end, brickwork or bargeboard if present and ensure they are securely fixed to the end rafter or truss.
2. On refurbishment projects where the ends of the battens may need to be extended ensure new batten extensions are robustly fixed.
3. The fascia board if present should be cut off level with the verge finish to accommodate the Eaves Starter Unit (FFV404).
4. To locate the position of the Eaves Starter Unit slide the unit in to a Dry Ridge Unit and offer up the two assembled parts over the first verge tile positioned correctly over the fascia. Mark suitable fixings through two of the holes in the front of the Eaves Starter Unit and remove all three items from this position. Relocate the Eaves Starter Unit in to the marked out position and mechanically fix with two screws at the front and two at the rear of the unit.
5. String a line from the Eaves Starter Unit (FFV404) up to the top tiling batten and, if required, screw fix the Batten End Covers (FFV406) to the ends of the tiling battens up the verge ready to fix the Dry Verge Units.
6. Place the first verge tile in to position over the fascia and fix in the usual manner as required.
7. Note that some profiles may need to be set back a few millimetres from the verge to allow the top of the Dry Verge Unit to seat correctly onto the edge of tile.
8. Place the Dry Verge Unit in to position over the tile, clip in to the slots and slide sideways in to the Eaves Starter Unit. Fix through an appropriate hole in to the batten.
9. Ensure the front of the Dry Verge Unit is secure and that the end of the gutter will fit in to the required position.
10. Place the next verge tile in to position and fix in the usual manner.



11. Place the next Dry Verge Unit in to position over the tile, click in to the slots and slide sideways on to the back of the previous Dry Verge Unit. Fix through an appropriate hole in to the batten.
12. Carry on with this procedure up the verge.
13. It is usually possible to finish tiling the verge and to fit the Dry Verge Units afterwards, if this is preferred, providing all the necessary preparation as described above is completed beforehand.
14. At the apex of the roof fix the last Dry Verge Unit to the top tiling batten as previously described (it may be necessary to cut the ends of the dry verge units if the verge tiles are tight to the apex) and fit the appropriate Ridge End Cap to the end of the tiling battens and also to the end of the ridge batten as described below.

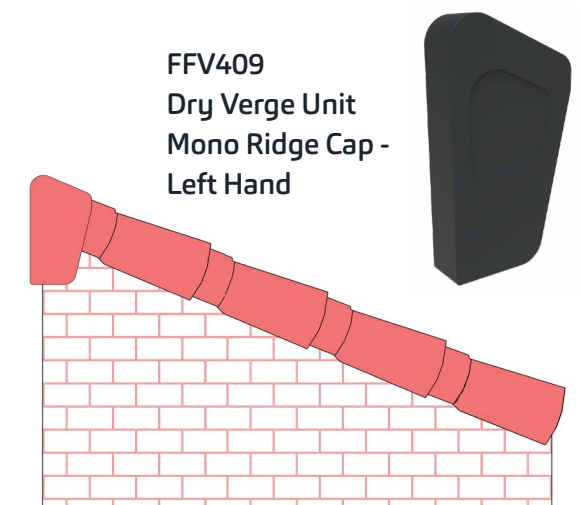
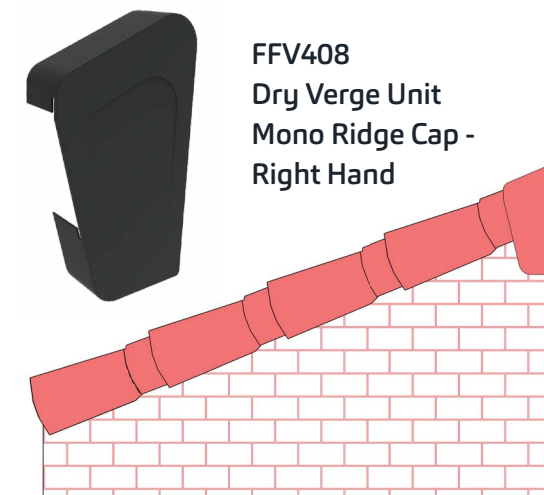


Duo Pitch Ridge – End Cap

- 15a. Top course verge unit is secured to end of top course tiling batten in normal manner.
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.
- 16a. If required, trim flange of ridge end cap to fit between top course verge units.

Mono-ridge – End Cap

- 15b. Top course verge unit is secured to end of top course tiling batten in normal manner.
- 16b. Place the suitably handed mono ridge end cap over the final Mono ridge tile. Securing the Monoridge Cap with the stainless steel screws provided. The stainless steel screw needs to bite into end rafter of batten end by at least 25mm.





