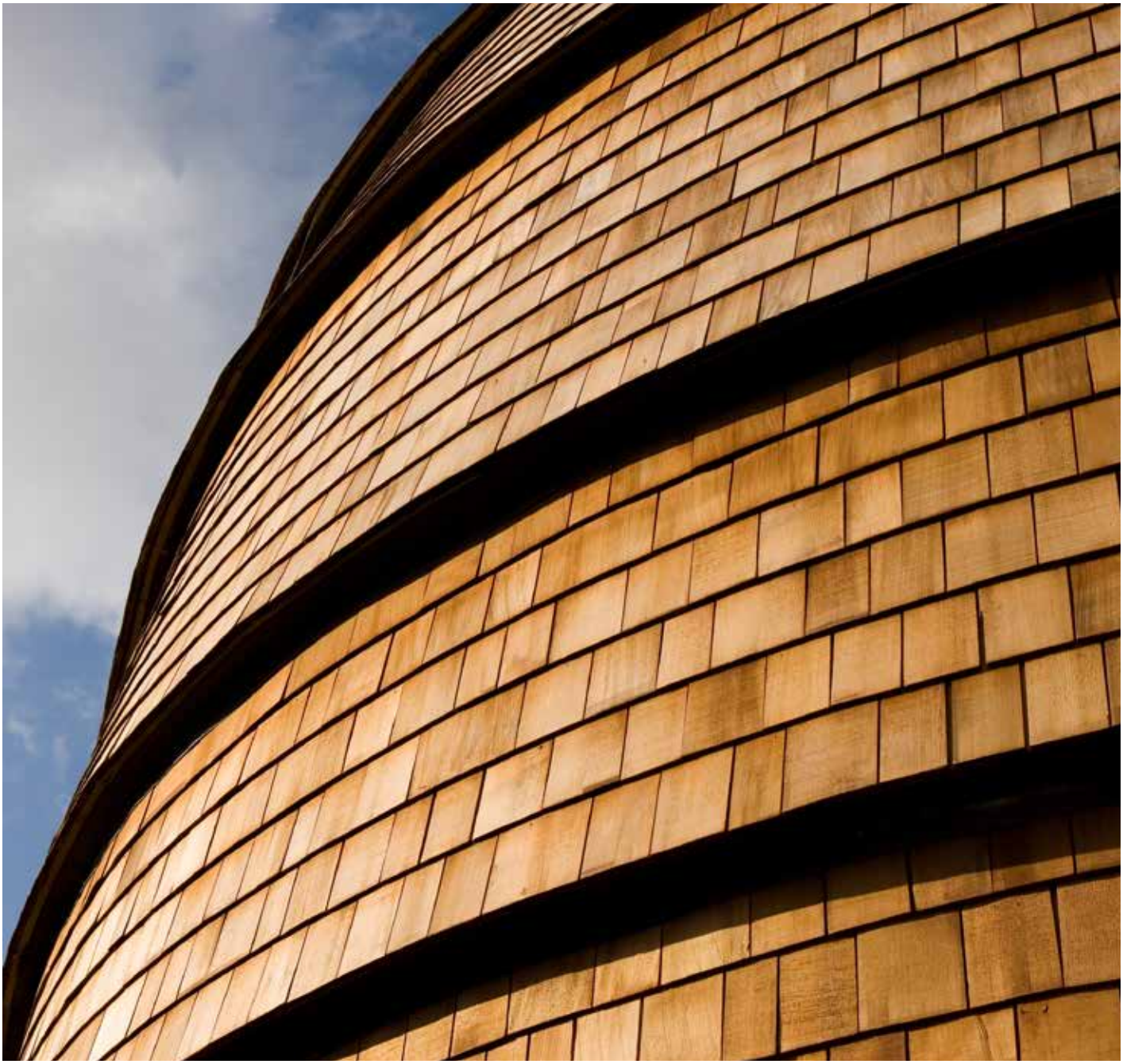


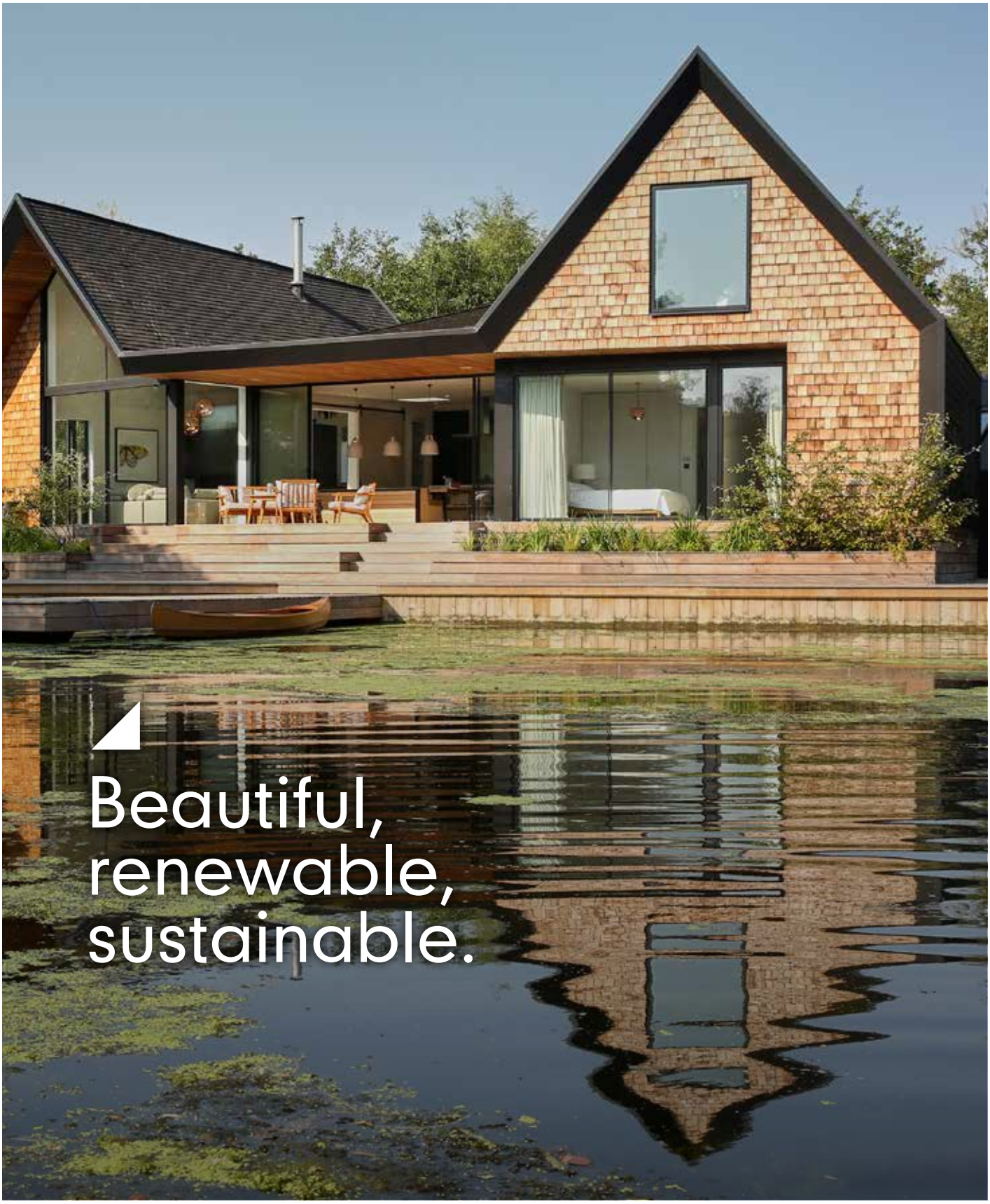
SHINGLES & SHAKES

Marley

CONTENTS


Rich warm
colour and
texture.

