

A GLOSSARY OF SLATE & STONE ROOFING



Caithness slating: single lap slating system where the perpendicular joints are under sealed with narrow slates.

It is similar to the Nordic system rasteheller med underliggende dekkheller



In this guide the term slate is used to mean both metamorphic and stone slates unless they are described as such. Terms with specific use are indicated by (sl) for metamorphic slates and (st) for stone slates.

Where a term has a restricted use it is indicated:

Col - Collyweston region Northants, Rutland, Lincs, Cambs.

Cots - Cotswold region: parts of Dorset, Somerset, Wilts, Oxon, Worcs.

Eng - England

Irl - Ireland

Lancs - Lancashire

Obs - obsolete

Pembs - Pembrokeshire

Pen - Pennine region including north-west and north-east England

Purb - Isle of Purbeck and south Dorset

Scots - Scotland

Welsh - Wales but often UK nationally

West - West country: Scilly Isles, Cornwall, Devon, Somerset, Dorset.

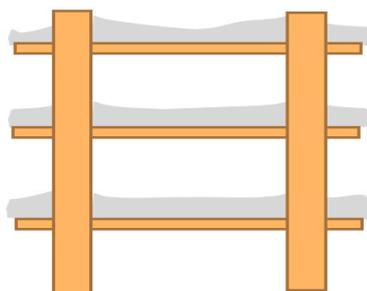
Yorks - Yorkshire but also adjacent counties.

www.stoneroof.org.uk/historic/Historic_Roofs/Introduction.html

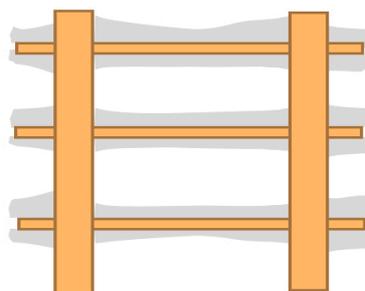
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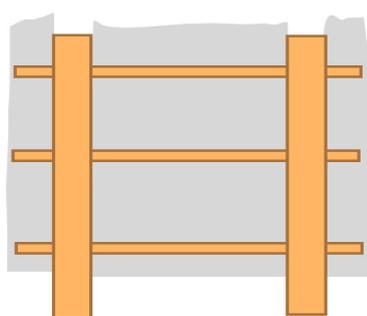
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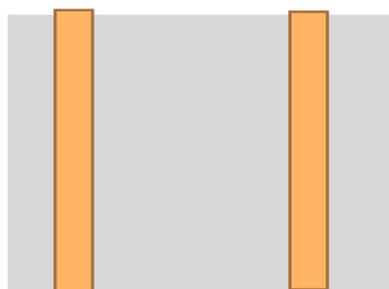
Single torching



Double torching



Full torching



Torched ceiling

Torching

Apron

panel of lead laid over slating at a top abutment or underneath it usually at a horizontal valley. A sacrificial lead apron is a similar panel installed to protect the valley lead from corrosive chemicals in water runoff

Arvon slate panel (sl)

post WWII, short lived, attempt to produce prefabricated slate roof panels to be assembled on-site. Two roofs were installed on Airey system houses in Deiniolen, Gwynedd

Back or face

upper side of a slate when laid on the roof of bed

Back bedding

mortar bedding to ridge or hip tiles which is not visible

Backer

narrow slates laid roughly centrally over a wide slate to accommodate the increasing number of slates in each course as work progresses up the roof. Synonym bachelor

Band

see head lap

Bachelor

see backer

Ballast

stone (usually rubble) used to support the eaves slating in some systems

Barge, barge board, barge slates

timber or slates fixed under an oversailing verge to protect an exposed rafter or purlin ends. Barge slating is often decoratively shaped

Batten

sawn wooden support for hanging or nailing stone slates. Synonym: lath. In slate and stone roofing guides the word lath is usually reserved for riven supports

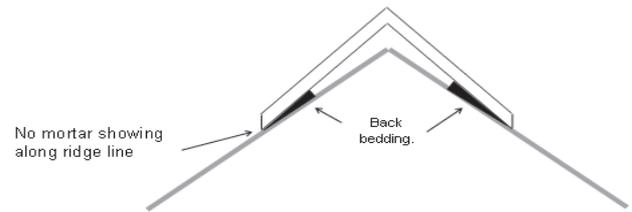
Batten gauge, lath gauge

spacing of battens or laths up the rafter. In double lap slating it is equal to the slate length minus the head lap and divided by two. In random slating it varies in relation to the slate length and is reduced at change courses qv

Bed, bedding

1 geological: defined horizon in a quarry or mine from which different products can be made

2 of rocks: a plane parallel to the surface of deposition of a rock. The plane along which stone slates often, but not invariably, split. The valuable fissile character of stone slate beds (especially limestones) is merely a local accident the



Back bedding



Backer



Barge slates

consequence of depositional processes and is often intermittent or impersistent

3 under side of a slate when laid on the roof of back

4 of slates or stone slates: use of mortar in spots or fillets to prevent stone slates from rocking. In some areas, it is used to improve weather tightness. qv head bedding, tail bedding, full bedding

Beetle, bettle

large wooden mallet used for preliminary splitting of slate rock into sizes suitable for cleaving (West, Lancs & Pen)

Bevel

shape of the edge of slates produced by dressing them to size and shape. For stone slates bevels take a variety of local or regional forms which are important to the local distinctiveness of roofs

Binder

wide butt over a backer (Yorks) - poor practice but not a technical problem

Brattfishing

ornamental cresting of cast or wrought-iron (Scots) cf crest, ridge tile

Break iron

bar against which a slate is supported when dressing it to size or holing cf slater's dog, synonym crapping iron

Breck

lift at the tail of the counters (qv) so that the slates rest on their head and tail and prevents the tails kicking (qv). (Yorks) Synonym tilt

Breeze

mixture of clinker and lime or cement. When used to bed slates it could be crushed down to fill any gaps without excessive separation of the slates

Calcite

form of calcium carbonate which can occur in layers or veins in metamorphic slates or as the cement which binds the grains in sandstones. cf carbonate

Carbonate - calcium or magnesium carbonate

potentially deleterious inclusion as veins or layers in metamorphic slates. When exposed to the air especially when there is acidic (sulphur dioxide) pollution an expansive reaction can occur which leads to swelling or cracking in the slate. In EN12326-1 (qv) the apparent carbonate content includes both calcium (calcite) and magnesium forms

Capillary action

movement of water due to its surface tension. Often used to explain the spread of water between slates on a roof. In the UK traditional slating systems and



Change course



Bevel



Calcite veins containing pyrite in a Spanish slate

laps have been more influenced by wind driven rain than by theoretical capillary action. All stone slates are too rough surfaced to be subject to capillary spread.

Case (st)

see heap

Caithness slating (t)

single lap slating system where the perp joints are under sealed (qv) cf Patent slating, undersealed, Orkney oversealed. Similar systems are traditional in Norway and Sweden

Change course

in random slating the first course of a shorter set of slates where the batten or lath gauge is reduced to ensure the margins diminish evenly and an adequate head lap is achieved cf pig

Centre nailing (sl)

slate fixing in double lap slating where the nails are positioned slightly above the head of the slate below cf batten gauge, holing gauge

Check, cheek nailing (sl)

additional nails placed low down in the perpendicular joint between two adjacent head nailed metamorphic slates fixed to sarking (Scot). Check nails are normally applied to the under eaves and first course slates and thereafter every third course.

Cladding

slating fixed to walls either directly to the masonry (cf shillet) or to battens with or without counter battens. The slates are also often pressed into mortar render or filling between the battens.

Cleave

splitting stone into stone slates. Sometimes also used for splitting of metamorphic slates but rive (qv) and riving are preferred. cf clive.

Cleavage

slaty cleavage is developed in fine grained rocks following metamorphism. Under the influence of pressure and heat the pre-existing minerals are partially re-crystallised and aligned perpendicular to the pressure. Slates cleave parallel to these platy minerals and almost always at an angle to the bedding. qv fissile, bedding 1.

Cleat

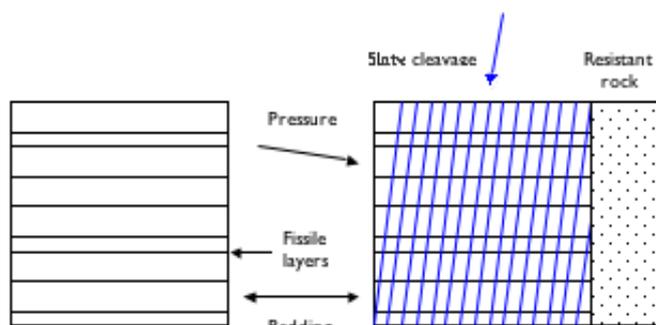
spike bent at right angles and driven into the rafter to hold thin laths with out splitting them. Synonym, cask / barrel / cooper's hook, tenter hook.

Clive (st)

setting frost cracked log (qv) on edge and gently tapping with a Collyweston slater's hammer on each side in turn until the splitting is complete. (Col) Synonym cleave (qv).



