

Slating & Tiling

TIPS 78

Sizes of natural slate

What is the appropriate size of natural slate to be specified, and what do we know about the range of slate sizes available?

History

If you were to collect together all of the different sizes of slates that have been available since 1750, you would find that the list would include 46 imperial sizes, and 33 metric sizes for standard slates, with additional double and slate and a half width slate, and eaves/top length slates for each size, some of which were the same as other standard size slates.

If we were to go back to the beginning of the 1700s in North Wales, the extraction of slates for roofing was very disorganised with roofing slates having no defined shape and extracted to the biggest size possible. These were termed rag slates, and each and every one was a different size. To make things a little easier one or two sides of the slate may have been dressed, but were still left as big as possible.

In 1750, General Warburton of Penrhyn Quarry introduced a table of eight rectangular sizes. Each size was named after a female aristocratic title, starting with Queen for a large size and reducing to a Lady for a smaller size. This classification was adopted by other quarries and so began the sizing of slates.

Fairly soon additional sizes were introduced and further names were added like Small Empress and Broad Ladies, through to Singles, until there were 25 different named sizes. However some of the names covered a range of sizes.

With the introduction of steam powered machinery, saws and dressing machines, the production and transportation of the slates began to expand from a cottage industry to one of world wide proportions and the standardisation of slate sizes helped with the process.

Imperial

By 1933 there were over 40 different slate sizes, and it was decided by the British Standards Institute to dispense with the aristocratic names and adopt an imperial inch size from 36 x 20-inch down to 10 x 6-inch. Regardless of the dispensing of names by British Standards, the names have lived on, even if they are not officially recognised, and quarries continued to supply this vast range of sizes.

Not every size is available from every quarry and larger sizes are often not available in large quantities due to them being more difficult to produce than smaller sizes. Even diminishing and random slates can be supplied, which reflects the origins of slating, with every slate being a different size.

Metric

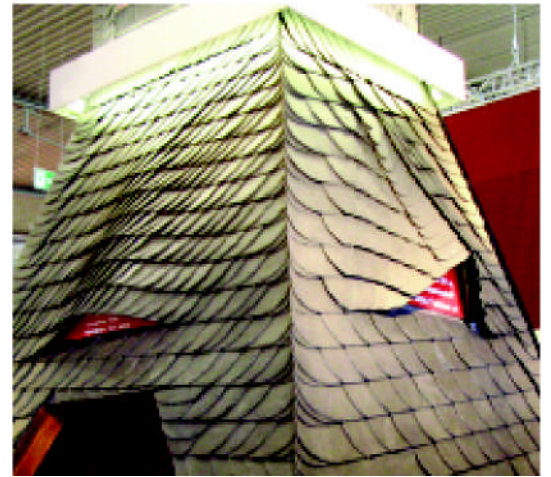
Meanwhile, in other parts of Europe the use of slate for roofing developed copying the Welsh model but to metric sizes close to the imperial sizes. As slates began to be imported into the UK from Spain, so a further range of 33 slate sizes from 600 x 450mm down to 200 x 200mm increased the range of sizes to 79 standard roofing slate sizes theoretically available, plus slate and a halves and eaves/tops, raising that number to above 100 different sizes available in the UK. Many of these sizes are not held in stock and are only available to order, therefore need to be ordered well in advance of delivery on site, especially from small quarries outside the UK. Meanwhile, slate quarries continue to supply slates in shapes other than rectangular to satisfy many local traditions, such as German fish scale slates.

Size range

If you look at the table of slate sizes you will see that for any given slate length, the smallest width is not less than half the length, and the widths increase from 150mm (6-inch) in 20-50mm (1-2-inch) steps up to 20-

50mm (1-2-inch) less than the length of the slate, and then jumps to a square slate.

There is one exception: a 20 x 9-inch slate, which, along with other 9-inch wide slates, was used for damp-proof courses in brick walls. The slate lengths are a maximum 920mm (36-inch) reducing in 50mm (2-inch) increments down to 200mm long.



It would be inappropriate to slate this size and shape of roof with queen size slates. An example of German fish scale slating.

Choice

With such a wide choice of slate sizes what is the correct slate size to choose? There are many different parameters available that relate to the physical size of the roof and the pitch of the roof, but it is the following rules of thumb that are most commonly used:

1. Use a larger slate on a large roof and a smaller slate on a small roof. Big slates on a small roof look out of proportion.

2. Wider slates perform better than narrower slates in areas of high rainfall as the distance from the side lap to the nail hole is further.

3. Smaller slates perform better in very windy locations as there are more nail fixings per square metre of roof.

4. Large slates cost more per square metre than medium size slates from the same quarry.

5. Small slates require more labour to install on the roof. 6 Small slates are not suitable for shallow pitch roofs.

7. Small slates are easier to install on a complicated roof with lots of hips, valleys, dormers, and other features.

8. Compare the cost of one square metre of slate, as opposed

Depending upon the width of slate and the gauge they are laid at, so the quantity will vary.

9. Is there an adjacent roof that the new roof must match, or join into? And what size are the existing slates?

10. What is readily available?

Conclusion

It will be impossible to comply with each of the 10 parameters but, provided the slate size meets a high proportion of the parameters – especially those with greater importance – so an appropriate slate size will be determined.

Tips

- Wider and longer slates can be trimmed down, smaller slates cannot be stretched.
- The cost of slate and a halves for large slates can be three or four times the price of a standard slate.
- Wider slates can be used down to lower pitches for a given length.
- Use diminishing slates sizes for curved roofs such as cones.

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