# GOOD SITE PRACTICE NORTHSTONE TILES

## Installation Guidance

The following provides general guidance only. Designers and installers must ensure tiles are installed in accordance with BS 5534:2014+A2:2018 Code of Practice for Slating and Tiling and that local site conditions and current good practice are considered. All on-site workmanship must comply with BS 8000-6:2023 Workmanship on Building Sites.

## Storage

Large-format single-lap tiles are normally supplied shrink-wrapped on wooden pallets. Store pallets on firm, level ground to avoid distortion or damage.

## Ventilation and Dry Fix Systems

Obtain specific installation guidance from Northstone. Ventilation must comply with BS 5250:2021. Dry fix systems must be installed to resist the maximum design wind load for the site and comply with BS8612:2018.

## Underlay

This section applies where underlay and battens are fixed directly to rafters. For other constructions, consult the underlay manufacturers.

### Minimum requirements

Underlay must meet the wind uplift resistance classification in BS 55342014+A2:2018. Where nailing is required, use extra large-head felt nails, 3.35 mm shank × 20 mm long.

### Laying

Start at and run parallel to the eaves, keeping the underlay taut. Allow a maximum 15 mm drape between rafters to permit drainage into the gutter. Install underlay support trays at the eaves with 150 mm end laps positioned over a joist for nailing; lap the underlay 150 mm over the trays.

### Laps and sealing

Head-laps (unsealed): minimum 150 mm for unsupported underlay at pitches ≥ 15°; 100 mm when supported. Increase head-lap if needed to align with a batten.

Side-laps: minimum 100 mm, aligned with a rafter. At other roof junctions (e.g., hips, common rafters), one side's underlay must overlap the other by ≥150 mm beyond the junction line.

Proprietary tapes/adhesives may be used to seal laps; follow manufacturer instructions. Typical minimum sealed lap is 100 mm.

### Specific details

Bedded verge: underlay should finish over the outer skin of brickwork or the outer rafter for overhanging verges.

Dry verge systems: underlay overhang as specified by manufacturer.

Duo-pitch ridge: underlay from one side should overlap the other by ≥150 mm; for dry-fix ventilated ridges, terminate underlay below the apex as manufacturer specifies.

Monopitch ridge: underlay should extend ≥100 mm over the top fascia or masonry.

Hip: overlap at the hip line by ≥150 mm.

Valley: overlap at the centre line by ≥300 mm, or install a continuous valley strip ≥600 mm wide with the main underlay mitred and overlapping the valley strip by ≥300 mm. Do not lay metal valley linings directly onto underlay; the underlay must lap onto the lining.

Side and top abutments: turn up underlay 50 mm; where a top-abutment ventilator is used, terminate underlay approximately 85 mm from the top of the rafter or as the ventilator manufacturer specifies.

Back abutments: underlay must overlap the abutment material by ≥150 mm, or 100 mm where rafter pitch is ≥35°. Avoid water traps.

Penetrations: cut a neat cross, turn the underlay up for a tight, water-shedding fit, and fit an additional piece of underlay or a proprietary protector above the penetration to divert water.

## Battens

### Batten Type and Marking

Timber species and grading must comply with BS 5534:2014+A2:2018 consult the timber supplier.

Batten sizes:

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|---|---|
| Single-lap tiles: | rafters up to 450 mm centres 50 × 25 mm |
| | rafters up to 600 mm centres 50 × 25 mm |

Each batten must be clearly and indelibly marked to show supplier name; timber species/origin; BS 5534:2014+A2:2018 grade; size; preservative type (if applicable). A quality-assurance mark from the assessing body is recommended.

### Installation

Fix battens to each rafter using galvanised or sherardized smooth round nails. Annular ring-shank or helical nails are acceptable. Minimum nail size 65 × 3.35 mm; determine uplift resistance per BS 5534:2014+A2:2018

Minimum batten length 1200 mm.

Jointing limits:

Batten gauge > 200 mm: max 1 joint in 4 consecutive battens on the same rafter
Batten gauge < 200 mm: max 3 joints in 12 consecutive battens

Joints must be square, centred over rafters and splay-nailed; ensure full support at hips and valleys.

Eaves batten: set so the first course of tiles overhangs the gutter by 45–55 mm, or into the centre of the gutter, whichever is the lesser.

Ridge batten: set so ridge tiles overlap the top course by ≥75 mm.

For variable-lap tiles, calculate gauge by dividing the distance between first and last battens by the maximum tile gauge, round up to the nearest whole number to get the number of courses, then divide the distance by that number to obtain the actual gauge.