A step-by step guide to using the online fixing specification calculator

Welcome to Persimmons Technical Services Fixing Specifications System. Please ensure that you complete all the information as accurately as possible. If completed accurately, PerFix will provide you with a fixing specification that meets BS 5534:2014+A2:2018.

PerFix is supported by Swifttest. If you require more technical support please contact their Technical services on [02070623900](tel:02070623900)

User Email *

Project Name *

Project Reference

Project Address

Project Postcode *

Introduction

Log on to the Swifttest online rooftile fixing specification calculator tool using your designated user name and password.

Page 1

Input project details, such as house type, development name and address etc, with any other relevant project references.

Input the site or road postcode. If one is not available yet, use a postcode from the nearest access road. The post code sets the distance from sea and the height above sea level plus other relevant topographical information.

Welcome to Persimmons Technical Services Fixing Specifications System. Please ensure that you complete all the information as accurately as possible. If completed accurately, PerFix will provide you with a fixing specification that meets BS 5534:2014+A2:2018.

PerFix is supported by Swifttest. If you require more technical support please contact their Technical services on [02070623900](tel:02070623900)

User Email *

Project Name *

Project Reference

Project Address

Project Postcode *

Select the relevant tile from the drop down menu under 'tile'

Tile *

Tile Colour *

Roof Type *

Roof Pitch (°) *

Rafter Centres (mm) *

Building Height to Ridge (m) *

Building Length (m) *

Building Width (m) *

Counter Batten *

Note: The tile colour option has been removed from the calculator. The relevance of tile colour is roof pitch-related. For example, if a sandfaced colour is introduced to the range it will require a higher minimum recommended roof pitch.

A step-by step guide to using the online fixing specification calculator (cont'd)

Select the relevant roof type from the drop down menu under 'roof type'. These are illustrated by the diagrams below.

Tile *

TLE

Tile Colour *

Anthracite

Roof Type *

Drop down menu with options: Duopitch Roof, Flat Top Roof, Mono Pitch Roof, Lean To Roof

Roof Pitch (°) *

Rafter Centres (mm) *

Building Height to Ridge (m) *

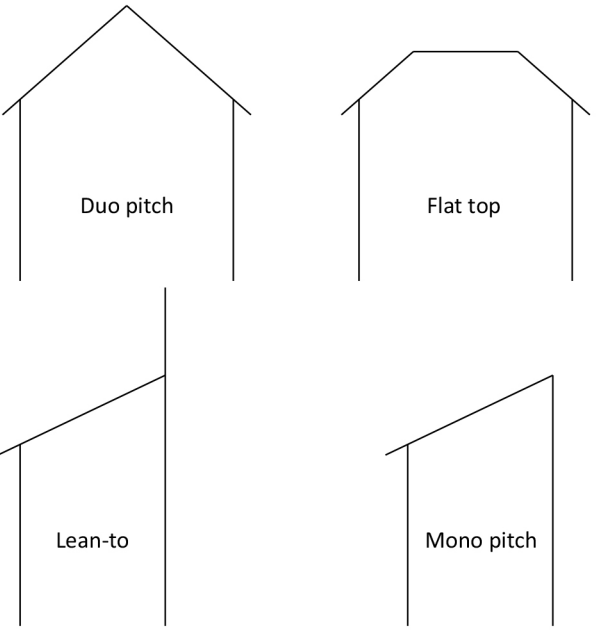
Building Length (m) *

Building Width (m) *

Counter Batten *

None

Submit



Fill in the building elements; ie roof pitch, rafter centres, building height to ridge, length and width. Note: the rafter centres are relevant to the wind loading on the underlay. The normal rafter/truss centres are maximum 600mm.

If the building shape comprises of two or more significant pitch/dimension combinations, then carry out a separate calculation for each combination to determine the worst case for that building.

Tile *

TLE

Tile Colour *

Anthracite

Roof Type *

Duopitch Roof

Roof Pitch (°) *

35

Rafter Centres (mm) *

600

Building Height to Ridge (m) *

7.6

Building Length (m) *

7.8

Building Width (m) *

4.5

Counter Batten *

--Select Counter Batten--

Submit

From the drop down menu under 'Counter Batten'. Select either 'battens (50mm x 25mm)' or 'None', whichever is appropriate for the roof type.

