

Shake Installation / Fixing Specification

Handsplitted and Re-sawn Shakes give a roof or wall a highly textured surface.

Western Red Cedar Handsplitted and Re-sawn Shakes

These are handsplitted from blocks of Cedar with the natural grain of the wood, and then re-sawn to produce one smooth surface. Shakes are available in a wide combination of lengths and thicknesses.

Shape and Dimension

John Brash has 600mm x 19mm 'heavy re-sawn' Shakes available in stock. These give the roof or wall a highly textured surface. Other types of Shake are available to special order only. As with Shingles, Shakes are supplied by the bundle, ready to fix.

Battens

Should be strong and stiff enough to withstand the proposed loading and to provide adequate fixing and alignment. The minimum batten size recommended on rafter centres up to 600mm is 25mm x 50mm. John Brash JB-RED factory graded battens should ideally be used. Rafters should be a minimum size of 38mm x 75mm.

Nails

For maximum life, fixings should be made with 2 no. 45mm x 2.65mm silicon bronze annular ring nails per Shake (stainless steel can be used as an alternative). As a guide 0.9kg of nail are required for bundles of four Shakes.

Fire

Some building regulations impose certain restrictions concerning possible fire risk and may require a fire retardant treatment, for example, FRT exterior[®] which achieves the following performance -

- Euroclass B to BS EN 13501-1 (transposes to Class 0)
- Euroclass C to BS EN 13501-1 (transposes to Class 1)
- AAP60 rating BS 476: Part 3:2004 external Fire exposure of Roofs

Shakes that are treated with a preservative have a 'CB rating'.

Preservation

Cedar Shakes which are treated by John Brash to a specially designed cycle and formulation, carry a 40 year treatment guarantee against all forms of wood rotting fungi and insect attack in compliance with BS 8417:2011.

Frost

Cedar Shakes are resistant to frost.

Thermal

Shingles & Shakes offer a high degree of thermal insulation with a value of $K=0.1067 \text{ W/m}^2\text{C}$.

Roll Vent

Roll Vent is relatively new to the UK but has been available in the USA for many years. It is used where both ridge and eave ventilation is required.

Roll Vent complies with the requirements in the USA (CABO, BOCA, SBCCI and iCBO, FhA and US department of housing and development) with independent certification. This product gives a nett free area of 38,100mm² per m (18 sq. inches per linear foot) and should be installed in a balanced system. Full technical details are available on request.

Roll Vent is simple to install.

Conditioning

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

Fixing Guidelines

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

When used as vertical cladding; to prevent cladding coming into direct contact with porous or wetted surfaces John Brash recommend use of either a damp proof membrane or flashing or leaving a sufficient gap. In all cases a gap of 150mm - 200mm should be left below the bottom of the cladding and ground level. The Cedar should always be kept clear of any flashings below, by at least 10mm. The top edges should also be well protected.

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

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

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

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

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

See the TRADA External Timber Cladding Guide for full details.

Waste Disposal

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





Estimating

Coverage

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

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

- i. Double Starter Course - 1 bundle of Shingles for every 9 linear metres (2 courses) or 1 bundle of Shakes for every 7.5m
- ii. Valleys - 2 bundles for every 7.5 lin.m.
- iii. Hips & Ridges - 2 bundles for every 7.5 lin.m (traditional method)

Nails

For maximum life fixing should be made with 2 no. 45mm x 2.65mm silicon bronze annular ring nails per shake.

As a guide approximately 0.9kg of nails are required to fix four bundles of shingles.

Type	Vertical	2 Ply	3 Ply
(600mm) & resawn			
Gauge -	290 mm	250 mm	190 mm
Coverage -	2.12 m ²	1.83 m ²	1.39 m ²
Battens 25 x 50	3.5m per m ²	4.0m per m ²	5.3m per m ²

Fixing Method Fixing Specification

The Shakes should be fixed at the appropriate gauge directly onto roofing battens. A double course of shingles or an additional course of Shakes should be used as a starter course at the eave. The Shakes should project at least 38mm beyond the eave protection or if a gutter is used at least to the centre line of the gutter. They should extend 38mm over the verge or gable moulding/barge board. Shakes are usually laid in straight lines but this application may be varied to produce different patterns i.e. staggered butts, double or shadow coursing. The maximum gauge should never be exceeded. Shakes can accommodate changes of roof pitch and curved roofs.

