



Using double lapped slates on curved roofs

There is a lack of written information generally available which would be of use to the specifier. This type of detail is generally regarded as an 'on site' detail, ie to be worked out by the roofing contractor.

The nature of a curved roof means that the linear distance of each row of slates or tiles alters course by course.

To successfully slate a curved roof it is therefore necessary to progressively reduce the width of each slate (in the case of a convex face) or increase the width of each slate (in the case of a concave face).

This involves cutting the sides of each tile in order to keep to the curve and maintain bond.

Single lap tiles function by interlocking or overlapping with each other linearly, therefore cutting these to reduce the width will remove or damage the interlocks. So, short of manufacturing lots of different widths of tiles, it is not possible to tile such a roof using single lap tiles.

But double lapped slates lend themselves particularly well to curved roofing because they simply 'butt' together linearly and can therefore be cut to adjust linear coverage and maintain the curve.

All the rules that generally apply to slating (eg regarding bond, lap, pitch, mechanical fixings) still apply to a curved roof, therefore the roofing contractor must ensure that slating is done in accordance with the relevant British Standards. The headlap should not be less than is recommended for the particular pitch and exposure category. The minimum sidelap should be determined using the methodology given in BS 5534.

Method 1: Fix full, uncut slates in each course until the side joint drifts to a minimum one third of the width of a slate. Then cut a slate along its length and fix to bring the side lap back to within the required area. The perpendicular joints are not kept in line using this method but the amount of cutting required is kept to a minimum.

Method 2: Fix slates in each course ensuring that the side joint occurs over the centre of the slate below. In order to keep the side joints to perpendicular lines far more cutting of individual slates will be necessary. On tight curves every slate may need to be cut to ensure that gaps at the side joints do not exceed 3 mm.

It is worth remembering that when cutting material from the width of a slate there will remain a cut edge which may not be as aesthetically pleasing as the original manufactured edge. This is particularly significant when tiling to convex roofing areas.

When slating a conical tower, as the slating progresses up the curve it will eventually become impossible to achieve the required minimum side lap, due to the narrow width of the cut slates. At this point lead soakers could be used to weather beneath the slating. When it becomes impossible to cut and fix reasonable sized slates then it would be necessary to provide a lead flashing (ie cap) at the apex.

The success of this type of work very much depends upon the skill of the roofing contractor. A curved roof is very labour intensive and therefore it is advisable to appoint a competent roofer who is experienced in this form of roofing.

For more information please contact Sandtoft Technical Support on 0870 145 2021.

March 06



Dr John's technical notes