Note that the presence of counter battens and the depth of counter battens influences the distribution of wind pressure on the underlay and on the roof tiles.

Notes on counter battens:

Counter battens should only be included in the wind load calculations where they are fitted over the underlay.

In Example 1, the underlay is laid directly over the rafters and insulation. The counter battens are fitted over the underlay and the tile battens are fitted directly over the counter battens, creating a 50mm deep batten cavity.

In this case, select 'Battens (50 x 25mm)' from the Counter Batten drop down box.

In Example 2, the counter battens are fitted directly over SIP panels. Underlay is then laid over the counter battens and the tile battens are fitted over the underlay and counter battens.

In this case, select 'None' from the Counter Batten drop down box.

Tile *

TLE

Tile Colour *

Anthracite

Roof Type *

Duopitch Roof

Roof Pitch (°) *

35

Rafter Centres (mm) *

600

Building Height to Ridge (m) *

7.6

Building Length (m) *

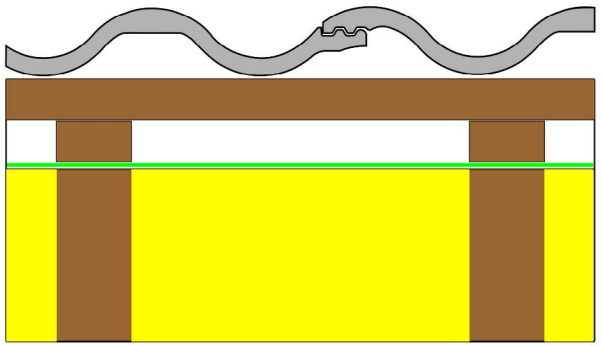
7.8

Building Width (m) *

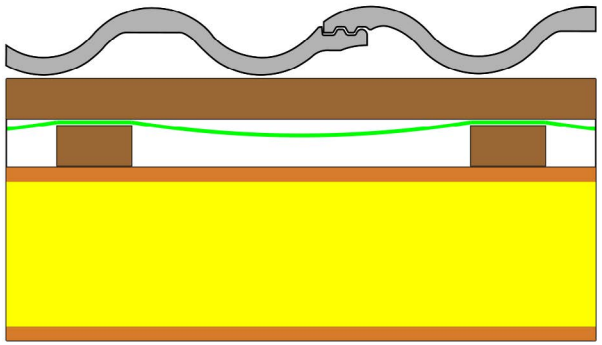
4.5

Counter Batten *

Drop down menu with options: --Select Counter Batten--, None, --Select Counter Batten--, Battens (50mm x 25mm)



Example 1: rafters with counter battens fitted over the underlay



Example 2: SIP panels with underlay laid over counter battens

A step-by step guide to using the online fixing specification calculator (cont'd)

Click the box confirming that the site is not within 6km of an airport.

Click the box confirming that there are no tall buildings locally at least twice the height of neighbouring buildings.

Note:
If either of these conditions apply then a more comprehensive calculation should be sought.

Counter Batten ⁺

None

☒ I confirm that this development is NOT within 6km of an airport

☒ I confirm that there are no tall buildings locally at least twice the height of neighbouring buildings that could affect wind speeds

If either of these conditions apply OR you require a more comprehensive specification email john.mercerconsultant@gmail.com

Submit

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Notes on airports:

The area susceptible to damage is triangular in plan, centred along the line of approach to the runway, in a sector +100 each side of the runway centre line, extending up to 6 km from the point of touchdown (see illustration).



Once all the fields are completed, click 'submit' to generate a fixing specification.

The program will automatically choose the appropriate underlay type for the site based on the wind pressure (Pu), ie VP300 or VP400.

In the unlikely event that neither underlay is adequate for the location, the program will flag a warning.

To download a PDF of the specification, click 'download to PDF'

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Site Ref
Date

PWEBFS2006290907AAW
29/06/2020

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PERSIMMON HOME TILE FIXING SPECIFICATION

Site Details

Alnwick
Highfield Farm, Melton High Street, Wath-on-Dearne, Rotherham S63 6RG

Wind Calculations

Altitude:	59.00	Terrain:	Site is in country, nearest distance to sea = 85.9km.
Heights Hr, He:	7.60, 5.60	Close to airport:	No
Wind Velocity:	22.1	Qp:	731.536

Roof Parameters

Tile type:	TLE	Roof Type:	Duo
Ridge colour:	Anthracite	Batten:	Battens (50mm x 25mm)
Pitch:	35.00	Counterbattens:	
Headlap:	75.00	Underlay:	VP300 Vapour Permeable Underlay (50m x 1.0m)
Building Length:	7.80	Underlay PU:	658.38
Building width:	4.50		

Recommended Fixing Specification

Perimeters: Nailed Twice (45mm x 3.35mm Aluminium Nails)

Local areas: Nailed Twice (45mm x 3.35mm Aluminium Nails)

Local areas - designated: 1 - courses in from angled details, verges, side abutments etc.
2 - courses in from flat details, eaves, ridges, top abutments etc.