Check nail



Cleavage



Cleat - scale 25mm

Collar and tie valley

a valley of alternating courses of mitred slates (the collar) and a single long narrow slate (the tie) all laid triple lapped. (West & Pembs)

Colloidal slates (sl)

artificially coloured metamorphic slates developed by Oakley Slate Quarries Co Ltd in N Wales.

Common slates and slating (sl)

old form of West Country slates and slating, smaller than scantles laid at one third lap with rag courses at the eaves. "They were sold by the thousand with forty two small rags (qv) called prickers for the eaves." John Jenkins 1888 Delabole slate quarry: a sketch by a workman on the quarry. (West) cf mounter

Compo

mortar

Cooper's hook

see cleat

Cope, coping

sloping tabling finishing a gable which is upstanding from the plane of the roof cf skew.

Counter

under eaves slate (Yorks)

Counter-batten

batten laid up the rafter to raise the level of the slating battens. Commonly used to prevent pegs piercing an underlay or to provide a drainage or ventilation gap between the battens and an underlay. If the underlay can be installed with a sag between the rafters a counter-batten to provide drainage will not be necessary.

Course

single row of slates across the roof.

Coursing

setting out the courses of slates. In random slating the coursing has to be adjusted to take account of reducing slate lengths.

Crapping (st)

dressing stone slates by lying them across a crapping iron and striking them with a hammer (Cots) synonym dressing

Crapping iron (st)

iron over the edge of which a stone slate is dressed (Cots)

Crest, crece, crest, cresting

ridge stones, tiles or cast metal.

Crow steps

1 slate or stone set into a wall to throw water away from an abutment synonym feather, dropper



Mounters and rag slate verge similar to common slating



Counter and easing



Crow step

2 stepped top of a gable cope (Scot)

Cusome, cussom (st)

the eaves detail in Cotswold slating where the under-eaves slate is supported over the wall head on stone packing and with its head placed under the first batten or lath.

Delamination

separation of a slate or stone slate into layers often a result of frost action

Delph, delve

dialect term for a shallow quarry, especially in the north of England.

Delver

quarry worker

Diagonal slating

synonym for diamond pattern (qv) cf economical slating

Diamond pattern

double lap slating system using 'diamond' shaped pieces of stone hung from one corner. The shape is actually hexagonal. An ancient method found on many Roman sites and today in, for example, Dumfriesshire and Angus.

Diminishing

system whereby slates are sorted by length and laid with the longest at the eaves, diminishing to the smallest at the ridge. It is essential that the minimum head lap is maintained when there is a change of slate length between two courses. This also ensures that each successive margin is the same size or smaller than those below qv pig.

Dormer

window set into a roof slope cf rooflight

Double battening

the use of two battens to prevent the fixing peg tilting. For conservation the mortar methods (head bedding or torching) are more appropriate.

Double lap

slates laid so that each course overlaps the course next but one below. Cf single lap, triple lap

Doubling course

under eaves course qv.

Dressing

1 shaping a stone slate and producing the edge detail using either a special hammer or a bladed tool. Regional differences exist for the edge detail which may be square or bevelled. Synonyms: trimming, fettling (Yorks, Lancs) crapping (Cots), napping (Col).

2 shaping and producing the beveled edges of



Delamination in a Brazilian 'slate'



Diamond pattern



Dressing

metamorphic slates by hand using a sax (qv) or similar tool or by rotary guillotine or other machine.

Dressing iron

spiked blade against which slates are dressed on a roof. Synonyms sage (Scot) slater's dog

Drop course

Slate or stone course with a reduced gauge applied where the slate length reduces synonym change course

Dropper or feather

flat stones or slates set into a wall or chimney to protect the vulnerable slating abutment from water penetration. (West) qv crow step 1

Easing

first course (Pen)

Eaves, eaves course

1 the overhnging lower edge of a roof

2 the short course of slating laid at the eaves under the first full course. The method of placing and supporting the eaves of stone slates varies regionally. Synonyms: under eave(s), cussome (Cots). qv triple eaves

Eaves tilt

see tilt. Synonym eaves kick

Economical slating (sl)

1 term applied by several companies to diamond pattern (Fletcher C20) and Patent slating (Penning 1848) (qv).

2 single lap system using underlay or plastic damp course laid continually along each course to act as soakers for the open perp joints. A bad method which will not last long.

Edge dressing

see bevel

Ellen (sl)

A roofing slate (West)

End lap

see head lap

EN12326 -1, 2 & 3 (sl)

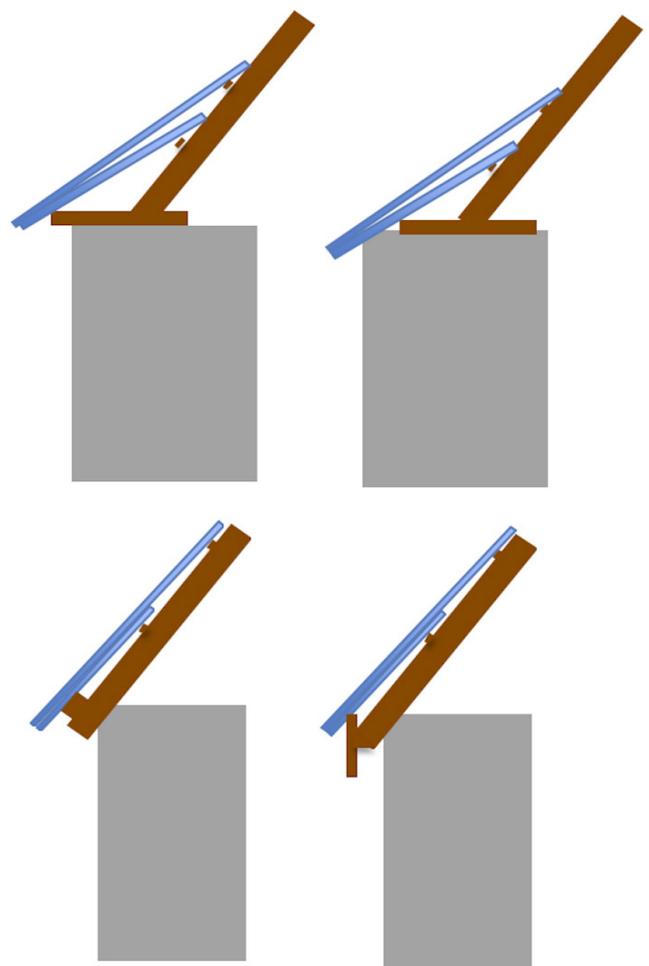
European standards for roofing slates. Part 1 covers matamorphic materials, Part 2 is the test procedures and Part 3 will (in the future) cover schsits and phylites

Exposure

1 to weather: most commonly the conditions of wind and rain which apply to a roof or location. Less commonly the severity or frequency of frost.



Drop course



Eaves tilt can be created in a number of ways

2 of slates: the area of the slate or course of slates not covered by the overlying slates or course.

Eyebrow

slating swept up from either side over a dormer window

Facies

geological term. The sum of features such as sedimentary rock type, mineral content, sedimentary structures, bedding characteristics and fossil content which characterise a sediment as having been deposited in a given environment.

Felt

underlay (qv) especially BS747 1F reinforced bitumen type. Earlier types included hair felt.

Feathers

1 see plug and feathers.

2 see droppers.

Fissile (st)

rock which can be split along bedding planes qv cleavage.

Fire proof roofing

iron frame building system

Fixings

nails, pegs, hooks or cleats used to fix laths, slates etc.

Flerry

breaking slate rock by chiseling a groove across the edge and then striking the groove with the chisle and hammer (qv) (West)

Follower

second course (Pen)

Foxing (st)

In the Collyweston region the method of mining by removing the sand bed from under the log and allowing it to fall.

Fox hole

mine (Col)

Froe, fromard

tool for riving laths. Synonym rending axe

Frosting (st)

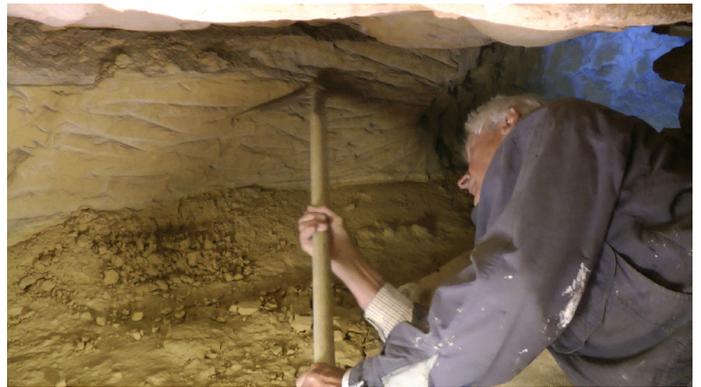
exposing the log (qv) to frost to open the laminations cf pendle and presents (Col).

Full bedding

setting slates in a bed of mortar at the tail and across the full slate's width. Although common in some regions the technique is prone to trapping water within the slating with the risk of leaks.



Fire proof roofing



Foxing



Frosting

Full torching

application of mortar to the underside of the slates between the top and bottom edges of the laths or battens. Synonym single torching. cf half torching

Flaunch, flaunching

A mortar fillet to close an abutment and to direct water away from the junction.