Each Shingle and Shake is uniquely formed, shaped and coloured by nature itself. Together, on a roof or facade, they create beautiful tapestries of grain, texture and warmth. These subtly change and improve with time, but their performance is constant and durable, as is their enrichment of both building and environment.


Beautiful,
renewable,
sustainable.

Sustainability is at the heart of Marley's vision for the built environment. Made from fully stewarded and sustainable timber sources, our western red cedar shingles and shakes combine true beauty with outstanding performance to offer one of the lowest carbon footprints of any building product.

The exceptional performance characteristics of the western red cedar used for shingles and shakes – outstanding rigidity, lightweight, exceptional resistance to weather and temperature extremes – makes it an economical and practical solution for traditional and modern structures.

Shingles & Shakes have provided a roofing and cladding solution for a vast range of projects, large and small. From simple garden gazebos and summerhouses, to residential projects and major commercial, public and civic buildings.

- A+ rated in the BRE Green Guide*
- Durable, natural material
- Beautiful texture and colour
- 14° low pitch options
- Totally renewable and sustainable building material
- PEFC certified and CSSB accredited members
- Use with JB Red battens and Universal Underlay

* Vertical cladding applications

PRODUCT DATA


Shingles


Shakes

SHINGLES

A shingle is produced by sawing a block of cedar on both sides, giving a relatively smooth face and back.

SHAKES

A shake is hand split from a block of cedar along the natural grain of the wood and then re-sawn to produce one smooth surface.

TECHNICAL DATA

	Shingles	Shakes
Length	400mm	600mm
Width (random)	75-350mm	75-300mm
Pitch and gauge* Roofs 14-21°	 95mm (14-21°) 125mm (22-74°)	 190mm (20-74°)
Vertical	175mm (75-90°)	250mm (75-90°)
Maximum pitch	90°	90°
Thickness	10mm at the butt, tapering	19mm at the butt, tapering
Covering (bundle) 95mm gauge	 1.73m²	 –
125mm gauge 175mm gauge 290mm gauge	2.28 m² 3.20m² –	– 190mm gauge 1.39m² 250mm gauge 2.12m²
Laid weight (gauge) 95mm	 8.1kg/m²	 –
125mm 175mm 290mm	6.1kg/m² 4.0kg/m² –	– 190mm gauge 9.4kg/m² 250mm gauge 6.1kg/m²
Battens required (net)		
95mm gauge	10.5 lin.m/m²	–
125mm gauge 175mm gauge 290mm gauge	8.0 lin.m/m² 5.3 lin.m/m² –	– 190mm gauge 5.3 lin.m/m² 250mm gauge 3.5 lin.m/m²
Batten size recommended (fixed to BS 5534)	38 x 25mm for rafters/supports not exceeding 450mm centres 50 x 25mm for rafters/supports not exceeding 600mm centres	
Fixings	ShingleFix (S16 x 38mm stainless steel staples) Silicon Bronze nails (31 x 1.8mm for Shingles, 45 x 2.65mm for Shakes)	
Authority	Cedar Shake & Shingle Bureau (CSSB)	

* The minimum recommended pitch and lap may be influenced by special circumstances, please contact the Technical Advisory Service for further information.

ESTIMATING AND COVERAGE

COVERAGE BY APPLICATION (FIVEX)

All quantities are exact, an allowance should be made for waste and cutting.

Use	Max. gauge	Coverage m^2 per bundle	JB-Red 25x38 battens per m^2	Laid weight kg/m^2
Vertical cladding 75-90°	175mm	3.20m2	5.7 metres	5.0 kg
Roofs 22-74°	125mm	2.28m2	8.0 metres	7.0 kg
Roofs 14- 21°	95mm	1.73m2	10.5 metres	9.3 kg

COVERAGE BY PRODUCT

1 bundle of shingles is required for 18 metres of starter course.
1 bundle of shingles is required for 7.5 metres of hip and ridge (traditional method)*.
These are exact quantities. Allow extra for cutting and waste. For a simple roof this is around 5% but for complex structures (ie octagonal roofs this could be over 30% where there is a lot of cutting)

Product	Qty of pieces per box/bundle	Coverage m^2 per bundle	Number of bundles
1 bundle of shingles	120 approx**	1.73-3.20m^2 dependent on roof gauge (refer to above table)	n/a
1kg of silicon bronze nails	1450	n/a	6
1 box of ShingleFix staples	3000	n/a	12.5

* Quantity will vary from bundle to bundle due to the nature of varying widths.

** 'Traditional method' is when two shingles are used to make a hip and ridge, in which case more shingles are required. Alternatively, hip and ridge cappings are available from Marley.

COVERAGE

Cedar Shingles are supplied in bundles. The coverage will depend on the application.

HIP AND RIDGE CAPPING

Marley supply pre-formed hips and ridges (see page 10). Each bundle has 36 pieces, 18 right hand and 18 left hand mitres. These are fixed alternately at the same gauge as the roof.

Use	Max gauge	Coverage per bundle	Silicon bronze nails
Roofs 22-89°	125mm	4.5m	0.05 kg per m
Roofs 14-21°	95mm	3.4m	0.065 kg per m

Do not use ridge or hip cappings on slopes above 75°.

