

In a series of articles on interlocking concrete roof tiles, experts from the **Concrete Tile Manufacturers Association** have pooled their knowledge. This Construction Note discusses dry fix verges.

### The verge

The verge is the junction between the roof and the gable end wall, where the verge is normally at right angles to the eaves and the ridge. If the verge is not at right angles to the eaves or ridge it is known as a raking verge. Rainwater will flow away from a raking verge but if rainwater flows over a verge it should be considered as a raking eaves. In the last 15 years dry fix verge systems have been developed to allow both dry laying and mechanical fixing of verge units. They allow the roof to be completed quickly, regardless of the weather, but most are not suitable for raking verge situations.

### The building structure

The wall structure should be built up to a neat sloping finish level with the top of the rafters. With timber frame construction this may be up to 50mm below the top of the rafters to allow for shrinkage of the timber structure. With a timber gable ladder the frame should be positioned and fixed to the rest of the roof structure prior to starting roof tiling.

### Verge junctions

At the junction of two verges at the ridge, there needs to be an end ridge cap or a block end ridge tile to close off the top of the two verges and to prevent birds and large insects getting into the roofspace.

Most dry fix verge systems are designed for straight runs of verge. They are not designed to cope with changes in the rafter pitch, as with a mansard roof. Most can be cut and joined to make them work utilising a lead saddle to weather the junction, but some cannot. Dry fix systems fall into three classifications: - concrete cloaked verge units, PVC-u interlocking verge units and PVC-u continuous verge extrusions.

### Concrete cloaked verge

Cloaked verge tiles (**F**) are available with some profiled interlocking tile patterns, but not all. The cloaked verge tiles are available in right hand units and left hand units. Each cloaked verge unit is a fixed width and cannot be cut down. So for the infinite number of eaves lengths the overhang at the verge is

regulated by shunting the tiles in or out, equalising the overhang at each verge, and/or inserting a half tile. Cloaked verge tiles are not suitable for raking verges.

### Battens

As there is no wet mortar bedding the battens (**B**) can be taken out to the inside of the verge unit but normally finish flush with the barge board or wall face. On rafter pitches above 40 degrees the weight of the units can cause the unsupported end of the batten to deflect, so will need to be reinforced with an additional batten, fixed directly below the main batten, and long enough to fixed to at least two rafters.

### Underlay/undercloak

The underlay (**A**) should be laid to allow a 50mm overhang at the gable ladder or wall face. The cloaked verge tiles should finish close to the wall or gable ladder face. Where an overhang is unavoidable (**G**), an undercloak (**H**) should be positioned between the underlay and the tile battens to touch the inside face of the cloaked verge tiles. This is to stop birds or large insects getting into the roof void. At the eaves the undercloak should finish on top of the fascia board to allow the eaves filler units to extend to the inside face of the cloaked verge tile. Again, this is to prevent birds or large insects getting into the roof void.

### Fixings

Each cloaked verge unit should be nailed to a batten. The left hand eaves cloaked verge tile should be located to its adjacent eaves tile, which should also be clipped, to ensure it is fixed at the tail. Each cloaked verge tile has a pin or clip that locks the tail of one tile onto the head of the tile below. This means that the completed verge is fully clipped, whilst maintaining a limited headlap adjustment normally between 75 and 125mm.

### PVC-U interlocking verge units

For flat interlocking tiles and some low profile tiles, plastic verge units (**J**) are the preferred dry fix solution. Some are designed as a continuous verge clip, while others are a capping with an integral metal verge clip. Many of the units are profile-specific, while others are more universal. The units have a fixed verge overhang (**C**) of