Gallet

small pieces of stone slate or metamorphic slate bedded in lime mortar at the head of a slate to support the slate above. Synonym: shale.

Gaper, gaper course

synonym of pig qv

Gauge, gauging

the spacing of laths or battens up the roof slope. In stone slating, the gauge is always variable. There are several systems

single lap: each course overlaps the one immediately below. The gauge is usually determined by defining a head lap. cf Patent slating, Caithness, Orkney. under seal, over seal,

double lap: each course overlaps the course next but two below. The gauge is usually determined by defining a head lap. Slating in thirds (qv) is a form of double lap where the gauge is determined by dividing the slate length by 3. Diamond pattern (qv) is also double lap.

triple lap: each course overlaps the course next but three below. The gauge is usually determined by dividing the slate length by 3.5. cf scantle slating

Gauging stick,

wooden rod with traditional marks used to measure slate lengths and to gauge the lathing of the roof. The names of the slate sizes associated with each mark are traditional and regional. Synonym: slate rule, wippet qv www.stoneroof.org.uk/sticks.html

Gauging rod

batten or similar, the length of the rafter on which the lath or batten gauges are marked. A pair of rods are placed at either side of the roof and the gauges snapped onto the rafters with a chalk line.

Grain

plane perpendicular to the cleavage in a metamorphic slate. It is not the surface texture which is more dependent on the direction in which the splitting chisle is driven into a block.

For centre nailed, thin, metamorphic slates it is advantageous for the grain to run north-south in the slates so that they are best able to resist wind forces and roof settlement. Also should they be broken each half will be retained by a nail



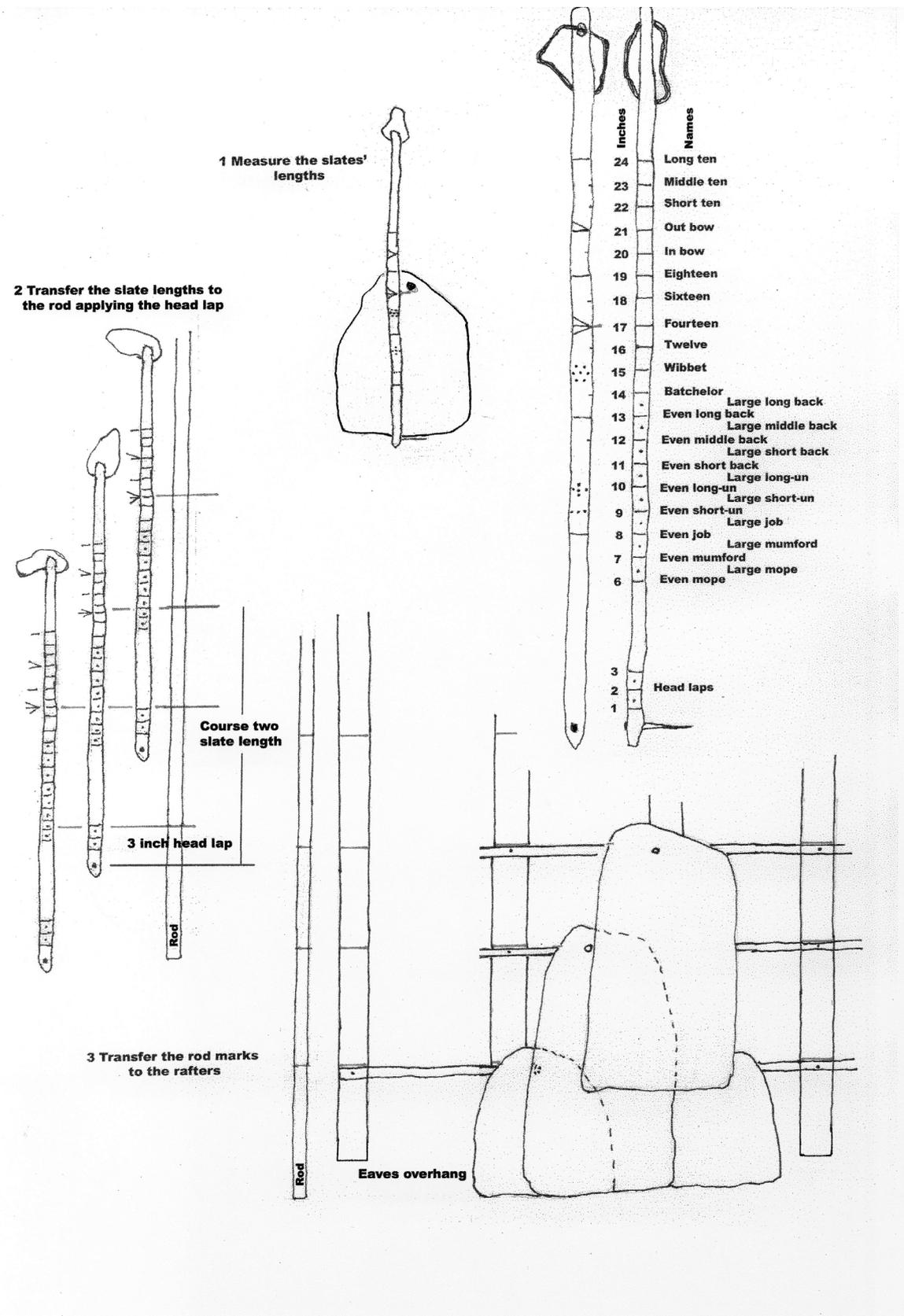
Gallet to support a Collyweston slate



Collyweston gauging stick



Demonstrating marking up a gauging rod



Using a gauging stick

Gauging rules, or sticks, date from a time when units of length were not standardised and slaters would not have used mathematical calculations to set out a roof. They have two purposes. To measure the slates' lengths and to set out (gauge) the courses so that each slate has sufficient headlap over the slates next but one below - course three overlaps course one by X inches; course four over two etc. The amount of headlap varies with the pitch of the roof, less on steeper pitches; the driving rain exposure of the building, less for less exposed roofs; and the position of the slates up the roof slope, less nearer the top. Sometimes, the headlap is greater on the side of the building exposed to the prevailing wind.

The first thing to understand is that the names of the slates are not their lengths in inches (or any other unit) even if the name is a number. They are traditional sizes and the actual sizes vary from region to region. So a 'sixteen' isn't sixteen inches long and may be longer in one part of the country than in another. Also the difference between an eighteen and a sixteen isn't two inches. Rather than indicating specific lengths, they describe the relative position of a particular slate length along the rafter, so the larger number is a larger slate and would be closer to the eaves.

The length of the rule and hence the largest slate which it applies to, depends on the sizes the local delves could make. So a Purbeck rule is longer than most other limestone slates, simply because Purbeck stone-slates come in larger sizes. That said, any region will have extra-large and extra-small slates and these are treated as exceptions or 'out-rules'. Their actual length varies regionally and reflects the characteristic sizes of the region's slates.

All the sizes and half sizes are marked except the out-rules. They are usually in two sets - the full sizes and the half sizes - on adjacent faces of the stick. The full sizes are sometimes shown by witness marks - dots, vees or crosses - to show where you are in the full range of lengths. Different regional names are used for sizes and there are two systems for half sizes. For example in Collyweston and the Cotswolds half sizes are described as long or large versions of the full size. In Purbeck and the Pennines in contrast they are called short or scant versions.

To lay a random slate roof the slates have to be sorted into lengths and the largest placed at the eaves with successively shorter slates laid up to the ridge. There are no rules about how many courses there should be of each length. This is purely the outcome of the mixture of sizes supplied by the delph. (This factor is very important to the local and regional distinctiveness of roofs. Attempts to dictate the gauging for conservation or aesthetic reasons goes against the vernacular style and should always be avoided.)

So the slater's first job, after the slates have been holed, is to 'measure' their lengths with the stick. The effective length of a top fixed slate is the distance from the peg/nail hole to the bottom edge (the tail). So the stick is set against each slate in turn with the pin against the tail of the slate, the name (length) is measured off at the peg hole and the slate placed in the appropriate pile. A set of one length is a parting.

When all the slates are sorted the total width of each length is measured or estimated. This figure is then divided by the width of the roof to determine how many courses can be laid in each length. For a gable to gable roof this is simple. For a hipped roof or one with a more complicated plan, adjustments to the calculation have to be made for each course or few courses. A note is made of how many courses there will be of each length often by making pencil marks on the side of the stick. The slater can now set out the roof for the calculated gauges and number of courses of each length.

The first step is to decide on the amount the tail of the first course of slates overhangs the wall of the building. All the slates courses are set out relative to this.

The slater then makes a mark for the first course on a pair of rods or battens as long as the rafter.

This is repeated for each course but making allowance for the headlap. In some regions several headlaps are marked on the stick - typically 1, 2 and 3 inches with half inches shown as dots - and the appropriate headlap is set against the mark for the next but one slate below.

The rods can now be used to mark the lath or batten position for each course on the rafters. The rods are placed on the roof at each side with the correct eaves overhang and a string line used to strike the marks across the whole roof. Finally the battens or laths are nailed below the line.

