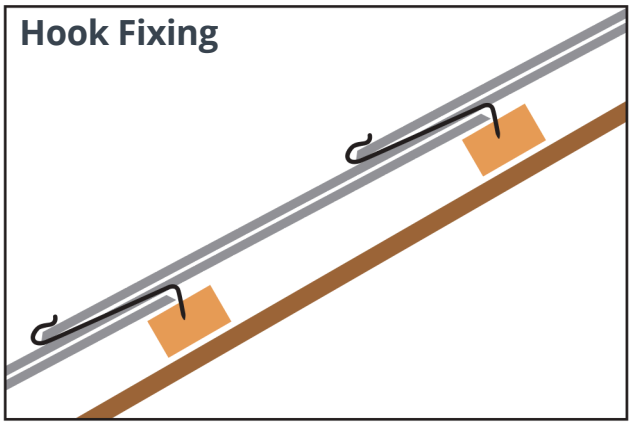
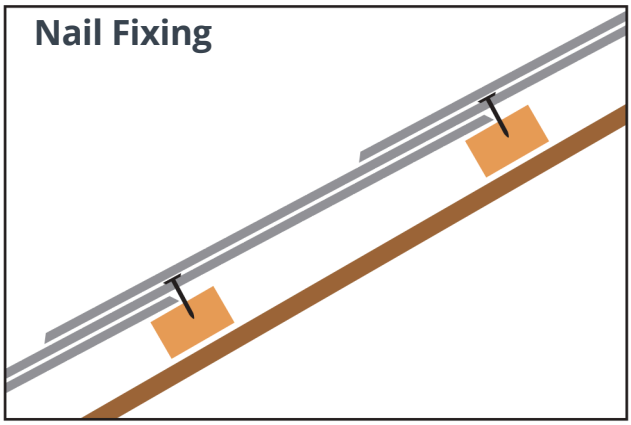
Hook Fixing Slates

We recommend the use of Hook fixing for our Brazilian Grey-Green and our Brazilian Graphite-Grey to minimise breakages.

When considering your choice of slate, you should also consider the most suitable method of fixing. Slate hooks offer a viable, perhaps even preferable choice over traditional nails in many situations.





Both fixing methods have their advantages and disadvantanges, as shown in the table below.

HOOK		NAIL
Yes	Reduces stress on thin or brittle slate varieties	No
High	Level of resistance to wind lift	Moderate
Yes*	Suitable for low pitch roofs	Yes
Yes	Long-lasting	Yes
No	Slates require holing on-site	Yes = labour costs
Yes	Retains slates that break along width	No
Yes	Broken slates are easy to replace	No
Partially	Visible on finished roof	No

*Crimped hooks (which reduce the capillary rise of water at the perpendicular joints between slates) can be used to a minimum pitch of 25 degrees, straight hooks can be used to a minimum pitch of 30 degrees. Always ensure you install to BS 5534 standards and guidance, and seek professional advice upon the suitability for your specific installation requirements.

We highlight the use of the (spike) hook fixing method to avoid breakage and slippage in areas of severe and very severe exposure thus ensuring the long term security of fixing . This method allows for movement without the same pressure points when the material is nail fixed therefore avoiding breakage and the need for ongoing maintenance especially in these areas of extreme exposure and the security of fixing is paramount.

Aesthetically the hook is only visible when newly fixed but blends in as the roof weathers naturally over the life of the building. It is a recognised fixing by the NHBC, BS5534:2014 and also the NFRC.

Hook fixing does not detract from the natural beauty of the slate roof covering and the security of the roof fixing should be assessed due to the extremes of exposure of the development.

To provide a satisfactory roof covering slate hooks must perform four functions.

- Be durable.
- Hold the slates securely without damaging them.
- Resist wind forces acting on the slate.
- Not impair the resistance of the slating to water penetration.

