

Slating & Tiling

TIPS 37

Plain tile swept valley

There is a notion that pitched roofs look more romantic if the plain tiles sweep gently from one roof slope to another, without the interruption of a sharp corner or a break in the construction, just like a thatched roof.

Swept valleys are fairly rare, require a lot of tile cutting, and can be costly to construct. Therefore, understanding their advantages and disadvantages before specifying or constructing a roof incorporating a swept valley is essential.

Swept valley

A swept valley is a valley formed of tapered tiles nailed to a support board that bridges the junction of two roof slopes at an inclined valley. Each horizontal tile course is maintained and no special valley tiles are needed. The design of a swept valley is traditional with stone slates, and to some extent natural slates. Forming a swept valley with plain tiles is almost impossible to achieve and comply with British Standards 8000 Part 6 and 5534.

For a swept valley to work the rafter pitches on both sides of the valley must be the same (ideally steeper than 40°). It also works best if there are two swept valleys that meet at a ridge that is part way up a main roof slope, such as a dormer. In this situation the curve is run up and lost into the roof slope above. The actual junction is covered by the ridge tiles that are turned up the roof and also lost into the roof slope. If the valley is not part of a matched pair, the valley will meet a square ridge junction. This will leave a curved exposed section that will need a large curved lead saddle to cover up the difference between the two.

Support boards

Three boards need to be installed to ensure that the tiles form a curve around the valley. The underlay should be installed in the normal manner with a 225mm wide timber (not

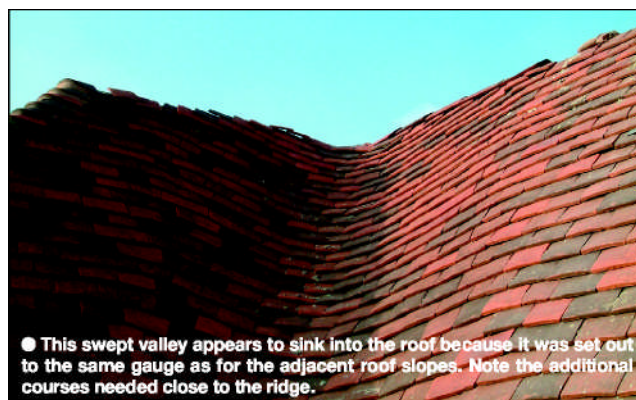
ply) board laid straight down the centre of the valley. Preferably this will be the same thickness as the tile battens, and nailed into each rafter. The width of the board can vary slightly depending upon the rafter pitch. The other two boards should be feather edge boards at least 100mm wide (fence pales) fixed down the sides of the centre board with the thinnest edge facing the centre line. These should be positioned to halve the angle between the rafters and the first support board, and should be nailed to the support board.

With the adjacent roof slopes, the support boards should form five surfaces onto which the tiles can be nailed. The tile battens on each roof slope should be cut against the thick edge of the feather edge boards to finish flush with the top surface and to align horizontally with the battens on the adjacent roof slope. None of the battens are cut around the curve.

Eaves & gage

As the swept valley forms a curve (most eaves fascia boards or open rafters meet at a sharp right angle at the bottom of the valley) the under eaves course of tiles needs to be set to meet at a mitre parallel with the fascia board. The first full course of tiles should be set in the curve as for the rest of the valley. However, some people like to keep this course parallel with the fascia, mitre it with a soaker, and form the curve of the valley on the second full course of tiles. Either is acceptable.

The distance up the centre line of a valley will be longer than the distance up the rafter for the same vertical rise. To achieve the same number of tile courses around the curve of the valley, the gauge of the tiles on the centre line of the valley will be greater than for the tiles on the adjacent roof slope. This means that either the whole roof must be set out at the min-



● This swept valley appears to sink into the roof because it was set out to the same gauge as for the adjacent roof slopes. Note the additional courses needed close to the ridge.

imum gauge of 88mm, such that the tiles on the centre-line of the valley do not exceed 100mm gauge, or if the roof is set out at 100mm gauge, the tiles on the centre line of the valley will have a gauge of more than 100mm. The closer to vertical the rafter pitch is, the smaller the difference in gauge. The difference in gauge will depend upon the rafter pitch. Unless the rafter pitch is steeper than 59° it will be impossible to keep within the 88mm-100mm gauge parameters and the maximum and minimum head-lap requirements of BS5534, without resorting to other means.

One means of overcoming the problem is to lay sheet lead soakers, or other similar material, between each tile course around the valley. The gauge increasing is not a problem with stone or natural slates as longer slates can be used up the valley to maintain the required head-lap for the true pitch.

Side lap

As the tiles progress around the valley on each course from one roof slope to the other, the tiles must be cut to a taper to fit. Tapering the tiles makes the tiles at the leading edge narrower and the perp joints should be maintained on the curve and lost in the adjacent roof slope. Each tile joint on the curve should fall in the centre of the tile below to give the maximum side lap with the joint on the course below. This is best achieved by setting out the valley from the centre line and working out onto each adjacent roof slope. BS5534 requires a minimum side lap of 55mm.

As the tiles are cut to a taper and work progresses up the roof, the side lap will increase to the point where a tile is not wide enough and a tile-and-a-half is needed. When it is possible, two tiles should be cut to

finish on the tile-and-a-half. The resulting cuts will mean that many of the side laps will be less than 55mm. Laying courses of sheet lead soakers or similar material between each course of tiles around the valley will protect the lack of adequate side lap. This is not a problem with slates as wider slates can be used around the valley.

As there are no battens around the curve of the valley, the tile nibs need to be removed were they in contact with the support boards. Each tile that has been cut to a taper needs to be nailed twice to the support board. If the nail hole has been cut off, it should be re-drilled as two nail fixings are essential. One central nail fixing would coincide with the joint of the tiles above and be prone to leaking.

Tips

- ~ Swept valleys may look good if done correctly but will not comply with British Standards, unless large soakers between each course of tiles are used.
- ~ The fixing of the support boards and the maintaining of the horizontal line around the curve is critical.
- ~ Down the centre line of the valley the gauge of the tiles will be in excess of the tiles on the main roof slope. Never maintain the same gauge around the valley as this will generate additional tile courses and look strange.
- ~ Unless the side lap exceeds 55mm, a large soaker between each tile course will be needed.

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