

Slating & Tiling

TIPS 60

eaves closure

Rain is not the only thing that a good roof needs to keep out; it should also keep out birds, rodents and large insects, as they like to nest in the eaves, verge or other spaces, to protect themselves from the elements and predators.

At the ridge, hip, verge and valley, mortar bedding acts as a very effective means of filling in all the gaps. While with clay pantiles, the eaves course was traditionally filled with mortar, this has never been popular with other types of tiles or slates. For all other high profile interlocking tiles, eaves comb fillers should be used where the gaps are larger than 16mm.

Gap sizes

Having watched blue tits squeeze between louvre only 20mm apart on an extract fan grill, and bats fly into gaps between a soffit and a wall only 15mm wide, very little space is needed to let them into a roof.

Where a high profiled tile sits on a fascia board, birds and mice can use the guttering as a route to reach the open doorways of each tile corrugation, and allow access to the corridors of the batten cavity that can lead to other useful nesting and roosting places – like the cavities in the external brick walls. The British Standard BS5534: *the code of practice for slating and tiling*, recommends that if it were possible to pass a 16mm diameter ball through an opening, it should be protected with a closer to keep out small birds and rodents.

BS5250: *the code of practice for the control of condensation*, goes further and states that where ventilation grills are installed to ventilate the loft, or cavity below the underlay, the width of each opening in the grill should not be wider than 4mm, to prevent large insects getting through. This will keep out large flies, bees, wasps, moths and bats. You will never be able to keep out all insects like midges, spiders and storm flies, unless you hermetically seal the total external envelope of the building, which is impractical.

Flat tiles and slates

Generally, all flat tiles and slates should not need any form of eaves closure unless the side-lap gaps are excessive, or a rigid underlay and counter battens have been used below a roof cover. In such situations the batten cavity will be exposed, and a mesh should be used to close off the eaves opening, but not restrict the water draining off the underlay into the gutters. A special eaves closure or an eaves comb filler unit fixed upside down from the tilt fillet is usually adequate.

Interlocking tiles

Interlocking tiles with a low corrugation – like the Redland 49 and Sandtoft Standard Pattern – have eaves gaps less than the 16mm threshold when laid, and will not need an eave closer.

The tiles with a more pronounced corrugation – such as the Bold Roll, double pantile and single pantile, along with unders and overs and the old Redland Delta tiles – will all need some form of eaves closures.

Mortar bedding

The practice of mortar-bedding the eaves course of clay pantiles and unders and overs, does more than stop birds getting into the roof; it also helps the eaves tiles to resist wind uplift.

Those clay pantiles that do not have eaves clips should be started with one or more courses of plain tiles that are fully nailed, and then the first course of clay pantiles should be mortar-bedded onto the plain tiles. This allows any water on the underlay to drain under the plain tiles and into the gutter. Mortar-bedding onto two or more courses of plain tiles means that the minimum rafter pitch for the roof slope should not be less than 35°.

But if a single course is used, and fully covered by the eaves course of pantiles, then the pitch can be taken down to 30°. Mortar should never be laid directly onto the underlay as it will block the drainage path from the underlay into the gutter.

Keeping birds out
The fingers of the Eaves comb filler unit are rigid enough to stand up, yet flexible enough to bend to any shape. Note how the fingers angle up the underside of the tile, rather than down. Thanks to Klobber for the excellent photograph.



Solid eaves closers

In the past, eaves closers were made of wood or aluminium – now plastic – cut to the profile of the underside of the tiles. They were nailed one per tile to the top of the fascia board and angled out to meet the tiles.

As rafter pitches vary and the angle of the closer was fixed, the fit was generally good but not perfect. Lafarge Roofing still manufactures the solid eaves closers (Reform Eaves Filler Units), while all other manufacturers have moved over to a comb filler unit.

Eaves comb filler units

Eaves comb filler units (sometimes call 'bird stops') are 1m-long plastic strips that are either incorporated into the eaves vent grill, or form a separate unit that is nailed to the top of the fascia board with the fingers angled out towards the tiles.

The fingers are generally 50mm-70mm long, 4mm wide and have a 4mm gap between them, such that each finger can bend independently of its neighbour to accommodate any shape of tile. Where the height of the corrugation is more than the length of the fingers, the corrugations will not be fully protected and the tile manufacturer should be consulted, as they may have an alternative detail.

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Conclusion

Over the last 20 years eaves comb filler units have demonstrated that they can keep out birds and small rodents; however they are not as effective as mortar bedding.

The fingers of the comb allow air to circulate, and lower the level of humidity in the batten cavity. Mortar bedding should be used with clay pantiles that have no eaves clip, as it helps to resist wind uplift, but it is not as good as a strong metal eaves clip.

Almost all concrete interlocking tiles (and a few modern clay pantiles) have eaves clips, and these need to be nail-fixed directly to the fascia board. Where eaves clips are available, eaves closers should be used and mortar bedding is not recommended.

Tips

- Where roof tile manufacturers recommend the use of eaves filler, it should be installed.
- Mortar-bedding onto a single plain tile course should only be used with clay pantiles that have no eaves clip system.
- With high profile tiles, check that the fingers of an eaves comb are long enough to reach into the top of the profile.