For thicker metamorphic slates the grain direction is largely unimportant because they are strong enough in any direction.

Some metamorphic slates and all stone slates do not exhibit grain.

Grey slate (st)

stone slates, usually sandstones (Pen)

Ground work

laths, battens or boards to which the slates are fixed

Gutter stone (st)

stone slate lining to an open valley (Pen)

Half torching

mortar applied to the underside (bed) of the slate at its head from the inside of the roof after the slating is completed. cf torching

Hammer, rag hammer, pin hammer or slater's pick

hammer with a blunt end for nailing and a pointed end for holing.

Head

the top edge of a slate as laid.

Head bedding

setting the head of slates in a bed of mortar across part or the full slate's width.

Head fixing

slates hung on or nailed to laths or battens with wooden pegs or nails positioned close to the slate's head

Head lap

the length by which the tail of a slate overlaps a slate in a course below. Synonym: band, end lap.

in head fixed slating it is the overlap of the peg hole or the top of the lath.

in centre fixed slating it is the overlap of the head of the slate

in single lap course two overlaps course one etc.

in double lap course three overlaps course one etc. Slating in thirds is double lapped.

in triple lap course four overlaps course one etc. Three or four pin scantle slating (qv) is triple lapped.

Heal, healing, helling

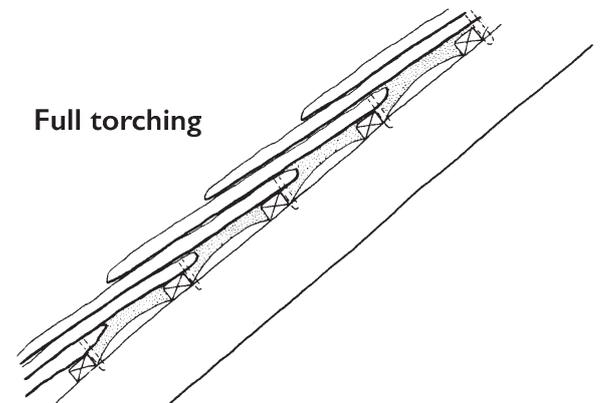
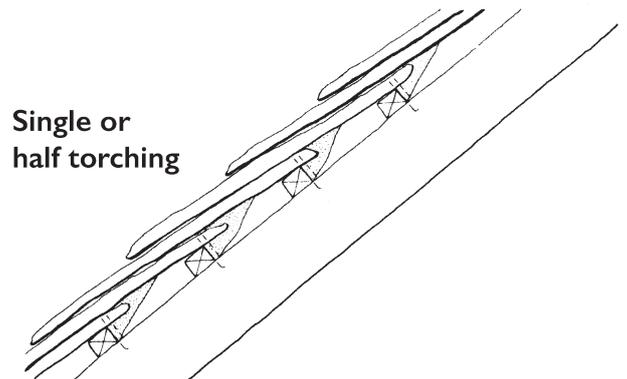
old term for roofing, roofing slates or roofing stones

Heap (st)

Heap - quantity of dressed slates of all sizes on the



Ground work - riven laths



Half torching

ground made up as follows:

- Case = three slates
- Hundred = forty cases = 120 slates
- Heap = seven hundreds = 840 slates plus thirteen large ones. (Col)

Heel, slater's heel

scaffold supported on angled metal frames fixed to the roof slope over the slating. Normally used on sarked roof or where battens or laths are not suitable to safely support the slater or ladder rack.

Hip

intersection of two roof slopes

Holing gauge

The position of the nail hole in double lap slating. It is equal to the gauge (qv) plus the lap plus 8 - 15 mm.

Hook

wire hook for slate fixing. They have a hook which holds the slate's tail and a hook or spike at the top end for hooking over or driving into a batten. Hook fixing is not an appropriate method for conserving historic roofs.

Horse

long wooden block often with two legs into which a break iron is fixed.

Horsham slating (st)

single lap system used in Surrey, Sussex and Kent.
qv www.stoneroof.org.uk/horshamguide.html

Hundred (st)

see heap

Judd wall

retaining wall for quarry waste (Yorks).

Kick

see tilt.

Ladder rack

adjustable brackets to support a scaffold board(s). They are fixed to roof ladders over slating or slater's heel.

Lath, latt

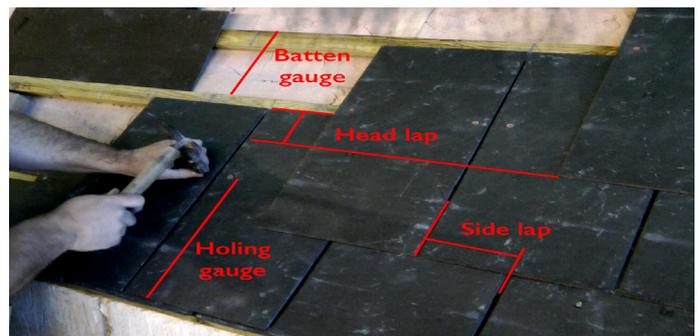
split wooden support for hanging stone slates. Synonym: batten. In slate and stone roofing guides, the word batten is usually reserved for sawn supports.

Lath hatchet, lath hammer

hatchet with a blade for cutting laths to length and a hammer head at the back of the blade for nailing the laths to the rafters.

Lead nail

cast lead strap for fire-proof slating (qv). It passes through the slate and is wrapped around the metal



Holing gauge



Horse on the left



Horsham stone slating

battens

Log (st)

mined stone which is suitable for frost splitting to make slates. (Col)

Listing

tiles, slates or stone pieces set into mortar flaunchings at abutments with walls to reduce cracking in the mortar.

Load (st)

nine foot long row of random stone slates stacked on end equal to three squares (qv). (Purb)

Mansard

roof slope of two pitches, the lower steeper than the upper.

Margin

strictly the area, but more commonly the length, of the exposed part of the slate.

Master-taker

agent of a landowner who employed delvers to extract stone and produce stone slates etc.

Metamorphism (sl)

the process, involving heat, pressure or both, which changes the direction in which sedimentary rocks split. Metamorphic rocks such as true slates split along cleavage planes which are usually unrelated to their original bedding.

True slates are formed by low grade metamorphism - not much heat or pressure is involved. Higher grades of metamorphism produce rocks with larger mineral crystals which can be seen without magnification. Examples include schists (qv), phyllites, quartzite and gneiss. Generally such rocks cannot be split thin enough to use for roofing, but there are some examples.

Mil, mille (sl)

Count of one thousand tally slates (qv) of thousand. Sometimes mistakenly taken to mean a million. In the past it was common for quarries to supply extra slates to allow for breakages during delivery. Hence a mil or a thousand could be up to 1200 slates.

Mossing, mousing

use of moss or other vegetable material to windproof the joints and gaps between slates.

Mossing iron

tool, similar to a touting trowel, used to force moss etc. between slates to prevent drafts.

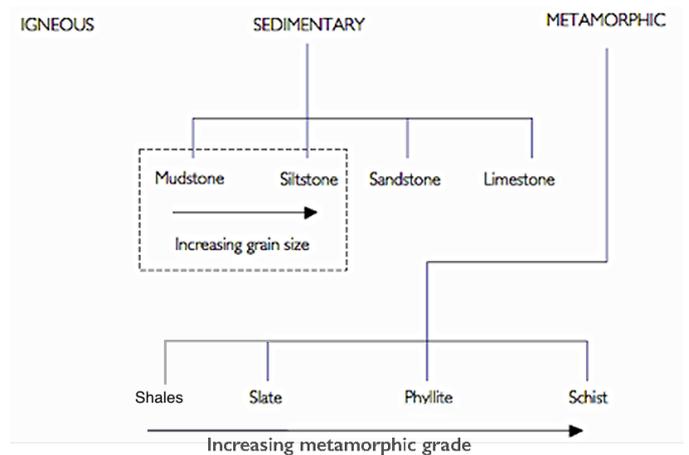
Mounter (sl)

large or rag slate laid at the eaves and usually nailed directly to the rafters as in rag slating (West) of pricker, common slating.

Neck



Listing



Metamorphism



Mounter

anvil or base on which stone slates are supported when being dressed or notted (Yorks) Synonym crapping iron.

Non-carbonate carbon

'free' carbon in metamorphic slates that is, carbon which is not part of the the carbonate minerals

Notting (st)

dressing a stone slate (Yorks).

Open slating

slating with the perpendicular joints open by two or three inches to provide ventilation for animal housing, distilleries and other industrial buildings. Synonym for brat (Wales).

Orkney slating (st)

single lap slating system where the perp joints are over sealed qv cf Caithness, Patent, overseal.

Overburden

in quarrying: useless material which overlies a bed of useful material.

Oversailing

verges which are carried beyond the outer face of a gable wall.

Overseal

in single lap slating, sealing the perp joint with a slate or similar laid on top. Common in Orkney cf underseal, Caithness, Patent.

Ovvies, hovies, offies (sl)

Double course of slates at the eaves (under ovvies) or ridge (top ovvies). (West)

Parting (st)

set of slates of the same length (Col).