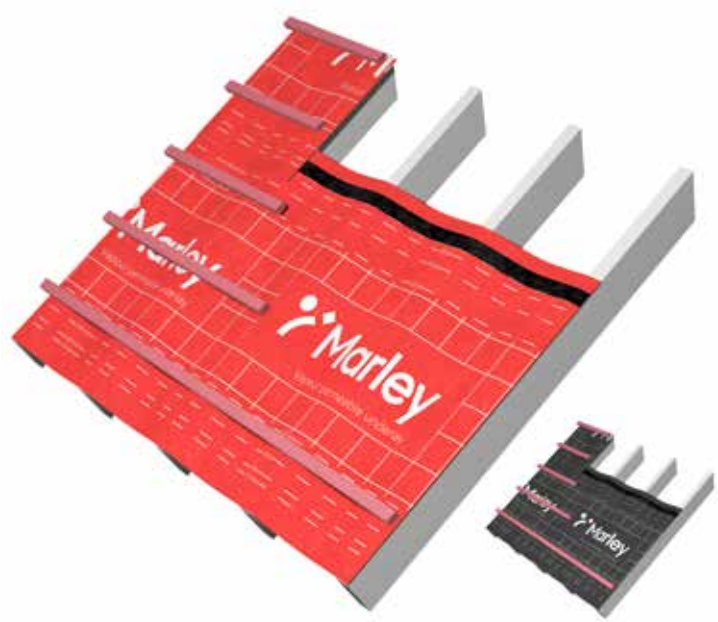
NAILS

For maximum life, fixing should be made with 2 No. 31 x 1.8mm silicon bronze annular ring nails per shingle (2 No. 45 x 2.65mm for shakes). As a guide, approximately 1kg of nails is required to fix 6 bundles of shingles.

Hip and ridge capping requires longer, 44 x 2.65mm silicon bronze nails. Each hip and ridge requires 4 nails. 144 nails are required for 1 bundle of hips and ridges. 1kg is required for 3 bundles of hip and ridge cappings.

For large projects, Marley recommends the use of ShingleFix S16 x 38mm stainless steel staples. As a guide, approximately 1 box of 3000 staples is required to fix 12.5 bundles of shingles.

FITTINGS AND ACCESSORIES



UNIVERSAL VAPOUR PERMEABLE AND NON-BREATHABLE UNDERLAY

Universal underlays are lightweight, high performance breathable and non-breathable membranes for pitched shingle or shake roofs. Supplied in 1m x 50m (1 x 45m for non-breathable) rolls with integrated tape for sealing laps, these underlays are fully compliant with BS 5534 and suitable for all UK wind zones 1-5.

Universal underlay is designed to integrate seamlessly within a full Marley roof system and provides an additional means of ventilation to meet the requirements of BS 5250*.

* Consideration must be given to the type of roof covering used, which will influence the ventilation requirements. For further info, please contact the Marley Technical Advisory Service.

JB-RED HIGH QUALITY ROOFING BATTENS

JB Red battens are the first fully pre-graded batten available to the roofing industry.

They completely meet the NHBC requirements for fully graded roofing battens. Their red colour means that they are highly visible on site, therefore Local Authority Building Control, NHBC and other inspectors can see that high quality, pre-graded and compliant battens have been used.

UNIVERSAL EAVES VENT SYSTEMS

Marley Universal eaves vent systems can also be used for shingles. Contact the Technical Advisory Service for information when using with vapour permeable or non-breathable underlay.

PRE-FORMED HIPS AND RIDGES

Offering considerable savings in fixing times, the two planes of pre-formed hip and ridge units are secured together by two staples, allowing sufficient flexibility to accommodate a range of pitches.

Units can be fire retardant treated(FRT).

Units are 450mm in length, supplied in bundles of 36 - 18 left hand and 18 right hand units.

ROLL VENT

Roll vent has been proven in the USA for many years and is used in conjunction with eaves ventilation.

Roll vent is simple to install along with standard cedar ridge cappings.

NAILS AND STAPLES

All fixings for traditional and ShingleFix fixing are available.

31 x 1.8mm Stainless steel nails
45 x 2.65 Stainless steel nails
31 x 1.8mm Silicon bronze nails
45 x 2.65 Silicon bronze nails
16 x 38mm JB ShingleFix Stainless steel 'C' point staples

PROPERTIES & PERFORMANCE

QUALITY AND ENVIRONMENT
All Marley western red cedar shingles have the 'Certi-Grade' quality assurance label and have PEFC Chain of Custody to ensure both a legal and sustainable product (see also pages 14-15).

GRADES
Cedar shingles are produced in 3 grades. These are referred to as Blue Label, Red label and Black Label. Marley only recommends the use of Blue Label shingles in the UK. They are:

- 100% Heartwood – this is the durable part of the tree (sapwood easily decays)
- 100% Edge grain – this ensures the shingle is stable, doesn't cup and again more durable
- 100% All clear – this ensures the shingle is free of defects such as knots

CSSB ACCREDITATION
Marley are members of the Cedar Shake and Shingle Bureau (CSSB).

SIZE
Shingles are available in 3 lengths with varying widths of 75mm to 300mm

The most typical shingle is the FiveX or XXXXX.

- FiveX or XXXXX – 400mm (16") Shingles > stocked product
- Perfections – 450mm (18") Shingles >special order
- Royals – 600mm (24") Shingles > special order

LIFESPAN AND DURABILITY
Shingles are naturally durable, but for maximum life expectancy, Marley recommends that cedar shingles are preservative treated.

MicroPro® is a preservative system incorporating micronized copper and co-biocides to create a wood preservative with enhanced technical performance and distinctive environmental and aesthetic product features, when compared to other current copper-based systems. Some preservative treatments can darken the shingle. MicroPro® is almost clear with a faint green wash that allows the shingle to weather naturally to a silver grey colour.

Cedar Shake & Shingle Bureau

FIRE
The use of FRT Shingles may be a requirement for many project applications and will be subject to local Building Control approval. Our FRT Shingles are impregnated with an FRT Exterior treatment that is manufactured and tested in accordance with BS476/3-EXT.S.AA and EN13501/5-Broof(t4).

Always check with LABC when using shingles near a boundary, even if there is no building close by. Generally, fire retardant treatments are required when building within 5m of the boundary of the site, however Building Regulations vary around the UK and advice may need to be taken.

SOUND
Western red cedar is particularly effective in a sound-damping capacity and provides effective, economical sound insulation.

INSULATION
Due to western red cedar's low density and coarse texture, it has good insulation properties. Western red cedar is recognised as the best thermal insulator amongst the commonly available softwoods, and is far superior to brick, concrete and steel.

It is widely used in saunas because of its low thermal conductivity; with a value of K=0.1067 W/m°C at 12% moisture content.

CLIMATE
Shingles are resistant to frost and nail impact. Once installed, they are resistant to high winds exceeding hurricane force (each shingle is nailed twice).

VENTILATION
Marley recommends Roll Vent, a relatively new ventilation product to the UK market but one that has been available in the USA for many years. It is used where both ridge and eaves ventilation is required.

Roll Vent complies with the requirements in the UK. This product gives a nett free area of 38,100mm^2 per m (Building Regulations require 5000mm^2) and should be installed in a balanced system. Full technical details are available on request. Roll Vent is simple to install. Extra wide ridge units should be used with this product.

When using a breathable underlay, counter battens are required. For non-breathable underlays, do not use counter battens.

WOOD FOR GOOD

Timber is without doubt one of the most environmentally friendly building materials available. It is extraordinarily versatile, naturally renewable, beautiful, light and strong to build with – warm and welcoming to live within.

Whether it is a landmark building, government office, housing, school or hospital, architects look to timber to express a contemporary beauty, at the same time with the confidence that they are specifying a high performance sustainable material, light in weight, with excellent thermal properties.