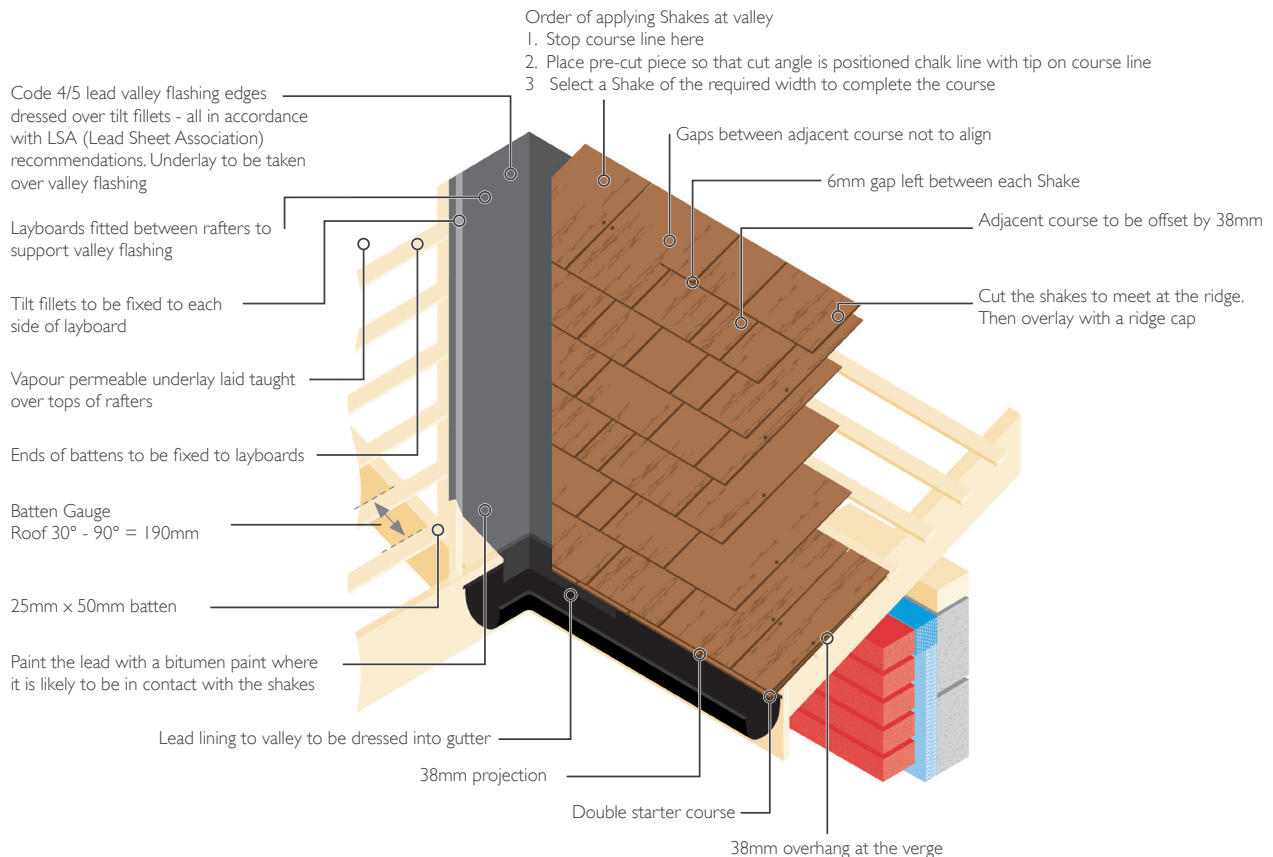
The Shakes shall be spaced 6mm apart and be nailed twice; the nails should be fixed 19mm in from the edge and 38mm above the butt of the course above.

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 5534:2003+A1:2010. John Brash recommends 25 x 50 JB-RED factory graded battens.

Underlay: For roof pitches of 20° - 30°, a reinforced bitumen roofing felt underlay, complying with the specifications for types 1F or 5U detailed in Annex A of BS 5534:2003+A1:2010, is required between the Shake courses. This acts as a baffle to prevent the ingress of wind driven snow, or other foreign matter, into the roof space. The strips of felt should be fastened to the lower part of the next batten exposed above the head of the Shake, and the lower edge of the felt should be at a distance above the butt equal to twice the weather exposure. For example, 600mm Shakes laid with a 250mm exposure would have felt applied 500mm above the butt. Thus the felt will cover the top 100mm of the Shakes and extend 357mm onto the sheathing. Note that the top edge of the felt must rest on the spaced sheathing.