Patent slating (sl)

single lap system where slates are fixed to rafters, especially on cast iron frames.

Patent ridge

ridges made from slate. They have two forms: a birdsmoth roll top which is fixed over two wings or a wing and roll mating with an opposite wing. In both cases the parts are nailed or screwed to the structure and the holes sealed with putty or similar.

Peg

wooden or metal peg used to hang slates from laths or battens. Metal pegs are a modern innovation.

Peggy (sl)

small slate, typically, in west country slating and Cumbria, slates ranging from 14 or 12 to 6 inches long.

Pendle (st)

generally a quarrying term for any fissile rock. For



Open slating



Patent slating - a form of oversealing



Wooden peg

stone slates in the Cotswolds region, it is used specifically for rock which is split by frosting - qv presents.

Perp, perpendicular. perp line

guide lines struck up a roof with a chalk line to keep tally slating straight

Phylite (Phylite schist)

fine or medium-grained, foliated metamorphic rock with a lustrous sheen; intermediate between a slate and a schist. Primarily in Europe used for roofing in Nordic and alpine regions, Formerly imported from Nordic countries into Scotland and NE England.

Mica schist - Schist with glittering layers of micas, consisting of these, chlorite, quartz and other minerals.

Biotite schist - Schist with glittering layers of micas, consisting of these, biotite, quartz and other minerals.

Quartzite schist - Schist enriched in quartz and with cleavage along planes in mica. Other terms used are schistose quartzite or schistose flagstone.

Pied (st)

a method of storing logs (qv) during the Summer to prevent drying out (Col).

Fig, pig course

a course with a larger margin than the course(s) below resulting from poor setting out and a failure to maintain adequate head laps. Synonym gaper, qv drop course, chage course

Pien, pienen

roof hip (Scots)

Pin

1 slate fixing peg.

2 division of slate lengths into fixed proportions. The normal division is into sevenths (division by three and half) whereby the head lap is one seventh and there are three margins of two sevenths each in a set of four successive courses. This division can be described as three and a half or four and a half pin. (West)

Pin pointing

Mortar applied to or around slate pegs to hold them in place and to prevent them tilting.

Pin slating

Synonym for scantle slating. (West)

Pillar (sl)

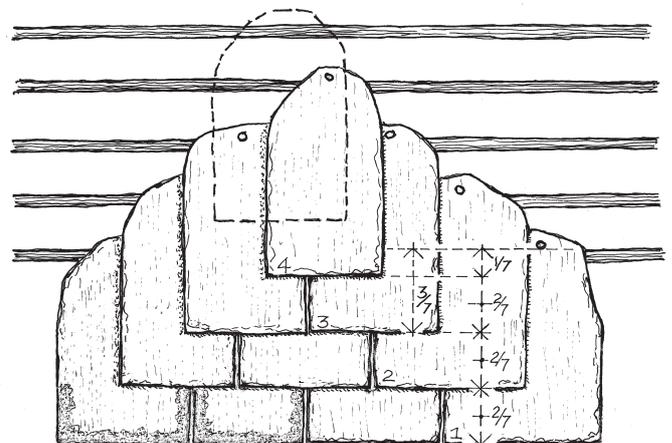
plane in slate perpendicular to the cleavage



Striking a perp line



Pig courses



Pin or scantle slating

Drawing Ray Harrison

Pit

mine or quarry

Pitch

the angle of the rafters to the horizontal. For thicker stone slates the pitch will be significantly less than the rafter pitch because they are resting on each other, but this is taken into account by the traditional rafter pitch and lap relationship for the slate and the locality.

Plerry (sl)

slate quarry synonym for grain qv

Plug and feathers

three-piece tool set used to split slate or stone blocks. The feathers are thickest at the bottom and taper to the top. They are inserted into a hole drilled in the block and the plug which has a matching and opposite taper (thicker at the top) is driven in between them causing the split.

Pointing

use of mortar to fill the vertical joints and to seal the tail gap of stone slating. Pointing may show (undesirable) or be raked or held back. Often associated with bedding.

Pot lids (st)

intermittant rounded mamillated masses of flaggy grey calcareous sandstone in the overhead or upper head bed of Stonefield slate mines. They produced some of the best and largest Stonefield slates of stone slate beds.

Presents (st)

stone slates formed by natural, including peri-glacial, weathering in near surface deposits. They are often thicker than hand-split stone slates produced from deeper layers qv pendle (Cots).

Pricker (sl)

rag slate used at the eaves synonym mounter (West)

Pricking

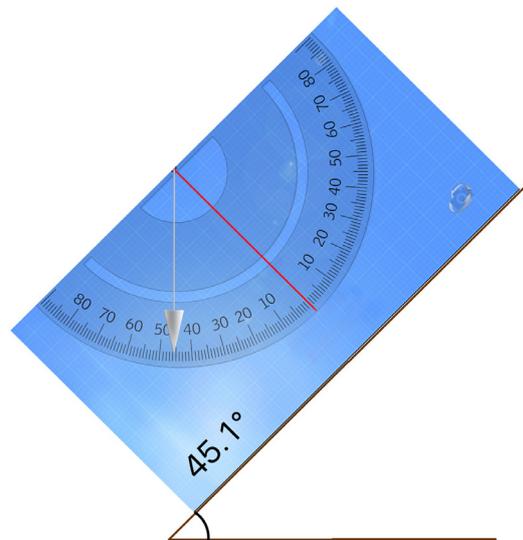
sand or shale bed underlying the productive stone in a mine. It was removed with a pick axe and temporarily shored until enough stone was undermined. The shores were then removed and the stone allowed to fall. (Col, Yorks) cf foxing.

Pricking up

setting out the laths or battens on the roof. (West)

Pyrite, pyrites

generic name for a group of metal sulphides found in slates (especially poorer quality Spanish) often collectively known as oxidising pyrites or oxidising metallic minerals. It is also the specific name for one form of iron sulphide FeS_2 . When they oxidise they form rust marks and runs on the roof and can ultimately result in the slate blistering or breaking.



Roof pitch



Presents



Pyrite oxidation

The most commonly encountered iron sulphides are pyrite, pyrrhotite and marcasite. Not all metallic sulphides oxidise in normal environmental conditions; some forms of pyrite do not (although the crystal's surface may tarnish) whereas other forms and pyrrhotite and marcasite do so very rapidly.

Queens, queen slates (sl)

Large or oversize slates often not within a quarries normal output. Synonym quinton (Irl)

Raggle

groove cut into masonry especially at a roof abutment to receive a cover flashing

Rag slate (sl)

large slates squared on three sides and leaving a ragged top. The name was formerly used nationally but is now mainly restricted to Devon and Cornwall slates.

Rag slating (sl)

rag slates nailed directly to rafters. There is some evidence that historically rag slates were nailed or pegged to boards.

Random, random slate

1 of slate: variable length and width. In west country usage, usually restricted to slates longer than twelve inches.

2 of roofing: slates laid with reducing length up the roof slope and the widths selected and placed so that they provide at least the minimum side lap over the slates in the course below.

Rap

batten or lath. (West)

Rapping

battening, lathing. (West)

Recording

a roof: compiling a photographic and/or written record of the construction of a roof. Typically it will involve measuring the slate lengths, margins, laps, and batten gauges and describing the detailing at valleys, hips, ridges, abutments etc.

Regularly

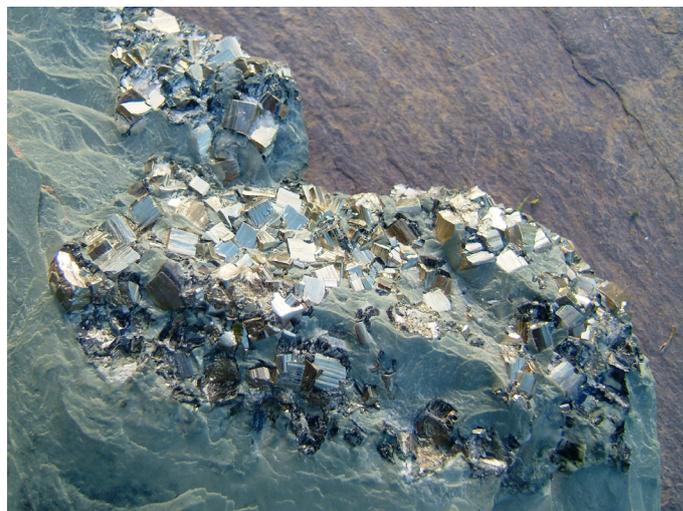
of diminishing or random slating: the system whereby each successive margin is the same height or smaller than those below. It does not mean that there are an equal number of courses of each margin size.

Relict bedding (sl)

banding often seen in metamorphic slates indicating the original sedimentary bedding plane.

Resurgam slating (sl)

proprietary name of Qakley Slate Quarries Co Ltd's system for hook fixing slates to an iron frame promoted in response to the post WWII shortage of



Tarnished surfaces on pyrite crystals.