RENEWABLE AND SUSTAINABLE

Marley western red cedar shingles represent a truly renewable and sustainable roofing material with one of the lowest carbon footprints of any widely used pitched roofing or cladding material. BREEAM - the BRE's lifecycle analysis system - gives our shingles an A* rating when used for vertical cladding.

The manufacture of shingles and shakes ensures optimum utilisation of forest resources. Parts of the log that are unsuitable for sawn timber - and might otherwise be wasted - can be used, and due to their exceptionally light weight, shingles require less energy during the manufacturing and transport phases of their life than most other roofing or cladding materials.

PEFC

Marley has full chain of custody. The PEFC (Programme for the Endorsement of Forest Certification schemes) is an internationally recognised organisation that ensures that our timber is purchased from both legal and sustainable sources. This scheme traces the timber from forest to end use. PEFC also acts as an umbrella organisation, incorporating national schemes such as CSA (Canadian Standards Authority) and SFI (Sustainable Forestry Initiative).

CARBON CYCLE

Carbon, and especially CO_2 emissions, are recognised as a key factor in climate change. In the UK, 40% of all carbon emissions come from buildings, split evenly between domestic and commercial.

There is a drive towards zero carbon homes. Timber can contribute significantly with the carbon sink effect of the forests, the carbon storage of the timber, and as a substitute for carbon intensive materials.

- Every $1m^3$ of timber absorbs 1 tonne of CO_2
- Timber energy is CO_2 neutral (only the CO_2 absorbed is returned back to the atmosphere)
- There is little waste in manufacturing, as the by-products can be used for energy generation in bio-mass power plants used to generate power for the site or the grid

FIRE

Timber can burn but, unlike other materials, it behaves predictably. The timber forms a charred surface that acts as protection to the inner surface. Modern fire retardant treatments are also available that reduce the risk further still.

PEFC

THE NATIONAL FEDERATION OF ROOFING CONTRACTORS LIMITED

Member of the Timber Trade Federation

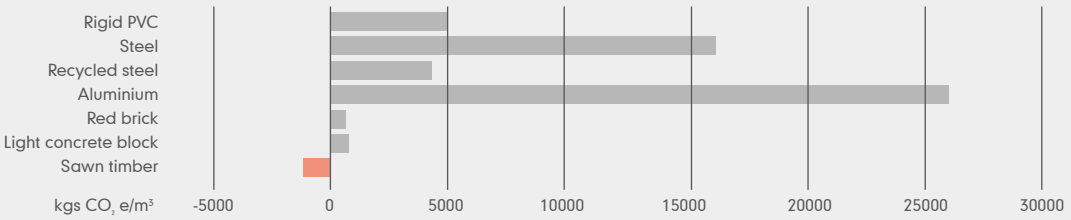
LIFE CYCLE

Life cycle assessment measures the environmental impacts of a building component right the way through its life. It takes into account where the material comes from and how it is used, all the way through to disposal or recycling. There are 3 phases:

PRODUCTION PHASE OR EMBODIED ENERGY (FIVEX)

Timber has the lowest embodied energy of any commonly used building material.

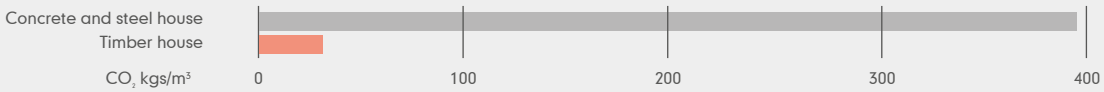
'How Wood Products Slow Global Warming' Net emissions of CO_2 including carbon sink effect



IN USE PHASE

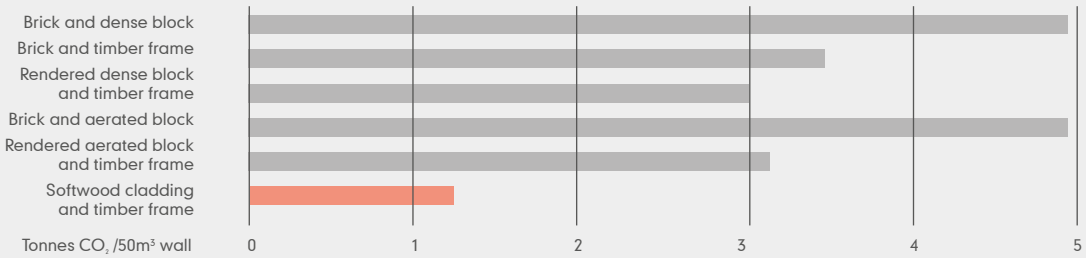
Timber buildings can be most cost effective in constructing energy efficient buildings.

CO_2 emissions from different house constructions



A 2001 Swedish study showed the difference to be equivalent to 27 years heating, or driving a Volvo S0 130,000km

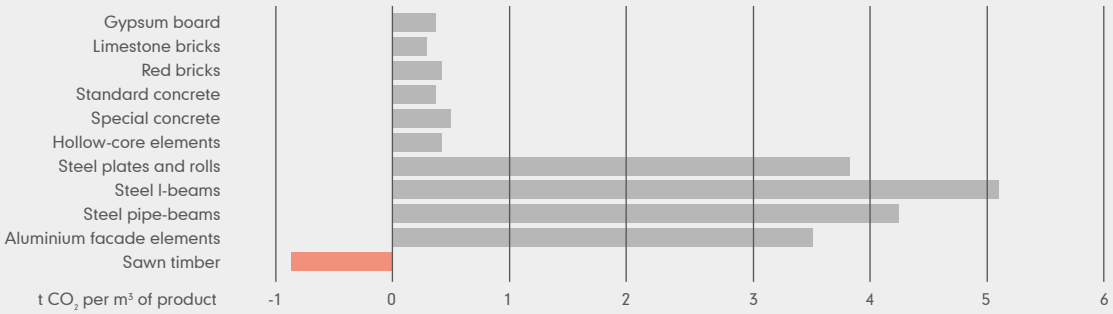
CO_2 emissions from different wall constructions



END OF LIFE

If the timber cannot be recycled, it can be used as a substitute for fossil fuels, providing renewable energy.

Next CO_2 life cycle emissions



CO_2 can be saved using timber over the whole life cycle. Substituting 1m³ of timber for other construction materials can result in savings of up to 1 tonne of CO_2. This combined with the carbon storage, means that 1m³ of timber stores and substitutes 2 tonnes of CO_2.

Source: TRADA

WARWICK CASTLE
CASE STUDY

It was crucial the new lodges were designed sensitively to blend into the ancient forest and we needed a long-life durable solution that was straightforward to fix... In commercial projects such as this, the lightweight nature of Shingles, together with their ease of installation, play an important role in ensuring we are able to meet the deadlines."