General areas: Nailed Once (45mm x 3.35mm Aluminium Nails)

Download to PDF

Do Again With Same Data

Create New Spec

Powered by SwiftEst

On clicking 'download to PDF' a new screen appears which allows you to save the PDF to your computer.

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Site Ref
Date

PWEBFS2006290907AAW
29/06/2020

Persimmon
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TILE FIXING SPECIFICATION

Site Details

Alnwick
Highfield Farm, Melton High Street, Wath-on-Dearne, Rotherham S63 6RG

Wind Calculations

Altitude:	59.00m	Terrain:	Site is in country, nearest distance to sea = 85.9km.
Dist. from sea:	85.91km	Close to airport:	No
Wind Velocity:	22.1	Heights Hr, He:	7.60m, 5.60m
		Qp:	731.536

Roof Parameters

Tile type:	TLE	Roof Type:	Duo
Tile colour:	Anthracite (Smooth)	Batten:	Battens (50mm x 25mm)
Pitch:	35.0°	Counter Batten:	None
Headlap:	75mm	Underlay:	VP300 Vapour Permeable Underlay (50m x 1.0m)
Building length:	7.80m	Underlay PU:	658.382
Building width:	4.50m		

Recommended Fixing Specification

Perimeters: Nailed Twice (45mm x 3.35mm Aluminium Nails)

Local areas: Nailed Twice (45mm x 3.35mm Aluminium Nails)

Local areas - designated: 1 - courses in from angled details, verges, side abutments etc.
2 - courses in from flat details, eaves, ridges, top abutments etc.

General areas: Nailed Once (45mm x 3.35mm Aluminium Nails)

Once the PDF is downloaded, you can then go back to this screen and have the options to do the calculation again with the same data (for example, for another tile) or to create a new specification.

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Site Ref
Date

PWEBFS2006290907AAW
29/06/2020

Persimmon
Together, we make a home.

PERSIMMON HOME TILE FIXING SPECIFICATION

Site Details

Alnwick
Highfield Farm, Melton High Street, Wath-on-Dearne, Rotherham S63 6RG

Wind Calculations

Altitude:	59.00	Terrain:	Site is in country, nearest distance to sea = 85.9km.
Heights Hr, He:	7.60, 5.60	Close to airport:	No
Wind Velocity:	22.1	Qp:	731.536

Roof Parameters

Tile type:	TLE	Roof Type:	Duo
Ridge colour:	Anthracite	Batten:	Battens (50mm x 25mm)
Pitch:	35.00	Counterbattens:	
Headlap:	75.00	Underlay:	VP300 Vapour Permeable Underlay (50m x 1.0m)
Building Length:	7.80	Underlay PU:	658.38
Building width:	4.50		

Recommended Fixing Specification

Perimeters: Nailed Twice (45mm x 3.35mm Aluminium Nails)

Local areas: Nailed Twice (45mm x 3.35mm Aluminium Nails)

Local areas - designated: 1 - courses in from angled details, verges, side abutments etc.
2 - courses in from flat details, eaves, ridges, top abutments etc.

General areas: Nailed Once (45mm x 3.35mm Aluminium Nails)

Download to PDF

Do Again With Same Data

Create New Spec

Powered by SwiftEst

This information sheet is based on the Swiftest roof tile fixing spec calculator current at the time of writing. The calculator is subject to regular updates, therefore please ensure you have the latest information.