SLATE SIZES	
Queens	42-27x any
Princesses	24 x 14
Duchesses	24 x 12
Small	22 x 12
Narrow	22 x 11
Countesses	20 x 12
"	" " 10
Ladies	16 x 12
Wide	16 x 10
Broad	16 x 9
Narrow	16 x 8
14 x 10s	14 x 8s
Doubles	13 x 7
Drains	12 x 6

Slate names - queens 42 - 27 inches long by any width



Rag slating

timber.

Rhone

gutter (Scots)

Ridge

Apex of two roof slopes

Ridge file

angled stone or clay segmental curved clay tile used to close a ridge

Riffle

a hole in an area of roof (WC). Typically formed when a slurried or grouted roof fails and a section dislodges.

Rip, ripper

long flat tool for cutting or withdrawing slate nails.

Rive, riving, riven

1 splitting slate into thin layers with a chisel or cleave

2 piece of slate split to thickness but not dressed to size

3 splitting timber into laths traditionally done with a froe or qv.

Rod

a timber the length of the rafter (today usually a batten) marked with the gauging for each course and used to mark out the courses on the rafters.

Roof light

window in the plane of a roof or dormer

Rustic slate

slates with surface iron oxide staining resulting from water infiltration into the geological formation

Sage (Scot)

dressing iron qv

Sarking

originally wooden boards fixed to the rafters to which slates were nailed. Today the term is applied to any material laid under slating to reduce wind effects synonym felt, membrane

Sax, zax

bladed tool with an off set handle used for dressing slates to size and optionally with a spike to make a fixing hole. Synonyms Saixe (Scot), knife.

Scantle, scantle gauge, scantle rod (sl)

lath or batten marked with slate lengths with or without their corresponding lath gauge. Some versions also include three head lap marks.

Scantle slates (sl)

small slates typically ranging in length from 14 or 12 to 6 inch long.



Riffle



Rustic slate



Sax

Scantle slating (sl)

Systems of wet or dry laid slates set out (gauged) and laid in diminishing courses so that each slate laps the head of the slate in the third course below. Also known as three and a half and four and a half pin qv pin.

Schist

A foliated rock composed of nearly parallel arranged mica, chlorite, quartz and other typical minerals. Cf quartzite schist in phyllite entry

Scrip (sl)

slates fixed to exposed verge rafters and purlin ends (West)

Secret gutter or valley

sheet metal, usually lead, gutter or valley hidden by carrying the slating over it. Most commonly used at abutments especially where the use of soakers and flashings is prevented by a coping etc. They need to be cleaned regularly to prevent blocking and leaks.

Sedimentary (st)

rocks which have been formed from other rocks which have been broken down by weathering, or rocks formed by biological or chemical actions. If they can be split to make roofing (fissile) it will be along bedding planes - qv metamorphism.

Shadow

1 a thin piece of (usually metamorphic) slate used in the Horsham district single lap system. Originally the shadow was a thin piece of Horsham stone but today is normally metamorphic slate. It is always used in conjunction with mortar bedding and pointing.

2 a thin piece of slate or stone used to block the entry of wind-driven rain or snow where the shouldering does not provide sufficient cover with adjacent slates qv shale.

Shale

small pieces of stone slate or metamorphic slate bedded in lime mortar at the head of a slate to support the slate above. Where they are used with heavily shouldered stone slates (most commonly limestones) they have the effect of preventing wind driven rain passing through the slating. Synonyms: gallet, shadow.

Shillet

SW England building shale able to receive a nail fixing for cladding slates (West)

Shiver

Synonym of shadow (2) qv.

Shoulder, shouldering

1 the absence or deliberate removal of the top (as laid) corners of stone slates. The technique



Secret gutter



Shale

increases the amount of stone which can be used for roofing, makes it easier for uneven or twisted slates to lie flat and reduces the roof loading.

2 the top corners of stone slates. Excessive shouldering can result in a leaking roof.

Single lap

system where each course overlaps the course immediately below cf Horsham and Patent slating

Sizeable slates (sl)

random size slates (Scot)

Sized slates (sl)

single size slates cf tally slate (West, NW England, Scot).

Skew

Tilting the stone slates at an abutment or verge to direct water onto the main area of the roof. Synonym tilt. Cf listing (Cots).

Skirt (obs)

Slate tail

Side lap

the amount by which a stone slate laterally overlaps the stone slate in the course below. For a given slate width a centre nailed slate has a smaller side lap than a head or shoulder fixing - usually about two inches less. qv headlap

Single lap

slating or tiling system where each slate overlaps the slate immediately below. It is uncommon in slating but is the normal system for interlocking tiles. See Horsham slating

Skew

Sloping tabling, sometimes coped, finishing a gable which is upstanding from the plane of the roof (Scot).

Slate

fine-grained rock formed by the metamorphosis of clay, shale, etc, that tends to split along parallel cleavage planes, usually at an angle to the planes of stratification.

Slate drill

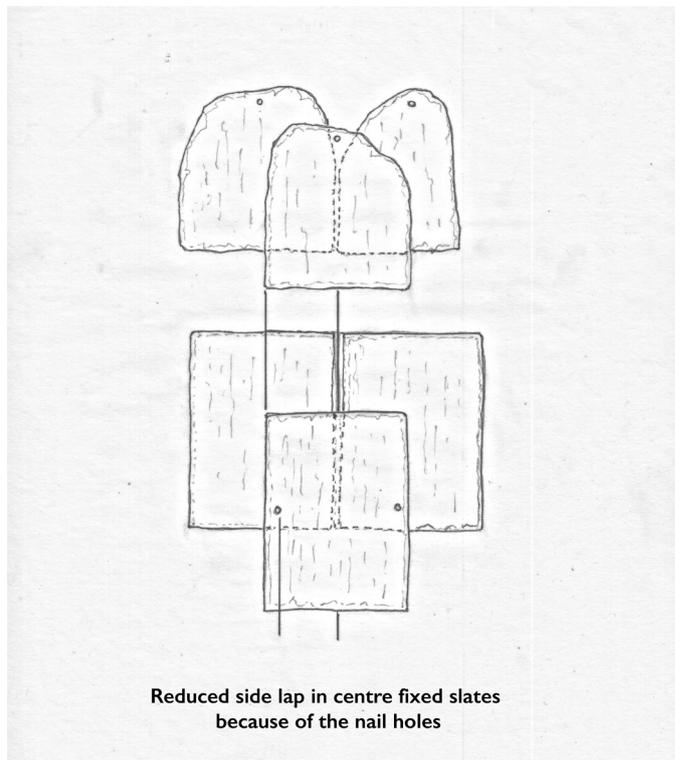
hand tool to form a hole and countersink for slate nails. Holes should not be made with an electric drill which doesn't produce a countersink to take the nail head.

Slate hanging

see cladding

Slate and a half (sl)

slate one and a half times as wide as the corresponding tally slate. Used to close the half bond



Side lap



Slate drills

Slate length

1 in top fixed slating, the dimension from the fixing hole to the tail of the slate.

2 in centre nailing, the full length of the slate from its head to its tail

cf stone slate names

Slate thickness

for marketing, metamorphic slates were usually selected into a range of named thicknesses such as 1, 2 or 3; and bests or firsts, seconds and thirds. Later Penryn quarry adopted standard, heavy and extra heavy and recently Capitals, Counties and Celts.

Such terms do not imply that the durability of the slates varies. A best slate is so called because a given thickness of block produces more ie thinner, slates than a heavy which is better for the quarry.

Because the thinness is dependent on the cleavage quality the thicker types might also have a rougher surface, some curvature or twist or more variable thickness. They might also contain bands resulting from grain size variation in the original sediment.

EN12326-1 (qv) includes requirements for thickness in relation to the inherent strength of the slate rock - it's modulus of rupture - and the climate of the country of use. There is also a classification for flatness.

Slater's dog

west country synonym for break iron.

Slater's heel

scaffold supported on an adjustable bracket fixed to the roof slope

Slate length

1 in top fixed slating, the dimension from the fixing hole to the tail of the slate;

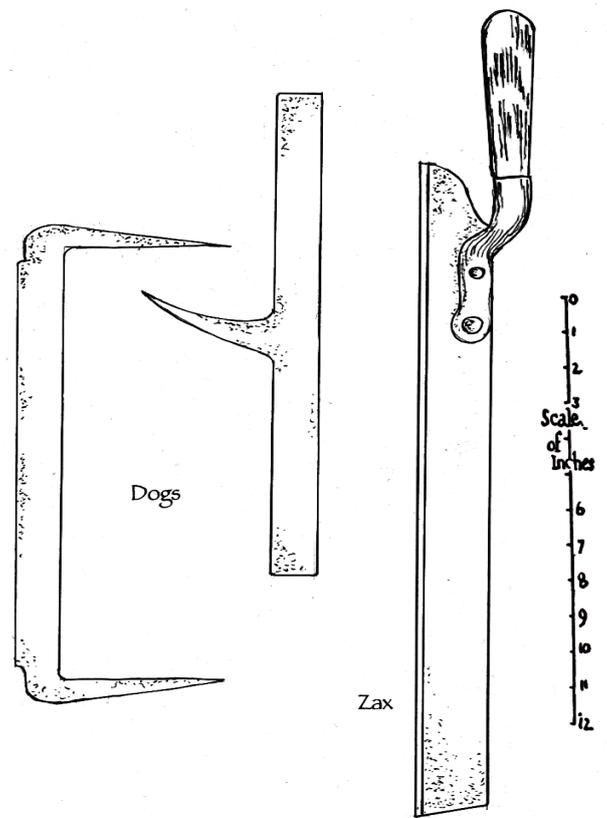
2 in centre nailing, the full length of the slate from its head to its tail.