For fixed-gauge tiles, check tile batch shunt; if full courses cannot be achieved within available shunt, allow for a short course of cut tiles at the top or bottom.

Where two slopes of unequal pitch meet at a hip or valley, set battens on both slopes to the lesser pitch.

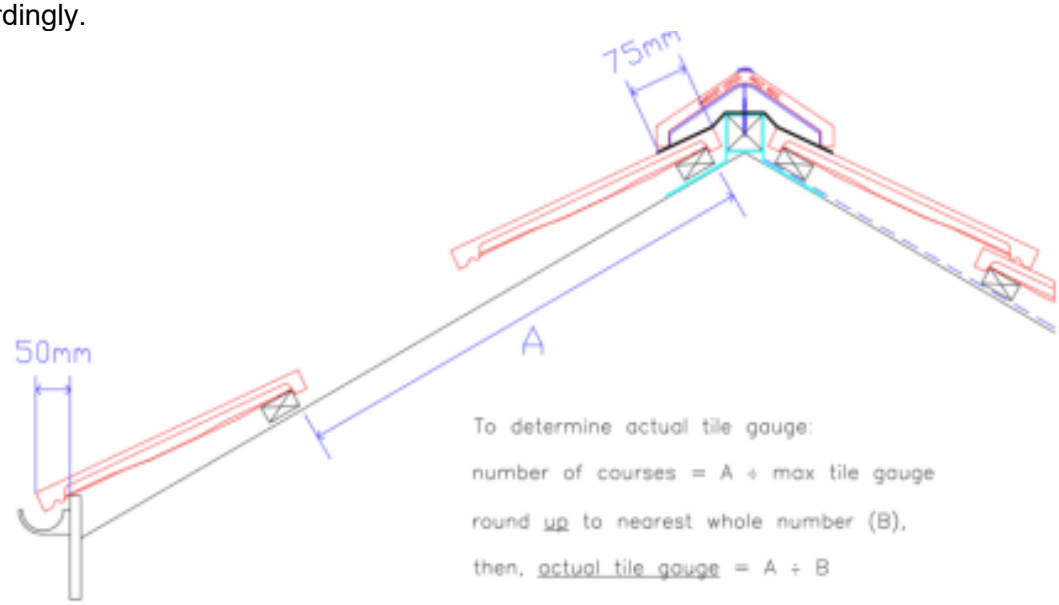
## Setting Out and Tile Fixing

### Setting Out Up the Roof

Set the eaves batten so eaves course tails overhang the fascia by 40–45 mm (just short of the gutter centre).

Set the ridge batten so ridge tiles overlap the top course by ≥75 mm.

Measure the distance (A) from the eaves course batten to the top course batten. Divide A by the maximum tile gauge and round up to the nearest whole number (B) to obtain the number of courses. Divide A by B to determine the actual batten gauge and fix remaining battens accordingly.




Optionally, most of the roof may be set at maximum gauge and the last few courses reduced to avoid a cut course at the ridge, provided the result is acceptable visually.

### Setting Out Across the Roof

Lay a trial course along the eaves at average linear coverage and adjust shunt if necessary to achieve a 38–50 mm verge overhang, ensuring symmetry left to right. Mark every third tile position along the eaves and top battens. Alternatively, use a gauge rod: mark three tiles with sidelocks fully closed and three fully open; mark the midpoint between these positions to set average coverage and transfer that mark along the eaves and top battens. Strike chalk lines from eaves to ridge at each mark to keep courses perpendicular and straight.

## Tile Fixing General

Load tiles uniformly across the roof and mix tiles from different pallets to avoid shading variations.

Lay tiles from the right to the left of each roof plane.

Use Northstone supplied fittings and follow the Northstone fixing specification.

Ensure every third tile aligns with the chalk line.

Mechanically fix all tiles as specified by Northstone.

All general and local areas of a roof should have a minimum of one mechanical fix. The perimeter roof cladding elements should be mechanically fixed using a minimum of two fixings one of which can be a tile clip, adhesive or dry verge capping system where appropriate. This recommendation is a minimum and subject to meeting the wind loading recommendations as per BS5534:2014+A2:2018.

To avoid the use of small pieces of cut tiles, which are difficult to fix, double tiles, tile-and-a-half or half tiles should be used where available from Northstone. Small pieces (less than half tile width) of cut single lap tiles should be bonded or mechanically fixed to the adjoining full-width tile.