Lifestiles therefore recommend the (spike) hook fixing method on projects that involve the use of Brazilian Roofing Slate. There are also a number of contributory factors to our recommendation that involves ease of maintenance, security and weather conditions. Hook fixing offers greater resistance to wind lift as the hook secures the tail of the slate and locks them together more securely. As a result, this method is more commonly used in those parts of the UK where the site's exposure level is considered severe or very severe, especially areas of Devon and Cornwall.

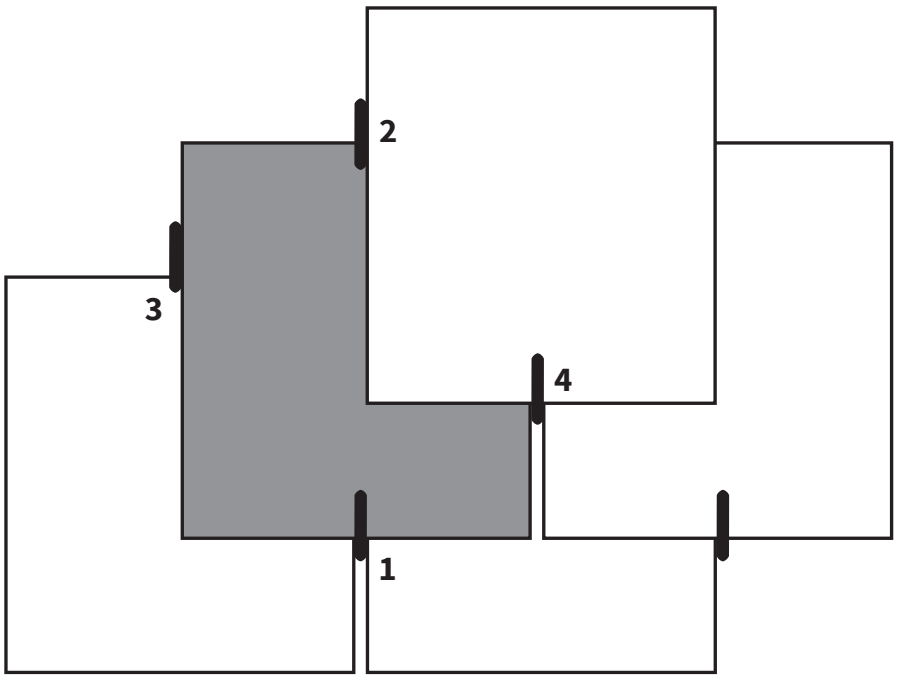
It is also accepted by the NHBC and is within the British Standard BS5534-2014 code of practice for slating.

Hooks should have a life in use as long as that of the slate. To achieve this they must be made from a material which is inherently durable and which will not be worn away by friction against the slate. They are made in a number of materials but only austenitic stainless steel can satisfy both these criteria. Galvanised steel is not suitable because the protective zinc coating will be worn away by contact with the slate leading to rusting and early failure. Copper is also likely to be worn away and become weakened and eventually break.

Stainless steel is the preferred material but not all types are equally durable and BS5534 recommends only those conforming to grades AISI 316-S11 or 316-S19 to BS1554:1990 should be used. Hooks in AISI 304 stainless steel are manufactured but are not as durable as the 316 grades and should not be used. It should be noted that the British Standard for stainless steel BS1554, which included the 316 stainless, was replaced in June 2005 by EN10088-3:2005 and the grade designations have changed. EN10088-3 Grade 1.4404 is similar to AISI 316-S11 and 1.4401 is similar to 316-S19. Manufacturers and suppliers are using both terminologies.

Hooks hold the slates in position in three ways. The illustration below shows how a hook holds down the tail of one slate (1); the head of the slate above (2) and prevents lateral movement of the slates on either side (3 & 4).

At the ends of courses, at verges and abutments, it is not possible to fix a hook at the free side so, to prevent lateral movement here, slates should be nailed or hooked and nailed. Under eaves slates also have to be nailed.



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