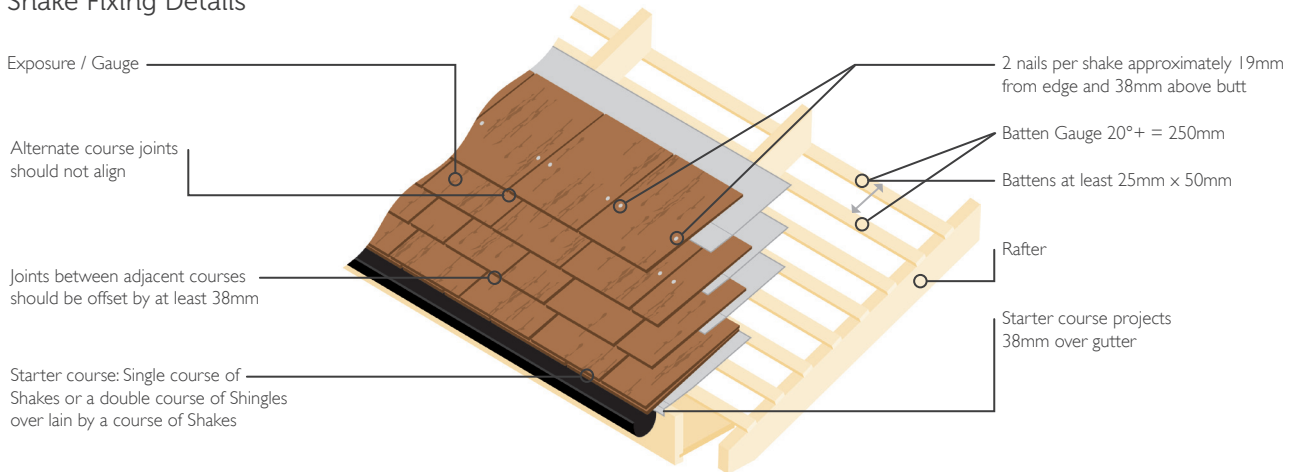
As an alternative for steeper pitches, where the slope of the roof is over 30°, a more simple method of fixing may be used. A vapour permeable/water impermeable type underlay to Annex A of BS 5534:2003+A1:2010 is recommended and is laid over the rafters and battened in the traditional fashion. We would recommend using a 3-ply roof construction in this case. In conditions of severe climatic exposure or other exceptional applications, please contact John Brash for further advice.



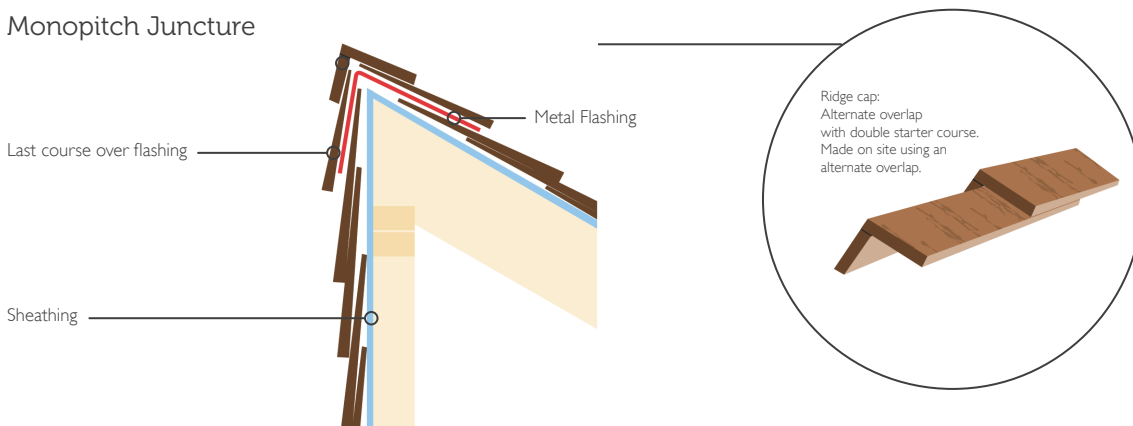
Fixing Method Fixing Specification – 2 Ply Construction

Shakes can be used over a variety of roof types. – boarded roofs, metal decks and warm roof construction. Care should be taken to follow current building regulations and individual specifications can be determined in conjunction with the insulation manufacturer. Typically counter battens are used to create a vented space over the insulation, where a water impermeable membrane must be used as there is the possibility that water may penetrate through the roof covering.

