



Slate Fixing Guide

This guide was designed for the professionals in the roofing industry to follow the Good practice for Slating to achieve best result on every project.



Dressing, Grading and Holing Slates.

Each slate should be inspected and the thicker end selected for the tail. Slates may be holed either by hand or machine, from the bed towards the face, thus leaving a small countersunk hole which takes the fixing nail head. When holing by hand, the slate must be laid flat over a narrow iron with the hole being formed as close to the iron or lock as possible and on the same sided as the slate head. Care must be taken to avoid undue spalling (breaking of layers or pieces of from the surface). Each slate should be twice holed at a distance from the tail equal to the holing gauge; each hole being formed as near the edge as practicable (usually between 20 and 25mm). Whilst holing, the slates should be graded according to thickness in three separate parcels. Thicker slates are used on the bottom section of the roof, medium slates in the middle and the thin slates at the top. Any broken and twisted slates should be saved and dressed (cut) for under eaves, top slates, half slates or raking cuts. Holing at the head of the slates is not recommended.

Preparation Before Slating

Slating can be either laid direct to softwood batten or boards. In either case an underlay is recommended, either between the battens and rafters or direct to boards. Where battens are laid direct to boards, it is advisable to lay counter-battens or laths down the roof slope to raise the level, and thus give any moisture that may accumulate a free run down the roof slope.

Battens should be laid horizontally across the roof at a vertical distance equal to the battening gauge from the bottom of each batten. The battens should be nailed at not more than 600mm centres, and the ends of each length should always be fully supported. Some roofs may not be flat, especially old roofs, to help make a good job, pack out the rafters with laths.

Eave Course

The eave course must be supported by a continuous tilting piece or fascia. The slating should overhang by an amount (usually about 50mm) sufficient to ensure that water discharges into the gutter. Where the underlay may sag and form a water trap behind the fascia, it should be supported. There must be a double course of slates at eaves, formed by laying a course of short under eave slates, over which the first course of full slates is laid. The under eave course of slates should be laid on their faces and nailed to a batten placed immediately below the first full slating batten. The length of the under eave slates is calculated by adding the gauge and lap of the slate together.

Laying Slates

Slates should be laid with a broken bond and secured with nails to softwood timber battens or boards. Before fixing, perpendicular lines should be marked giving the correct bond and spacings. Approximately 4mm should be left between the vertical joints of each slate, so that there is a free thoroughfare for water running down the roof.

Slating should be started at the eaves and fixed diagonally across and up the roof slope, thus ensuring each slate is fixed with two nails.

Verges

The overhang of slate at the verge should be between 40 and 50mm, and wide slates should be used in alternate courses to maintain the bond. The minimum width of any one slate in an exposed position should be 150mm. If an undercloak slate is used, it should be butt jointed, nailed if possible, and well bedded in mortar, which should then be struck off flush to the external face of the wall. The upper slates forming the verge must be bedded to the undercloak. Battens should carry over the edge of the undercloak slate to give additional support.

Top Course

Top course and under top course slates must be of such length as to ensure that a correct lap is maintained. Under top course slates should be cut to size with the uppermost corners removed. The top course should be nailed and bedded at the head in mortar, thus causing the tail of the slate to fit closely on the course immediately below. If required, a slightly thicker batten can be used for the uppermost batten.

Ridge and Hip Tiles

Ridge and hip tiles must be bedded and jointed in mortar. Where ridges meet, slate slips should be inserted under the junction and a solid mass of bedding squeezed up to fill the joint, which is then truck off and smoothed with a trowel. The lower edges must be set in mortar. A hip iron is fixed at the lower end of each length of hip.

Mitred Hip

A batten should be laid along each side of the hip tree. The slates are close cut and mitred down the line of the hip and laid with a light gauge metal soaker (provided by plumber) of sufficient size to lap and bond in with the slates of each course and to be nailed at the top edge. Wide slates are required for cutting so that sufficient width is provided at the head of the slates. The mitred hip cut should be formed in the reverse way to normal dressing (i.e. the cut should be made with the slate face uppermost), thus giving a straight edge to the hip cut on the slate face. In exposed conditions and for roof pitches below 30° mitred hips are not recommended.

Hip Cutting

A batten should be laid along each side of the hip tree. The slates should be cut close to the hip and bedded in mortar ensuring that the lower edge of the slates fit closely on the course immediately below.

Metal Roll Ridges

Metal roll ridges should be supplied and fixed by the plumber. The slating should be close cut to the wooden roll and head bedded in mortar so as to ensure that the tails fit closely on the course below. An additional mortar bed should then be formed in order that the plumber may dress the metal without damaging the slates.

Open Valleys

Valleys should be formed in metal (by plumber) on a board laid down the length of the gutter (by carpenter). The metal should be dressed over the entire valley with a turned-back welt on each edge. The edges of the slates cut on the rake must overhang the welt, leaving a minimum 100mm clear width of the metal valley showing in the centre. Wide slates should be used if necessary so that sufficient width is provided at the tail of each slate. Secret valleys are not recommended because of the difficulty in keeping the drainage channel clear.

Mitred Valley

A mitred valley is formed by slates close cut and mitred down the line of the valley and laid with metal soakers (provided by plumber) of sufficient size to lap and bond with the slates of each course and to be nailed at the top edge. Wide slates may be required for dressing, so that sufficient width is provided at the rail of the slates. The slates should be cut in the reverse way to normal dressing so that there is a straight edge on the face of the slate. Mitred valleys are not recommended below 30°.

Raking eaves

Slating should always be laid perpendicular to battens, and where an eave is not square the tails of the eave slate and under eave course must be dressed to size on the rake.

Abutments

The slates must be dressed close to the wall and a soaker (provided by plumber) inserted in each course. The length of the soaker should be 15mm longer than the combined gauge and lap of the slate, thus allowing the head of the metal to be nailed to the batten. The plumber should then cover the exposed soaker with a flashing. Secret gutters are not recommended.

Vertical Slating and Cladding

Slating to steep or vertical pitches should be carried out in exactly the same manner as roof slating, but using smaller sized slates. When vertical slating abuts main roof slating, the vertical slates should be cut as closely as possible to the main roof and made weatherproof by inserting soakers under each course of main roof slating. Where a change of pitch occurs between a main slated roof section and a mansard or vertical slated section, an apron flashing should be used (provided by plumber) fixed under the main roof slating and dressed down over the heads of slates below. The top course of the vertical or mansard slating should be head bedded in mortar, ensuring that the tail of the slates fit closely on the course immediately below, and a sound bed is formed to receive the flashing. Vertical angles are formed in the same way as the mitred hip.