Slating & Tiling

TIPS 48

roof windows 2

In part one of this subject we discussed the design implications of roof windows. In part two we look at the installation of roof window flashings.

Narrow cuts

The installation of the roof window is always a problem as it is normally the carpenter who installs the window to suit the rafter spacing and the sill/head dimensions provided by the designer to satisfy the Building Regulations, before the roof is tiled or slated.

The size of the window is normally chosen to accommodate a particular thermal, light, or means of escape requirement, with no consideration for the module or setting out of the roof covering. Consequently, the fitting of the tiles or slates around the roof window can result in narrow cuts down the sides of the roof window, insufficient lap at the back gutter, and a trough between the bottom of the window frame and the head of the course of tiles under the apron flashing.

On the continent, the roof windows are normally installed by the roofer after the roof has been tiled, or during the roofing process, to allow the window to be positioned to suit the roof covering, not the other way around.

Kicking up

Narrow cuts at the side channels will cause problems in fixing as the side channel flashings lay on the battens; therefore, to nail a narrow cut to the batten often results in the nail puncturing the side flashing. Additionally, because the side flashings lay on the battens, it lifts the edge tile by more than the thickness of the flashings. The head of the tile is lower than the nib position when laid, as the tiles lay at approx 5^0 less than the rafter pitch, and it prevents the tile nib from locating onto the batten, especially if the nib is continuous across the head of the tile.

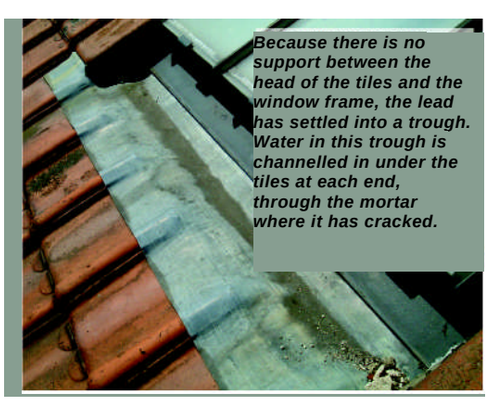
In trying to get the edge tiles to sit without kicking up too much, the nib is often removed, the edge welt on the flashing is flattened, making it ineffective, and the top tiles that kick up disturb the tiles on the course that runs through above the back gutter. The gapping that is generated between the tiles, especially where slates or tiles are laid broken bond, can allow wind-driven rain to get in through the gaps, beyond the edge of the flashing.

Tilt fillet and underlay

The tiles that rest on the back gutter often lay at the wrong angle as there is often no adequate tilt fillet to support them at the correct height. Each tile design will need a different support height to accommodate the tile body thickness and weather-bar arrangement.

Where the tiles have to be all clipped – or clipped around the roof window – a standard clip is impossible to fix without penetrating the flashing/underlay. The only easy method is to use a verge clip laid vertically and nailed to a secondary batten. The use of a piece of tile batten laid in the back gutter to support the edge tiles or slates is unsatisfactory, as the timber will get wet and rot away prematurely, or slide out.

There is a requirement to turn the underlay up the sides of the roof window by approx 50mm to ensure any water on the underlay does not leak in under the window frame. Unfortunately, at the corners (unless the side pieces of underlay are separate from those above, and below the roof window) there will be holes in the underlay at each corner. The common practice is to mitre cut the underlay at the corners to let it turn up, leaving a V shaped hole at the corner that can let water drain in.



Because there is no support between the head of the tiles and the window frame, the lead has settled into a trough. Water in this trough is channelled in under the tiles at each end, through the mortar where it has cracked.

the side on tile sit flat, has been

Leaks at the corners would indicate that there are problems with the flashings around the window or higher up, as without the water draining through the hole on the corner, the underlay would act for many years as the primary waterproofing layer and rot through long after the guarantee on the roof window had run out.

Some companies provide a gasket that is laid over the battens before the flashings are fitted, which lifts up the side flashing by the thickness of the gasket. The gasket sticks to the battens and underlay, to protect the four corners of the roof window and disguise the fact that there is any water leaking onto the underlay through the tiles or flashings.

Debris traps

Around the roof window flashings, there are potential traps where leaves, pine needles, moss, snow and other natural debris can collect and prevent rainwater getting away, leaving a problem, especially with windows installed in shallow pitched roofs. The heavy metal roof windows, with plate hinges and bolts that extend into the back gutter, can collect debris between the two hinges. At the bottom of the side channels, the flashing has to change pitch to rise up onto the top surface of the tiles in the course below the roof window. Where this change of pitch occurs, it forms a dip that allows debris to collect and obstruct the water flowing down the side channels.

A shallow trough can occur where the apron flashing spans from the frame to the top of the tiles in the course below the window. This can collect debris and channel water sideways under the tiles on the first course on either side of the window and onto the underlay.

In conclusion

Roof window installations with proprietary flashings are an easy fixing option. They are a Jack-of-all-trades and often a master of none. Purpose-made lead flashings, correctly installed, to the correct width and laps, would be a much better option for most situations, but would be more work and less convenient. In many instances, the roof windows are excellent, but are let down by the poor performance of the integral or removable flashings.

Tips

- Do not cut the underlay at the corners of the window frame, but use separate pieces lapped onto the one below.
- Try and choose a window sized and positioned to suit the module of the tiles or slates, to eliminate all narrow cuts.
- Use verge clips to secure edge tiles where the normal fixing would penetrate the flashing and compromise the weather resistance. ■

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