PHIL PARKS, LEAD COMMERCIAL MANAGER, WILLERBY INNOVATIONS

Marley's Western Red Cedar Shingles have been specified for the roofs of 28 new medieval-themed lodges at Warwick Castle. The unique additions to the popular tourist attraction give visitors the chance to experience the medieval age like never before.

The brand new lodges were designed by Willerby Bespoke, a business dedicated to the design, manufacture and installation of timber frame buildings, to give guests a truly medieval experience, which also complemented the existing medieval 'glamping' accommodation and castle surroundings.

Willerby Bespoke designed the lodges, including the Knight's Lodge; a two-storey mezzanine design, meaning that installation and stitching the roofs together was more complex and had to be completed on site. With approval from Warwick Castle, Willerby Bespoke specified Shingles for the lodges due to the robust finish they deliver, and the reassurance provided by the accreditation to the Certi-Grade quality assurance label, as certified by the Cedar Shake and Shingle Bureau (CSSB).

◢ Find more case studies at marley.co.uk/casestudies

PROJECT INFORMATION

Location/
Warwick Castle

Application/
Leisure

Product/
Shingles

Specifier/
Willerby Bespoke

LE PETIT CHATEAU
CASE STUDY

We chose Shingles from Marley because of the technical support they were able to offer us during the feasibility stages, but also because of the Certi-Grade quality assurance and the 40 year guarantee. The finished roof looks stunning and the uniqueness of the venue has led to it being named best regional newcomer in the 2017 Wedding Awards."

STEVEN DUNN, DUNN BUILDERS

Le Petit Chateau is an award-winning wedding venue set on the site of an historic coaching inn in Otterburn, Northumberland. Although the owners were originally considering a thatched roof, contractor Dunn Builders recommended using Shingles to achieve the enchanted, fantastical aesthetic for the chapel, named La Belle Epoque.

The western red cedar shingles are layered on top of each other in a pine cone-like design on the roof, which includes very tight rolls at the front of the chapel, making it a highly skilled project which involved the use of a steam box to achieve the desired bend in the shingles.

The unique formulation uses a suspended micronised copper-based preservative that leaves the shingle looking completely natural.

◢ Find more case studies at marley.co.uk/casestudies

PROJECT INFORMATION

Location/
Northumberland

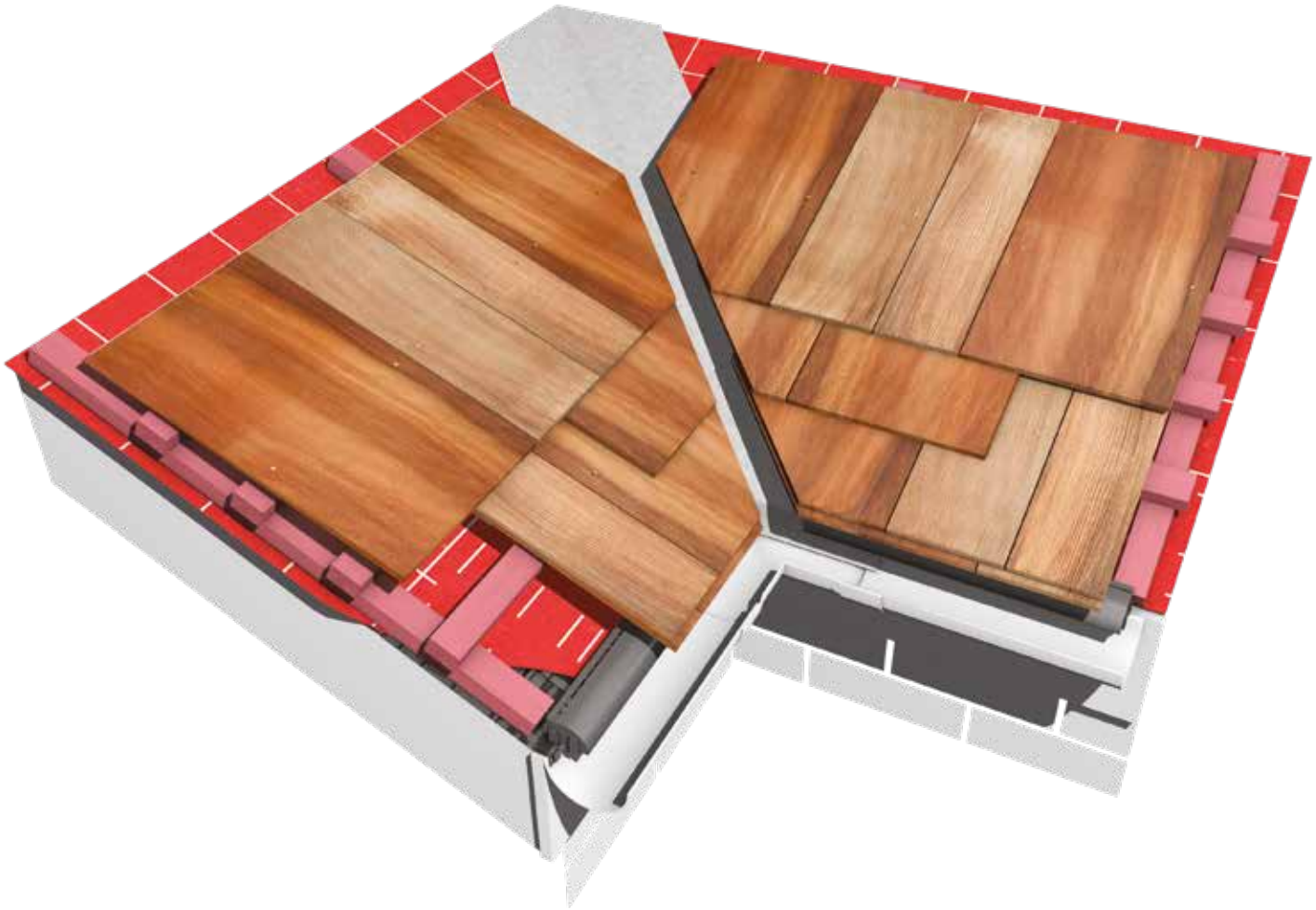
Application/
Private residence

Product/
Shingles

Specifier/
Ayre Chamberlain Gaunt

Contractor/
Francis Construction

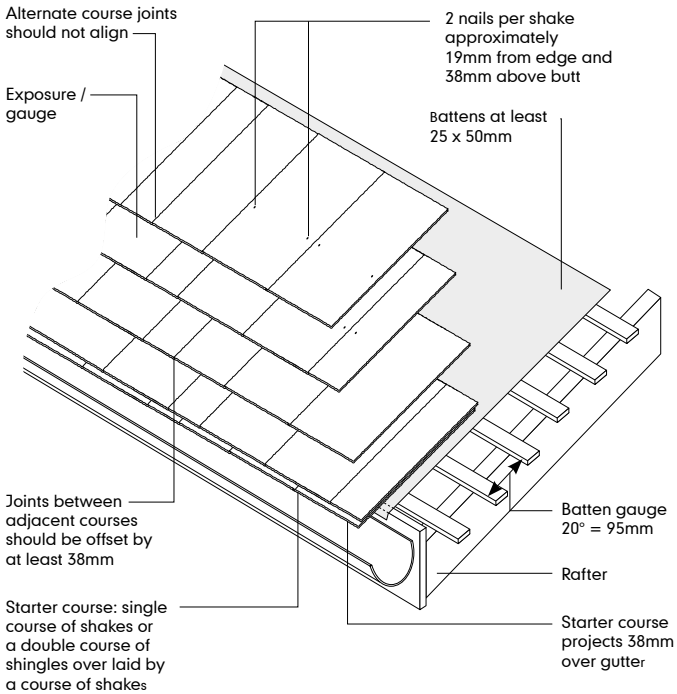
DESIGN DETAILING



Marley shingles can be used for pitched roofing and vertical cladding applications using very similar design and installation principles as other small element roofing products.