Shake Fixing Details

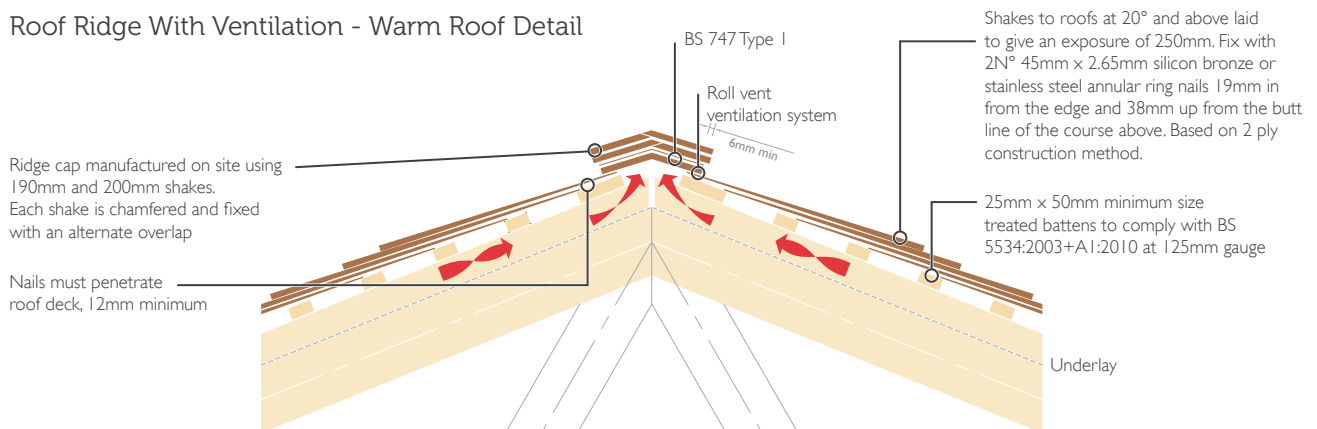


Monopitch Juncture



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

Roof Ridge With Ventilation - Warm Roof Detail



Fixing Method Fixing Specification – 2 Ply Construction (continued...)

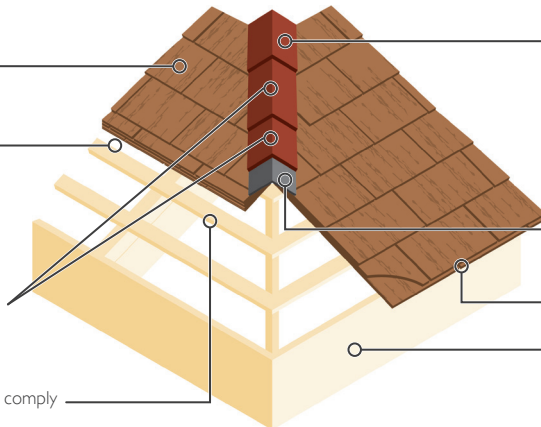
Hip Detail

Shakes to roofs at 20° and the same exposure as the roof. Fix with 2 N°. 45mm x 2.65mm silicon bronze or stainless steel annular ring nails 19mm in from the edge and 38mm up from the butt line of the course above

Water vapour permeable underlay

Alternate overlaps

25mm x 50mm minimum size treated battens to comply with BS5534:2003+A1:2010 at 125mm gauge



Intersecting roof surfaces at hips to be capped to ensure a weathertight joint. Either site made or factory assembled hip units may be used but both types must have alternate overlaps and concealed nailing. Weather exposure should be the same as for the body of the roof. Nails must be longer than those used for the body of the roof and of all sufficient length to penetrate 19mm into the battens

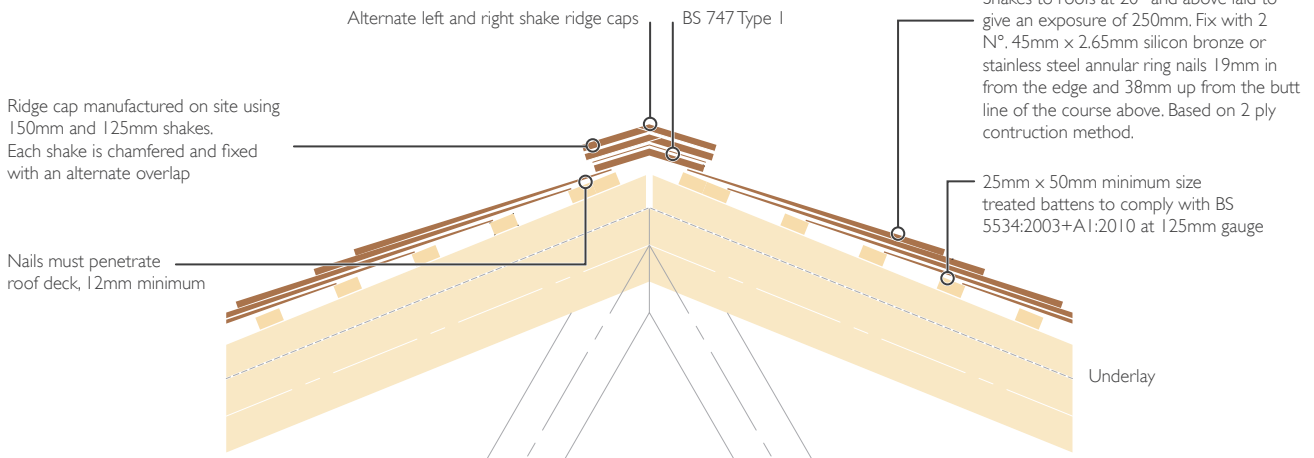
Strip of felt on edge over ridge and hip covered by ridge cappings

