



# wooden roof shingles



## what are they?

They're waterproof wooden tiles for exterior cladding of buildings – more typically roofs, but also walls.

A shingle is a shaped (profiled or dressed) shake. In other words, a shake is a raw, split piece of wood and a shingle is that same shake shaped to have a slightly different angle (slightly thicker towards the bottom), and a chamfered bottom edge to make it easier to lay on a roof.

A shake is a quick, rustic product and a shingle is a more refined, crafted product.

Historically, shingles and shakes were one of the original natural roofing materials, along with thatch and stone (including slate).

Fired clay roofing tiles came along and eclipsed shingles, but they're now enjoying a renaissance.

Traditionally, building materials and styles were vernacular, and the underlying geology and flora of a region determined the type of buildings that people made.

So roof slates were first used in Wales, thatch in flat fen and reed areas like Norfolk, stone roofs where there are easily available stone deposits like the Cotswolds, and shingles in wooded areas, especially with oak forests.

Shingles and shakes in Britain were traditionally made of oak or sweet chestnut – both of which have a natural durability due to their high tannin content.

More recently, western red cedar has been used as a shingle material. It's not native to Britain, although it can and does grow here. It's also naturally durable, but won't last as long as oak or chestnut in the UK climate.

Shingles and shakes are used throughout Europe and North America, and in many other countries where splittable and durable woods are found.

Traditionally they're riven (split) by hand along the grain – it's easier to split wood this way, but also it means that none of the vessels in the wood are cut through (vessels are the vertical tubes within wood that sap travels up).

Often, modern roofing shingles are sawn rather than split, which means that the vessels are sawn through and exposed, allowing water to enter the shingle, thus starting decay earlier.

## what are the benefits?

- They can be made locally, by hand – boosting the local economy, reducing the distance that resources have to be transported, and benefiting craftspeople rather than large corporations.
- Shingles have low embodied energy (all the energy required to produce and distribute them) compared to modern mass-produced alternatives (like concrete tiles).
- They create demand for forest products, and so encourage the planting of trees and the maintenance of woodland, which provides habitat for wildlife and improves air quality.
- They contribute to keeping traditional crafts alive.
- They're biodegradable.
- Like all timber products, they lock up CO<sub>2</sub> for their lifetime, so reducing the amount of carbon that would otherwise be in the atmosphere, contributing to global warming.
- They have a charm characteristic of natural materials, and give a unique look to buildings that can't be matched by factory-produced building materials.



*Lowimpact's Katrina modelling a cedar roof shingle.*



*A building in Sheffield with oak shingles on the roof and walls.*

### what can I do?

You can buy shingles, or you can make them yourself. If the average roof is 30-40m<sup>2</sup>, and at around 50-70 shingles per square metre, that will mean up to 2,800 shingles for the average roof. So you might want to make some and buy the rest, or get some friends round to help you make the lot. You can attend a course to learn how to make and lay them, and get some practice. Below is an outline of the process.

#### Making shingles

You need to get some straight-grain and hopefully knot-free oak or sweet chestnut (in the round). You can get this from a local forester, woodsman or timber yard, or you can check on coppice products website (see resources).

You need to cross-cut the round timber into 400-450mm lengths, split the rounds of wood in half, then each piece in half again – splitting radially from the centre like the spokes of a bicycle wheel. To do this you need a froe, and you can make or buy a large wooden mallet. Reject the bark, sapwood and pith as it will rot quickly – only use the durable heartwood.

Then if you wish to dress or shape the shakes that you've split – i.e. to make shingles, you'll need a drawknife and a shavehorse (to sit on, and clamp the piece of wood while you work it. You can even make your own shavehorse – see the green woodworking resources on our site.

#### Fitting / laying shingles

Shakes and shingles are fitted to roofing battens (thin strips of wood attached horizontally on top of the rafters). They're nailed to the battens with roofing clouts (made of copper, galvanised or stainless steel – from your local builders merchant). When you lay a shake or shingle on a roof, you work from the eaves to the apex – i.e. from the bottom up. They're overlaid, so that at any point, there are three shingles overlapping – i.e. the roof is three shingles deep. At the ridge you overlap the shingles at the top of each side of the roof, and add another layer for more protection.

### resources

- [lowimpact.org/roof-shingles/](http://lowimpact.org/roof-shingles/) for more details on the installation, care and maintenance of wood shake & shingle roofs, plus links & books, including:
- William Johnson, *Roofers' Handbook*
- W Spence, *Roofing: Materials & Installation*
- McCurry & Chase, *Bark House Style*
- [coppice-products.co.uk](http://coppice-products.co.uk) – round wood for sale
- [cedarbureau.org](http://cedarbureau.org) – US site with information on installation and maintenance
- [abedward.com/roofing/cedar-roofing](http://abedward.com/roofing/cedar-roofing) – info on replacing shingles



*Splitting a log with a froe and a wooden mallet.*

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