Update: Slates & tiles

Slating & Tiling TIPS 24

Fibre cement slates: verge and side abutment fixing

When it comes to slating a roof, fibre cement slates are considered easier to lay than natural slates. But when we look at the perimeter of the roof we find that greater care is needed to ensure the nail and tail rivet fixings are maintained at a verge or side abutment.

Bond

At a verge, it is recommended that alternate courses of standard slates and 1.5 wide slates are used to maintain the half bond needed with double lap slates. Whilst in some instances alternate courses of half slates and standard slates may be acceptable, the problem of maintaining the nail and rivet fixing is the same.

Battens

Often slate battens will finish some 100mm short of the slate verge edge. In some instances a vertical verge batten is located 50mm back from the verge edge to allow a nail fixing closer to the edge. But in both cases an additional nail hole will need to be drilled/punched to allow for a second nail fixing in a standard slate and three nail holes for a 1.5 wide slate. A half width slate would not have enough width to allow for two nail fixings 50mm apart on the batten line. If the verge detail includes a dry verge detail, such that the batten finishes at the verge edge and is covered with a plastics or metal trim, then it may be possible to get two centre nail fixings in a half width slate.

Rivets

The copper tail rivet located in the tail of a standard slate is normally located in the joint between the two lower slates. But at the verge with standard

~ **The use of a half slate at a verge is normally very unstable as it is difficult to get two good centre nail fixings. In this instance, mastic used to hold the slate down failed within 12 months and the copper disc rivet was only fixed to the half slate and not to the slate below.**

and 1.5 wide slates in alternate courses the tail rivet hole in a standard slate does not have a joint below it. Neither does the second rivet in a 1.5 wide slate. The same applies with a half slate above standard slate. At a side abutment it is tempting to rivet the upper slate to the lead soaker. This is not advisable as it will not provide the transfer of wind load to the lower slate and battens required in hurricane force winds.

This lack of a joint up through which the tail rivet can be located needs to be achieved by drilling or punching a hole through the lower, wider slate at the exact location below the tail rivet hole of the upper slate. This needs to be done well before the lower slate is fixed into position as the tail rivet has to be located in the lower slate before it is fixed, as it is impossible to install afterwards. This whole process requires a high degree of accuracy when marking and drilling. It is made easier by making the hole in the lower slate 6-7mm in diameter while keeping the hole in the upper slate at 3mm. This allows for a small degree of movement of the rivet to allow it to line up with the hole in the upper slate, and also to cope with any settlement or movement in the roof structure at a later date. Under no circumstances should the hole in the upper slate be made larger as this will reduce the performance of the copper tail rivet under load.

Repairs

Once a verge or side abutment has been constructed, there are a few repair solutions. If the majority of the slates are not adequately fixed, the total verge or side abutment should be stripped back and started again. If there are only one or two isolated slates affected, it is possible to determine the centre line of the batten close to the rivet hole and to drill through the two layers of slate at that point. Into the hole should be pumped some clear silicone mastic, before a stainless steel dome headed wood screw is installed. This method is only acceptable where the supervising officer allows the use of silicone mastic.

Under no circumstances should mastic be used between the slates to hold them down. After as little as one year the mastic can fail and then the problem will still need to be resolved.

Conclusion

The extra marking and drilling of the edge slates at a verge or side abutment to install the copper tail rivets in not difficult, yet it does requires more work in the form of marking and drilling than with natural slates, to achieve a detail that is acceptable and safe.

Tips

- Half slates and whole slates must have at least two centre nail fixings per slates at the verge or side abutment; 1.5 wide slates need at least three centre nail fixings per slate at the verge or side abutment.
- Half and whole slates must have at least one tail rivet fixing. 1.5 wide slates need at least two tail rivet fixings.
- Drill the hole in the lower slate larger than the upper slate to allow for movement of the rivet during installation and for structural movement.
- Never use mastic to hold down the tail of a slate.

Compiled by Chris Thomas, The Tiled Roofing Consultancy, 2 Ridlands Grove, Limpsfield Chart, Oxted, Surrey, RH8 0ST, tel 01883 724774, Email: chris.thomas@thetiledroofingconsultancy.com

To view previous Slating & Tiling Tips, go to www.thetiledroofingconsultancy.com