They are extremely lightweight, yet strong, easy to cut, shape and work with and therefore lend themselves to the formation of complex roof shapes such as mansards, changes of pitch, curves, turrets and others, as well as all of the standard roofing details encountered in typical residential or commercial projects.

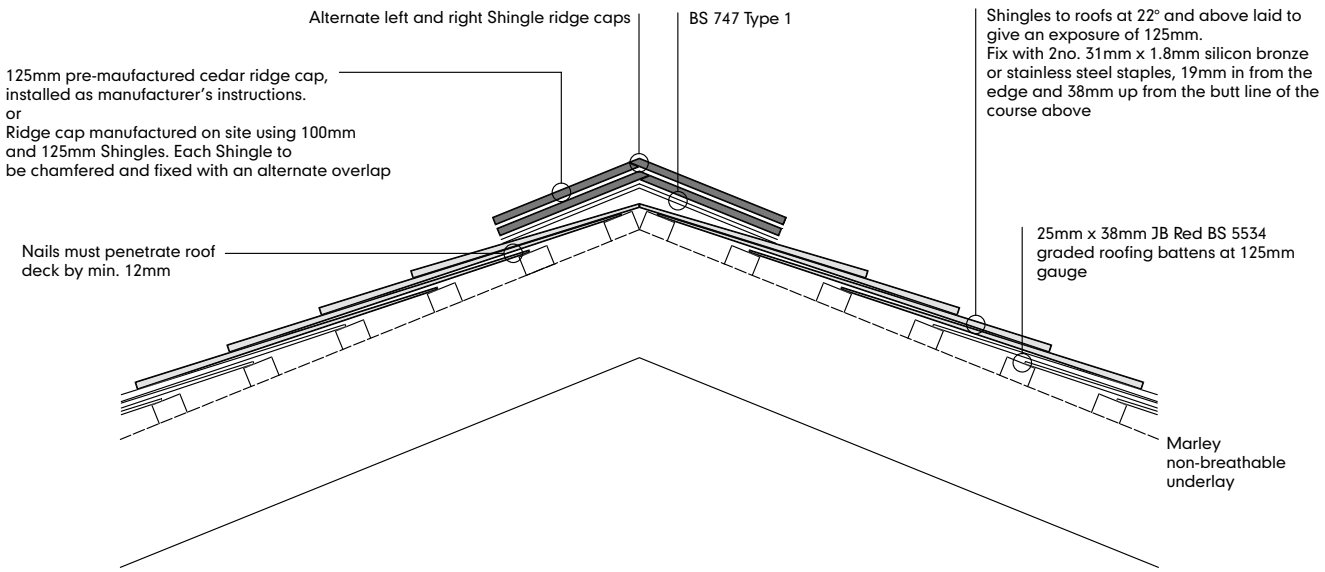
SHINGLES WITH TRADITIONAL EAVES CONSTRUCTION



SHINGLES WITH UNIVERSAL EAVES VENT SYSTEM

This eaves detail shows Marley vapour permeable underlay with counterbattens.