Shakes to project over fascia 38mm

Fascia board

Ventilation should be at eave level and a Roll Vent ridge ventilator is available from John Brash & Co Ltd.

Roof Ridge Without Ventilation



Ridge cap manufactured on site using 150mm and 125mm shakes. Each shake is chamfered and fixed with an alternate overlap

Nails must penetrate roof deck, 12mm minimum

Alternate left and right shake ridge caps

BS 747 Type I

Shakes to roofs at 20° and above laid to give an exposure of 250mm. Fix with 2 N°. 45mm x 2.65mm silicon bronze or stainless steel annular ring nails 19mm in from the edge and 38mm up from the butt line of the course above. Based on 2 ply construction method.

25mm x 50mm minimum size treated battens to comply with BS 5534:2003+A1:2010 at 125mm gauge

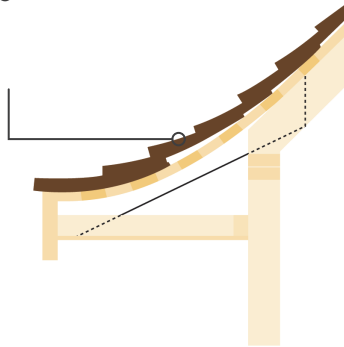
Underlay

Valleys should be code 5 lead or as specified and should be at least 375mm in width and should be coated with patination oil or bituminous paint where contact is made with the shakes. The shakes should lap the lead by not less than 178mm on each side. Flashings shall be in accordance with good building practice and should be coated with patination oil or bituminous paint where contact is made with the shakes.

Typical Roof Details

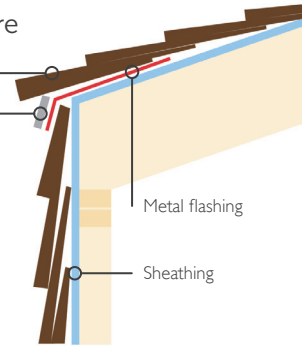
Swept / Ball Eave

For excessive sweep the shakes may be bent



Convex Roof Juncture to Vertical Cladding Juncture

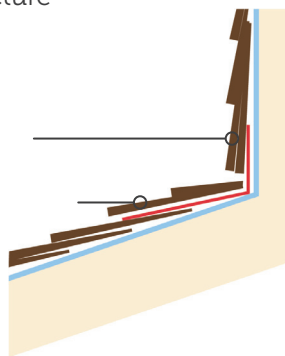
Double or triple starter course
Narrow shingles applied horizontally or wood moulding



Concave Roof Juncture

Double starter course

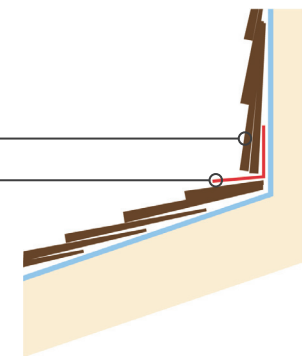
Two last courses over flashing



Concave Roof Juncture

Double starter course

Metal flashing



Fixing Method Fixing Specification – Vertical

Shakes are applied in the same manner as for roofing except there need only be a two ply (2 thicknesses of shingle) rather than 3 for roofing. Shakes are nailed directly onto battens that can be fixed to masonry or studs. A breather paper is used behind the battens. Double coursing can give attractive shadow lines. Here Shakes are applied at an extended gauge but with two courses together. Staggered butts can also be effective. Outside corners are laced with an alternate overlap and inside mitred with a flashing behind.