Slater's pick

hammer with a pick for making peg / nail holes in a slate

Slate rule

see gauging stick



Slater's dogs and sax



Slater's pick or hammer, rip and trowel

Slate sizes

1 historically metamorphic slates were known by aristocratic names using a system invented at Penrhyn quarry in the nineteenth century.

Name	Size
Empress	26 x 16
Princess	24 x 14
Duchess	24 x 12
Small Duchess	22 x 12
Marchioness	22 x 11
Countess	20 x 10
Wide Viscountess	18 x 10
Viscountess	18 x 10
Wide Lady	16 x 10
Broad Lady	16 x 9
Lady	16 x 8
Wide Header	14 x 12
Header	14 x 10
Small Lady	14 x 8
Narrow Lady	14 x 7
Small Header	13 x 10

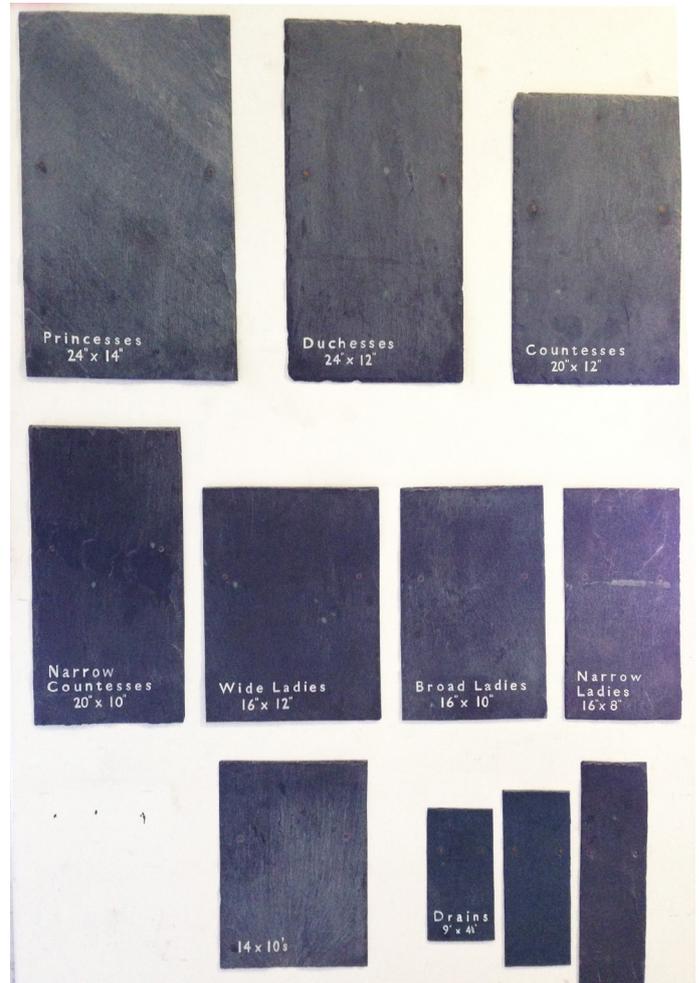
2 in the west country slates are usually sorted into lengths and given a number which represented their position on the rafter. There would be more than one course of each length.

Slate length inches	Slate number
6	1
7	2
8	3
9	4
10	5
11	6
12	7
13	8

3 Until the recent past slates were always supplied in inch sizes and some quarries made slates oversize. Penrhyn quarry for example always made slates a quarter inch longer and wider than the stated dimensions. The ill advised change to metric sizes has created problems for roof repair and conservation because the metric dimensions adopted were not exact equivalents of either the stated or the actual size. So a 500 x 300 slate from Penrhyn quarry is actually 14 mm shorter and 11 mm narrower than a 20 x 12 inch slate. Consequently replacement slates will not fit the existing batten gauge nor the perp lines without excessive gaps.

Spot bedding

the use of small spots of mortar to prevent uneven



Slate sizes in Dinorwic quarry

stone slates rocking. The minimum of mortar should be used and should not lift the slates.

Springing

see eaves tilt (Cots).

Sprocket

1 of a roof: the reduced pitch at the eaves to throw water away from the wall where there is no gutter.

2 of the roof structure: the additional piece of timber fixed to the main rafter especially where it is footed onto the inner face of the wall, to carry the roof covering over the outer face and providing the eaves tilt - qv tilt.

Square, roofing square

one hundred square feet of roof or slating. Historically, the basis for coverage and supply of slates.

Stone slate

there are different preferences for terms to describe sandstone, limestone and similar non-metamorphic roofing products. The most frequently encountered traditional and colloquial terms are stone slates or grey slates but they are also called flags, flagstones, thackstones, stone tiles, sclaites or grey sclaites (in Scotland), slats or slatts. Each of these terms

is used to distinguish them from metamorphic or 'blue' slates. The objection to the term stone slate is that sandstones and limestones are not, petrographically, slates. That is, they have not been through a metamorphic process and consequently they split along bedding rather than cleavage planes. This is certainly true and some geologists prefer the retronym tilestone to distinguish them from real slates. However the term slate meaning any flat rectangular roofing product has historical precedence, since it predates the science of geology by hundreds of years and is the term in common use. In this document stone slate is used

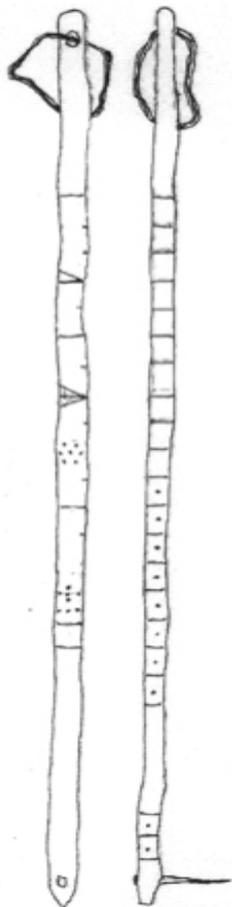
Striking hammer

hammer with a blade on one side for cutting or dressing stone slates (Yorks).

Stone slate names

each stone roofing region had its own system for naming slate lengths and within a region the names varied. Probably originally intended to keep the slating method secret from outsiders, the mix of sizes reflected what the local stone was able to produce. Where a size name is a number it indicates its relative position up the rafter rather than a length in inches. Most systems also included intermediate sizes such as 'half above' for each size in the Pennine system. The table shows some of the regional names

	PENNINE	PURBECK	COTSWOLD	COLLYWESTON
Ridge			Short prick	Even mope
			Long prick	Large mope
			Short cutting	Even mumfat
			Long cutting	Large mumfat
	Farewell		Movide	Even job
	Scant Skitchen	Short one	Short beck	Large job
	Skitchen	Short two	Middle beck	Even shrt 'un
	Scant Beck	Short three	Long beck	Large short'un
	Beck	Short four	Short batchelor	Even long 'un
	Scant Batchelor	Short five	Long batchelor	Large long 'un
	Batchelor	Short	Short nine	Even short back
	Scant Wibbit	One	Long nine	Large short back
	Wibbit	Two	Short wivutt	Even middle back
	Scant Twelve	Three	Long wivutt	Large middle
	Twelve	Four	Short eleven	Even long back
	Scant Fourteen	Five	Long eleven	Large long back
	Fourteen	Six	Short twelve	Even bachelor
	Scant Sixteen	Seven	Long twelve	Large wibbet
	Sixteen	Eight	Short thirteen	Twelve
	Scant One	Nine	Long thirteen	Fourteen
	One	Ten	Short fourteen	Sixteen
	Scant Two	Eleven	Long fourteen	Eighteen
	Two	Twelve	Short fifteen	Inbow
	Scant Three	Thirteen	Long fifteen	Outbow
	Three	Fourteen	Short sixteen	Short ten
	Scant Four	Fifteen	Long sixteen	Middle ten
Eaves	Four	Sixteen	Cussome	Long ten



with the ridge at the top of the columns.

Tail

the bottom edge of a slate as laid qv skirt.

Tally slates (sl)

single size slates sold by count of random slates, sized slates

Tee nail

tee shaped nail used for check / cheek nailing in Scottish practice slating. The head of the tee holds the two horizontally adjacent slates.

Tenting

phenomenon associated with some vapour permeable membranes (qv) when condensation on the upper side is drawn through if the underside is touched.

Thack, thacking

old term for roofing of thatching

Thackstones

stone slates (Pen)

Three and a half pin (sl)

West country method for setting out scantle slating in triple lap.

Thirds

setting out slates on the roof so that the head lap and hence margin is one third of the slate length of double lap.

Thousand, slater's thousand

count of slates but it varied in different traditions. In Collyweston it is 840 slates (qv heap). In the Welsh quarries it was roughly 1200 slates. The abbreviation for 1000 was m for mille. This is sometimes mistakenly thought to stand for a million substantially over-estimating quarry production.