DUO PITCH RIDGE WITHOUT VENTILATION

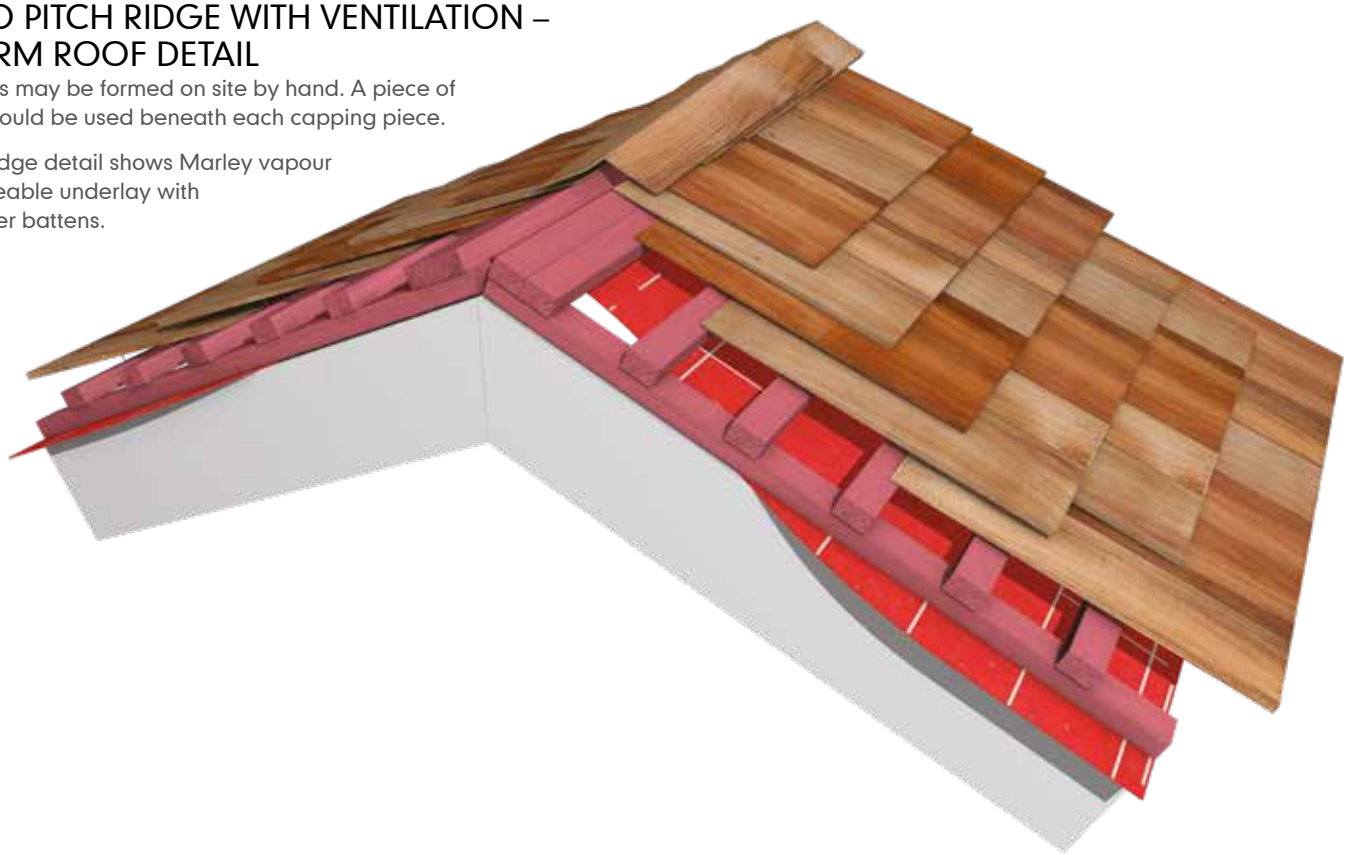


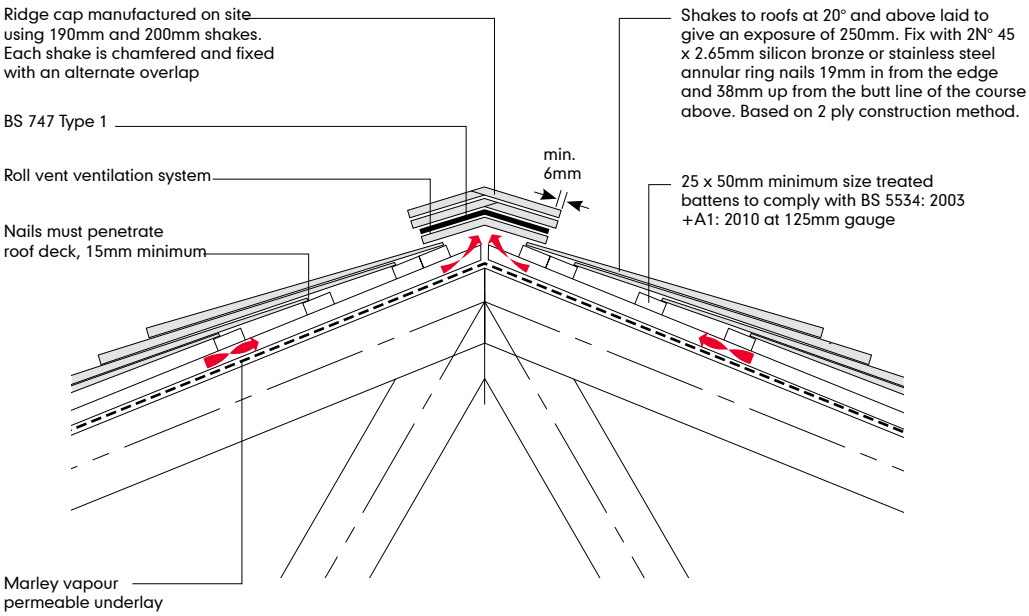
DESIGN DETAILING

DUO PITCH RIDGE WITH VENTILATION – WARM ROOF DETAIL

Ridges may be formed on site by hand. A piece of felt should be used beneath each capping piece.

This ridge detail shows Marley vapour permeable underlay with counter battens.





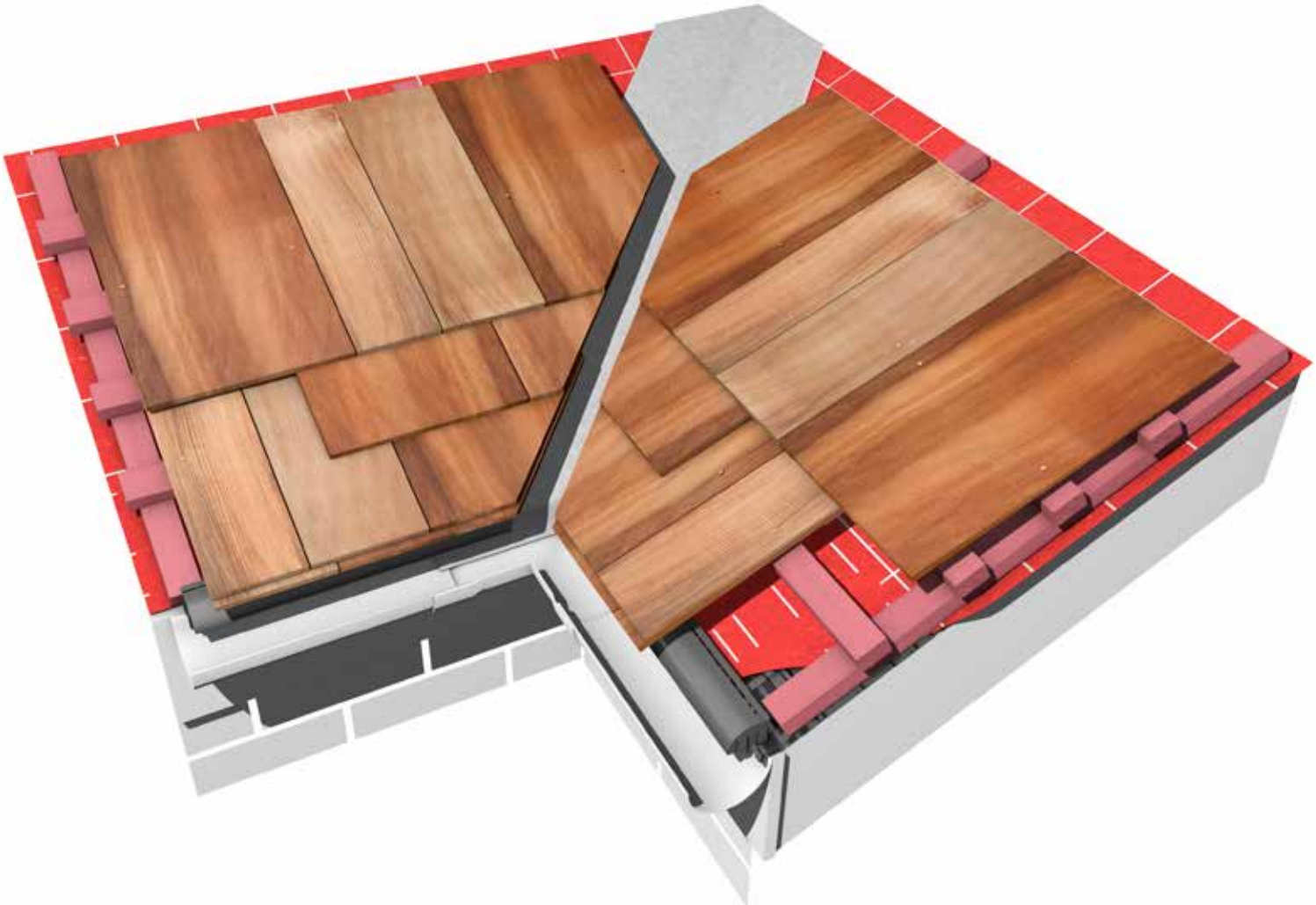
HIP DETAILING

This ridge detail shows Marley vapour permeable underlay with counter battens.