FIGURE 2: Verge with cloaked verge tiles

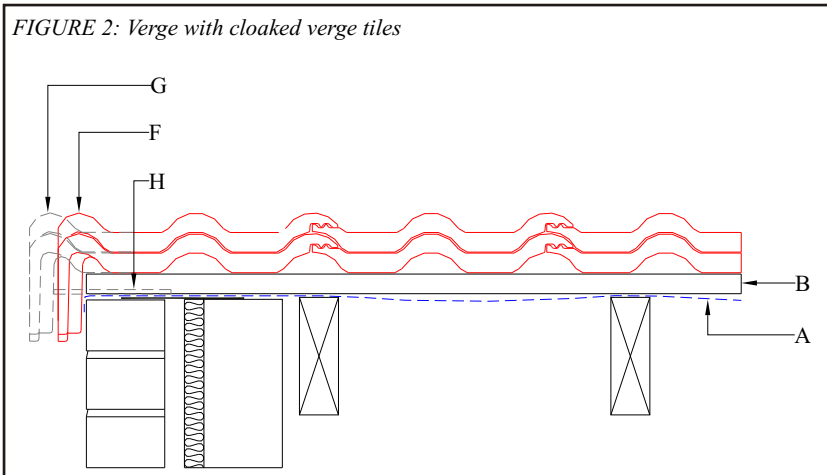
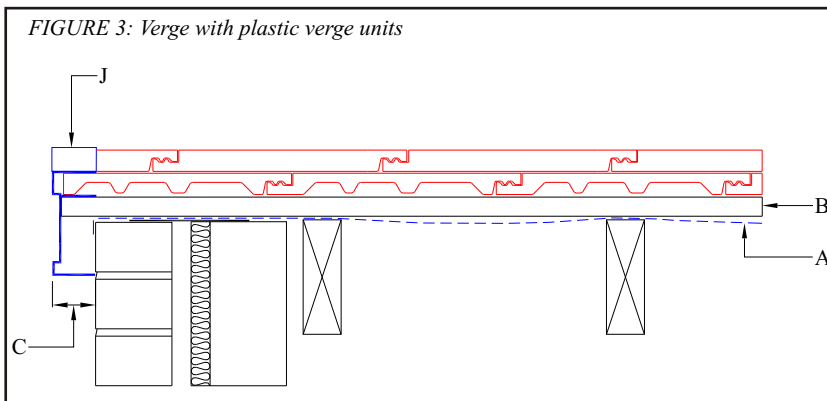


FIGURE 3: Verge with plastic verge units



# Construction Notes - No 3 Verge (Part 3)

approximately 50mm that requires the verge battens to cap over the end of the verge tiles, which can hide the cut edges inside the PVC-u verge units. PVC-u verge units are not generally suitable for raking verges.

## *Battens*

The battens (**B**) at the verge need to over-sail the verge by up to 50mm, depending upon the design. This allows the PVC-u verge unit to encapsulate the end of the batten and provide a very secure tile clip fixing. Some designs have special fixings to allow nails to be driven into the end grain of the tile batten without splitting the timber or reducing the effectiveness of the fixing.

## *Underlay*

The underlay (**A**) should be finished up to 50mm beyond the wall line or bargeboard. There is no need for an undercloak.

## *Fixings*

The units, being light, need to be securely fixed at the head and tail of each plastic unit. It is therefore essential that the corner eaves/verge unit is securely fixed to the fascia board with the special eaves fixing kit supplied with each design. The eaves fixing kit also acts as a filler to prevent the entry of birds and large insects. The fixing at the head of the unit may be directly into a batten or via a metal verge clip hidden inside the plastic verge unit, which in turn is nailed to the batten end. Subsequent units locate onto the head of the lower unit and are fixed at the head to the next batten. The design will

allow for a limited amount of headlap adjustment. If excessive headlap is needed it is worth checking with the manufacturer first.

The units can be installed prior to the tiles being laid or can be installed as tiling progresses. Most designs will not allow you to install them after the tiles have been laid.

## **Continuous verge extrusions**

The extruded verge system is the earliest form of dry verge system and is only suitable for flat slate-like products. The continuous PVC-u verge section does not follow the steps in the tile coursing. The unit contains a drainage channel but this is not suitable for use as a small gutter in a raking eaves situation. It is suitable for a raking verge provided it can be satisfactorily fixed to the tile battens.

## *Battens*

Depending upon the design of the dry verge system, the battens may either finish flush with the bargeboard or wall face, or they may extend beyond the bargeboard or wall face.

## *Underlay/undercloak*

The underlay should be allowed to finish flush with the face of the gable ladder or wall face.

## *Fixings*

The units, being both lightweight and in lengths of up to 3 metres, are prone to Expansion and contraction, and, like plastic guttering, need to be securely fixed, yet allow for thermal movement. Each continuous length of verge is

secured to the battens by integral clips and junction caps. It is therefore essential to use the clips and brackets supplied with each system. Most designs will not allow you to install them after the tiles have been laid.

## **Summary**

- The wind forces on a verge can be higher than other parts of the roof, so ensure that each verge unit is securely fixed.
- Dry fix verge systems can be installed in almost any weather, making completion easy and providing a maintenance-free solution.
- PVC-u verge systems form an edge capping which will cover the cut edges of the verge tiles.

CTMA members are:

Cemex  
Forticrete  
Lafarge  
Marley Eternit  
Sandtoft