Tiering

see torching.

Tifting (Scot)

see tilt

Tilestone (st)

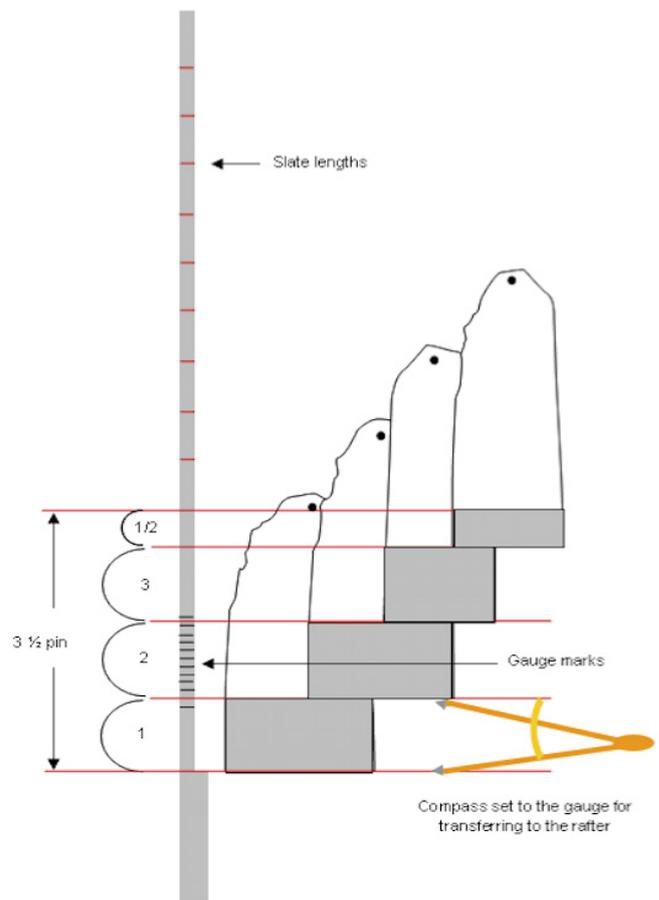
term used by some geologists for stone slates. In stone slating it is capitalised and its use reserved for the stone slates from the Silurian age beds running from Long Quarry at Llandeilo, across South Wales, Hereford and into the Downton Castle Formation in Shropshire.

Tilt

1 at the eaves course and at back abutments - the lift provided to ensure that successive courses lie correctly without gaps at the tail. On the main areas of the roof slope, the tail of each stone slate rests on two thicknesses of stone slate in the courses



Packing tally slates



Three and a half pin

below. At the eaves, the first full course rests on only one thickness - the eaves slate. Essentially, the tilt replaces the missing thickness. but a little more is needed to allow a slate to bridge between the lath at its head and the underlying slate at its tail. The required amount of tilt can be provided by a tilting fillet, by building up the wall head underneath the eaves course or by setting the rafter back from the outside edge of the wall. Facia boards can also be used to provide tilt but historically they were not used on stone roofs. Synonym springing.

2 at verges and side abutments – the lift provided by raising a rafter relevant to the roof slope or by use of a batten or tilting fillet to tilt the slating into the roof thus directing water onto the slope and away from vulnerable abutments. Synonym tiffing (Scot).

3 at lead valleys – use of a wooden fillet to support the edge of the valley slates and to fill the gap between the lead and the slates thus preventing water driving into the slating. The lead must be laid over the tilt.

Tilting fillet

length of wood used to provide tilt. In modern construction an eaves vent often provides the tilt.

Tingle

metal strap fixed to the slating batten or lath and hooking under the tail of the slate as a temporary repair. Typically lead or better, copper. Many stone-slates are too heavy for this to be a successful repair.

Ton, ton slates (sl)

random slates sold by weight, usually the larger sizes cf tally slates, qv queen slates

Torching

lime and hair mortar applied to the underside of stone slates to render them wind proof and to secure the fixing peg. Synonym: tiering.

half torching: application of mortar between the top edge of the lath or batten and the underside of the slates. Synonym: single torching.

double torching: mortar applied to the top and bottom of the laths

full torching: application of mortar to the underside of the slates between the top and bottom edges of the laths or battens.

Tiering

synonym for torching qv

Triple eaves

eaves formed with two under eaves courses. Where there is no wall plate (qv) the two under eaves will level and or straighten the wall head and provide tilt (qv).



Tingle



Torching

Triple lap

metamorphic slating technique where each course overlaps the next but two below. Valleys formed with stones or slates eg swept or stone or slate linings eg chevron are often triple lapped qv head lap, cf scantle slating.

Twist (West)

gauge reduction at change courses qv drop course, change course

Undercloak

slate (or other material) laid under the verge slating to form a neat finish.

Under course, under eaves slate

the first, short course of stone-slates laid at the eaves - qv eaves.

Underlay

flexible sheet material laid under slating, primarily to prevent wind blowing through it. Cf felt, vapour permeable underlay.

Under nailed

Fialure to drive home a slate nail. Eventually the nail head will wear through the overlieing slate or cause it to break

Under seal

in single lap slating, sealing the perp joint with a slate or similar laid underneath cf over seal, Patent, Orkney.

Unweathered (st)

of stone roofing: rock which is too deep to have been subjected to weathering and consequently has to be split by mechanical action or frosting after extraction.

Valley

the pitched or horizontal intersection of two roof slopes forming an internal angle. A variety of traditional methods are used to weather pitched intersections including, Welsh, single cut, chevron, laced and swept.

Vapour permeable membrane / underlay

underlay capable of allowing vapour but not water to pace through it. Synonym breather membrane / underlay

Verge

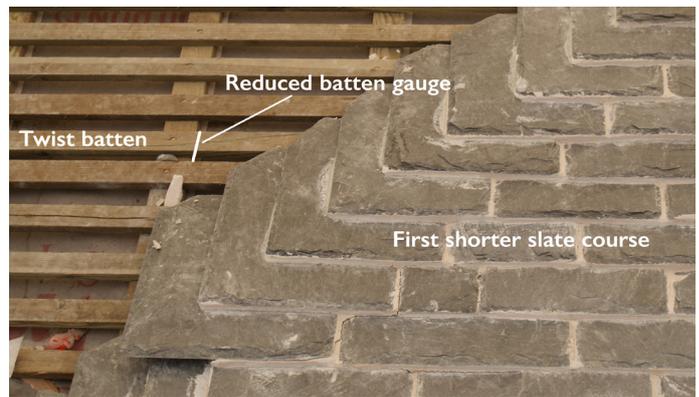
The edge of a roof at a gable

Wall plate

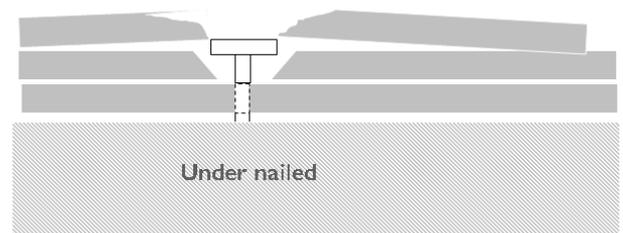
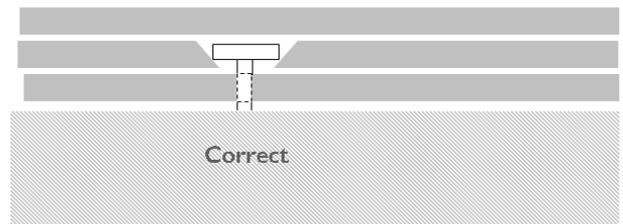
timber laid along the wall head to foot the rafters. On roof masonry it serves to level the eaves and if set well forward from the wall provides tilt (qv).

Weathering

1 the process by which rocks are broken down and decomposed by the action of external agencies



Twist



Under nailed



Under seal Caithness



Chevron valley Derbyshire



Collar and tie valley Devon



Swept valley Cotswold



Laced vally Collyweston



Single cut valley Wales



Welsh valley



Slate lined mitred valley

such as wind, rain, temperature changes, plants and bacteria. In the development of weathered stone slates, it is often very thin clay or mica beds which are weathered out.

2 the use of lead etc or shales, shadows or shivers to block the entry of wind-driven rain where the shouldering of stone-slates does not provide sufficient cover with adjacent slates

3 the use of lead etc to prevent water leaks at roof junctions

Weather stones

Slates fixed vertically on the cheeks of a dormer or raised section of a roof (Pen).

Wippett, wibbit, whippet, wivett (st)

a stone slate size

Whibbet stick

see gauging stick (Pen)

Widebutt

a wide slate used with a backer.

Windspur

verge, overhang of verge slates (West)

Wooder

mine supervisor responsible for timber shoring (Yorks).

Worm

lead welt (West)

Wrestlers, wrestler ridge

notched and interlocking slates used to close a ridge.

Zax

see sax



Wrestler ridge



Wrestler ridge Pembrokeshire



Over sealed roof Donegal.
Similar to Nordic system rasteheller med overliggende dekkheller

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