DESIGN DETAILING

VALLEY DETAILING

This ridge detail shows Marley vapour permeable underlay with counterbattens.



SHINGLE FIXING DETAILS

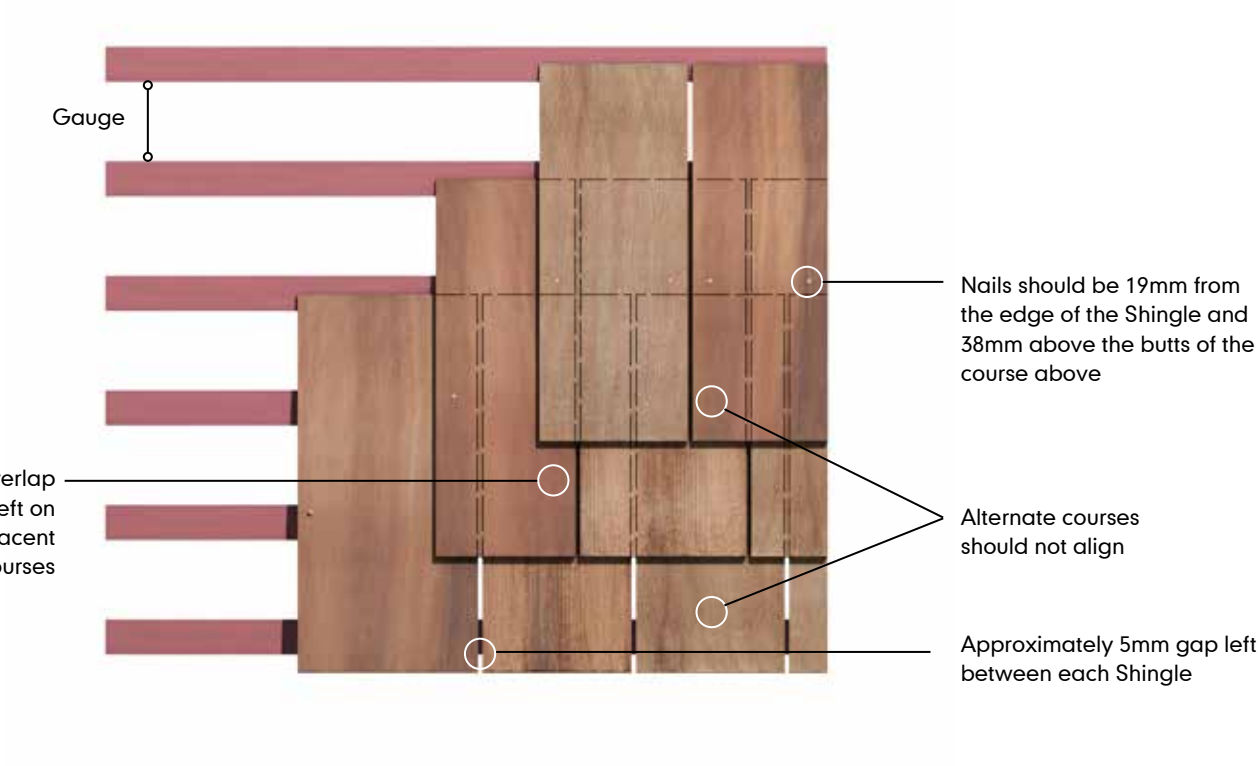
The shingles should be fixed at the appropriate gauge directly onto roofing battens. A double course of shingles should be used as a starter course at the eaves. The shingles should project at least 38mm beyond the eaves protection, or if a gutter is used, at least to the centre line of the gutter. They should extend 38mm over the verge or gable moulding/bargeboard.

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

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

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

Note: to allow for adequate airflow, counter battens should be used for all applications



Here to help

Getting our knowledge to you and your project smoothly and efficiently

CUSTOMER SERVICES

Marley is committed to providing outstanding customer care and is staffed by experienced personnel: Tel 01283 722588 or e-mail info@marley.co.uk

To find your nearest stockist, please visit: marley.co.uk/stockists

TECHNICAL ADVISORY SERVICE

Specifiers require prompt, knowledgeable and detailed responses to a vast range of enquiries covering everything from the embodied energy of a typical roof tile, to the different ventilation options available.

Our Technical Advisory Service is staffed by a qualified team with specialist knowledge not only of all Marley products, but also crucially, how those systems integrate with other roofing components and comply with Building Regulations, Health and Safety, environmental and other critical roofing criteria.

Tel 01283 722588, E-mail info@marley.co.uk or visit marley.co.uk/resources

ACTING RESPONSIBLY AND DELIVERING SUSTAINABLE QUALITY

BES 6001

Demonstrating our commitment to sustainable building, all our roofing products are certified under the BES 6001 standard for responsible sourcing and therefore contribute to extra credits under BREEAM and The Code for Sustainable Homes.

QUALITY STANDARD

All our factories in the UK are ISO 9001, 14001 and ISO OHSAS 18001 accredited. They achieve the highest standards in quality, health & safety and the environment.

CE MARKING

All of our products covered by EN Standard carry an appropriate CE Mark. This means that our products meet the required safety standards and have a guaranteed level of quality.

TOOLS

Tools and assets that make design and specification as straightforward as possible.

SPECRITE

Produce instant NBS clauses that meet the recommendations of British Standards and Codes of Practice: marley.co.uk/specrite

TILEFIX

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

ROOFING ESTIMATOR

Create a complete bill of materials for your project based on a wide range of building and roof types: marley.co.uk/estimator

BIM

BIM Space is a set of free-to-download Building Information Modelling (BIM) objects that provide a standard range of build ups for all of our products: marley.co.uk/bim

CAD DETAILS

Access to over 2,000 CAD drawings illustrating how specific tile and slate details can be formed: marley.co.uk/cad

ROOF SYSTEM SELECTOR

Easy-to-use and comprehensive system finder delivering results from choice of pitch, material or tile type: marley.co.uk/productselector

RESOURCES AND TRAINING

SAMPLES

Samples of clay and concrete interlocking and plain tiles are available on request.
Call 01283 722588 or visit marley.co.uk/samples

FIXING INSTRUCTIONS AND LITERATURE

Comprehensive sitework, fixing and installation literature and videos: marley.co.uk/resources
All current product and technical literature can be downloaded: marley.co.uk/downloads

CPDS

A range of Continuous Professional Development roofing seminars accredited by the RIBA CPD Certification Service. For more information or to make a booking: marley.co.uk/cpd

TRAINING

Theoretical, practical, engaging and informative training available at three locations nationwide.
marley.co.uk/training

Tell me more

Call 01283 722588
Email info@marley.co.uk
Or visit marley.co.uk

Marley, Lichfield Road, Branston, Burton upon Trent, DE14 3HD