Issued: July 2020

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Seawave Tile

TECHNICAL DATASHEET

Technical Data - Seawave Tile

Minimum Roof Pitch	22.5 @ 75mm Headlap
Maximum rafter length	6m @ 22.5 degrees pitch plus 0.5m per degree in excess of 22.5
Headlap (Minimum)	75mm
Headlap (Maximum)	120mm
Batten Spacing @ Maximum Gauge	345mm
Batten Spacing @ Minimum Gauge	300mm
Size of Tile	420 x 334
Covering Capacity @ Maximum Gauge	9.5 Tiles per m ² @ 75mm Headlap
Cover Width	305mm
Profile Depth	26mm
Hanging Length	405mm
Weight as laid	39.9 kg per m ² @ 75mm Headlap
Weight Per 1000 (Including Pallet & Packaging)	4.82 tonnes
Weight per tile	4.2kg
Weight Per Pallet (Including Pallet & Packaging)	1040 kg
Quantity per Pallet	216
Battens per m ²	2.9m @ 75mm Headlap
Batten Size-Up to 450mm Rafter Centres	38 x 25mm
Batten Size Up to 600mm Rafter Centres	50 x 25mm
Nail Size/Type for Tiles	70 x 3.75mm aluminium clout head
Nail Size/Type for Metal Tile Clip	Kytun P40902066 OR P40923266 H 65 S 44/ 3mm Zial Collated

TLE Tile

TECHNICAL DATASHEET

Technical Data - TLE

Minimum Roof Pitch	22.5 @ 75mm Headlap
Maximum rafter length	6m @ 22.5 degrees pitch plus 0.5m per degree in excess of 22.5
Headlap (Minimum)	75mm
Headlap (Maximum)	120mm
Batten Spacing @ Maximum Gauge	345mm
Batten Spacing @ Minimum Gauge	300mm
Size of Tile	420 x 334
Covering Capacity @ Maximum Gauge	9.5 Tiles per m ² @ 75mm Headlap
Cover Width	305mm
Profile Depth	18mm
Hanging Length	405mm
Weight as laid	43.7 kg per m ² @ 75mm Headlap
Weight Per 1000 (Including Pallet & Packaging)	4.74 tonnes
Weight per tile	4.6kg
Weight Per Pallet (Including Pallet & Packaging)	1.020 tonnes
Quantity per Pallet	228
Battens per m ²	2.9m @ 75mm Headlap
Batten Size-Up to 450mm Rafter Centres	38 x 25mm
Batten Size Up to 600mm Rafter Centres	50 x 25mm
Nail Size/Type for Tiles	45 x 3.35mm aluminium clout head
Nail Size/Type for Metal Tile Clip	Kytun 40920166 H 45S 42 / 3mm angular Zial Coating



Duo TLE Tile

TECHNICAL DATASHEET

Technical Data - Duo TLE

Minimum Roof Pitch	22.5 @ 75mm Headlap
Maximum Roof Pitch	6m @ 22.5 degrees pitch plus 0.5m per degree in excess of 22.5
Headlap (Minimum)	75mm
Headlap (Maximum)	120mm
Batten Spacing @ Maximum Gauge	345mm
Batten Spacing @ Minimum Gauge	300mm
Size of Tile	420 x 334
Covering Capacity @ Maximum Gauge	9.5 Tiles per m ² @ 75mm Headlap
Cover Width	305mm
Profile Depth	18mm
Hanging Length	405mm
Weight as laid	43.7 kg per m ² @ 75mm Headlap
Weight Per 1000 (Including Pallet & Packaging)	4.74 tonnes
Weight per tile	4.6kg
Weight Per Pallet (Including Pallet & Packaging)	1.020 tonnes
Quantity per Pallet	228
Battens per m ²	2.9m @ 75mm Headlap
Batten Size-Up to 450mm Rafter Centres	38 x 25mm
Batten Size Up to 600mm Rafter Centres	50 x 25mm
Nail Size/Type for Tiles	45 x 3.35mm aluminium clout head
Nail Size/Type for Metal Tile Clip	Kytun 40920166 H 45S 42 / 3mm angular Zial Coating

Kytun Delivery Details

- Shipping is FREE on all order that exceed £500 in value.
- Standard delivery rate of £25.00 is charged on orders below £500
- A minimum order value of £800 is required for orders that include 3m Lengths.

Shipping Regions are to the mainland UK only (England, Scotland & Wales)
Please contact us regarding shipping to all other regions, including Scottish Highlands & Islands.
All orders emailed to: info@kytun.com

Ordering requirements

Buyer – Region / Coins Number
Site Name
Site Layout
Persimmon Order Number/ Reference
Subcontractor – Region / Coins Number
Site/Roofing Manager & Contact Numbers
Subcontractor detail

[Click here for the Kytun Credit Application Form](#)

Tileworks Delivery Details

Please contact a member of the Tileworks logistics team for information on delivery .

Persimmon plc
Registered Office:
Persimmon House
Fulford
York
YO19 4FE

