



Advantage

Structural Defects Insurance

SHINING A LIGHT ON ROOF FIXING AND VENTILATION



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1. What a load of BS

The British standard for slating and tiling came into effect as a mandatory requirement in February 2015; it has now been amended in 2018 to include a revision of BS 8612:2018, which aims to improve the weather tightness of new and refurbished roofs.

The 5534 British standards focus was on batten selection, fixings, wind uplift formulas and a means of calculating fixing specifications by tile manufacturer's issuing a FREE site-specific roof fixing specification detailing nailing and clipping details relevant to the sites location and exposure.

The amendment (BS8612) concentrates on the installation of dry-fix roofing products such as the dry verge systems, plastic valleys and screw down clips for ridge tiles as seen below in figures 1 & 2.

The issues being that poor manufacturing of these can lead to inferior materials becoming brittle and shearing after exposure to sunlight and inclement weathers.

Fig 1 Dry Verge System



Fig 2 Dry ridge and Valley



So how do we meet the new standards and what does this mean for roofers are they looking at more work for the same money?

In essence no the standards can be adhered to by purchasing materials from a reputable source and that it carries a BBA certification showing it meets the requirements for BS8612. When fixing into battens for the verge capping it is often reliant on a nail fixed into the end grain or sometimes a screw, this will now need fixing through the batten face, specific dry fix systems are developed to accomplish this and tile manufacturers will display the relevant british standard compliances on their websites.

However the fun does not stop there, another standard that is often overshadowed by its counterparts is BS 5250 Code of practice for control of condensation in buildings, First published October 1975, the Second edition was June 1989, Third edition November 2002, Fourth edition December 2011, Came into effect 31 December 2011 which Supersedes BS 5250:2002. And yet it is still a source of problems in 2018!

2. Steam me up Scotty

The British standard code of practice (section 8.4 Roofs), along with Approved Document C relating to surface condensation in roofs and resistance to surface condensation and mould growth. Both attempt to inform us on how to stop the roof from getting somewhat sweaty, although it is still a constant issue for residents and construction professionals alike.

With the implementation of breather membranes, eave vent trays or ‘chocolate box tray’ as seen in figures three & four below (see if can you spot the issue which will be explained later in this chapter). Surely, we are doing the best we can.

Fig 3 correctly installed eave vent tray



Fig 4 incorrectly installed eave vent tray



Perhaps it is Part L (conservation of Fuel and Power) pushing us towards more insulation in our loft spaces, walls, floors and even windows! This is surely some kind of conspiracy between the government and the insulation manufacturers and must be causing us the issue at hand?

Well as I remove, my tin foil hat and reconnect to 'the grid'. The answer is no.....

Insulating buildings is a good thing, however designs and details are the key, and in past issues we have discussed the handling of moisture and the formation of condensation, which breeds mould growth. Vapour barriers and control systems are fantastic at managing this however; airtight houses need mechanical ventilation, and heat recovery systems.

So what about none mechanically vented houses?

The photos (figures 3&4), are a prime example of a detail used however, it is used incorrectly. The vent tray correctly installed covers down to the eaves allowing insulation material to meet the material in the wall stopping a cold bridge where mould and damp will form. Whereas figure 4 will do the same, however the airflow will not pass into the roof space as the tray does not cover the base layer of the ceiling insulation allowing a passage of air into the roof space out of the ridgeline vents. Although not clearly seen in the photos figure three also allows moisture above the breather membrane to trickle down and pass out below the tiles with a 10mm drape in the membrane.

3. Fail to plan, plan to fail

Designers of the roof ventilation and fixings methods should consider the internal spacing of the roof and its usage, from there a strategy can be formed to identify and correctly place terminals to ventilation systems, Part F1 does cover ventilation however it does not normally deal with areas not often visited by people or used solely for storage. Higher insulated buildings can be an issue if not managed correctly and modern life as discussed in previous issues does create a lot more water vapour around the homes, which naturally rises to the roof space where once in contact with a cooler surface will condensate which when teamed with climate issues of moisture can lead to mould and rot.

Designers should also consider the following points

- Moisture entering the structure during construction prior to becoming water tight
- Post construction inclement weather such as sleet, rain, snow
- Water vapour being created by the occupants of the building
- Various temperatures and high relative humidity formed by hot weather following cold



Summary

When dealing with fixing roof coverings you should seek a suitable tile or slate covering that will give longevity to the roof and not be effected by the ever-changing seasons. The fixing of the coverings, battens and membranes should adhere to BS 5534, a site-specific roof fixing specification be sought from the manufacturer of your selected product. The clips, nails and dry fix systems should carry third party accreditation such as a BBA Certificate and sourced from a reputable supplier or merchant.

Finally, the last word on loft spaces is to seal your ceilings, a correctly sealed and ventilated roof space should never suffer from becoming an impromptu steam room ensure your Designer or Architect is fully versed on the requirements and that workmanship is carried out to a very high standard.

