

# Slating & Tiling

## TIPS 17

### Accurate measurement on roofs

The one common tool that every tradesman, supervisor and designer has in their tool kit is the steel tape measure. It is used without doubting its accuracy and is trusted by all that use it.

But as a very regular user of the trusty steel tape measure, I am also aware of its shortcomings that can contribute to inaccuracies in the setting out of a pitched roof.

#### Right to left

Statistically the majority of people in the UK are right handed, therefore it would be natural for them to hold a steel measuring tape in the left hand and mark off, or note down dimensions, with a pencil or pen in their right hand. Therefore dimensions tend to be measured horizontally from right to left. Whilst this method brings the metric scale to the top edge of the tape, all the

numbers are upside down. Clearly left handed people using the same tape measuring from left to right have an advantage by having the numbers up the right way, thus reducing the risk of misinterpretation!

Most interlocking tiles and some accessories are designed specifically to be laid from right to left, therefore it is natural to measure and set out a roof from right to left, regardless of being right or left handed.

#### Metric or imperial

If you look closely at a steel tape measure you will see that when the numbers are up the right way, the imperial dimensions are at the top and the metric dimensions on the bottom. This is due to the fact that the majority of steel tapes sold have an American origin, where imperial is still preferred. Since the whole of the con-



- Right handed people tend to hold a tape in their left hand and mark off with the right. This results in the numbers on the tape being upside down.

struction industry converted to metric measure in 1974, and all specifications, literature and products are produced in metric, why is imperial measurement on the measuring tape at all? Whilst some roofers set out roofs in metric, the vast majority still use imperial measurement, due to the practice of roofing being a trade that is passed down from one generation to the next. Regardless of colleges teaching metric measurement, site practice seems to take precedence.

#### Dimensional errors

To set out a roof in imperial, technical information from British Standards, specifications or manufacturers literature has to be converted from metric into the nearest imperial equivalent. This is where the first error in setting out a roof begins. A batten gauge of 100mm is 2mm less than 4in, 200mm is 4mm less than 8in, 250mm is 4mm less than 10in, 300mm is 5mm less than 12in, 340mm is 3mm less than 13.5in and 355mm is 1mm short of 14in.

The second error of setting out a roof is the minimum division used. Most roofers will try and set out to the nearest quarter inch. If required they will work to an eighth of an inch, but few will work to a sixteenth of an inch. With metric measurement most roofers will set out to the nearest 5mm. If they are required they will set out to 1mm. If we do a very accurate conversion from imperial to metric, one quarter of an inch is 6.35mm and one sixteenth of an inch equals 1.587mm. Therefore working only in metric measurement can be more accurate than converting to imperial to do the same job.

The third error of setting out is multiplication and division. Slates and tiles, being small ele-

ments, require a large degree of repetitive measurement. Metric being to the power of ten makes multiples or divisions of any given dimension far easier to calculate (especially without a calculator) than imperial measurements and fractions.

For example, 55 plain tile gauges measured in metric would be 55 by 100mm = 5.5m.

The same calculation in imperial would be 55 by 3 15/16th = 165.00 + (55 - 3 7/16th) = 216 9/16th inches or 18ft 0 & 9/16 inches.

Of the two, the metric calculation is most definitely the simpler!

#### Conclusion

Whilst inaccuracies of setting out are not strictly the fault of the steel measuring tape. The fact that a metric only tape is almost impossible to buy encourages, rather than discourages, the continued use of imperial measurement. Roofers' steel measuring tapes should be metric on both edges with the numbers set so that they can be read easily for both left and right handed use.

While old habits die hard, adopting metric measurement for all construction work, including roofing, is far easier than imperial once learned. It is also more accurate and quicker to undertake than imperial, and will become more so when steel measuring tape manufacturers realise that not everybody is left handed or measures from left to right. ■

Compiled by Chris Thomas, The Tiled Roofing Consultancy, 2 Ridlands Grove, Limpsfield Chart, Oxted, Surrey, RH8 0ST, tel 01883 724774, Email: [chris.thomas@thetiledroofingconsultancy.com](mailto:chris.thomas@thetiledroofingconsultancy.com)

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