Eternit

Profiled Sheeting
Ventilation of Domestic Roofs

TECHNICAL NOTE
EPS-01-10-en-v2

When installing Profile sheeting in a domestic application, installation and ventilation requirements must be in line with the BS 5250 and the manufacturers installation recommendations.

Part A – Ventilation Requirements

There are three options for ventilating Profile sheet roofs in a domestic application –

Section 1 - Ventilation above a (LR) breathable underlay
Section 2 - Ventilating underneath a (HR) non-breathable underlay
Section 3 - Ventilation requirements when there is no underlay

Section 1 - Ventilating above the underlay

Installing profile sheeting with a breathable underlay (LR) in the build-up, consideration must be taken to remove any moisture and condensation from above the underlay. Ventilation is required by the means of a 25mm gap at the eaves and 5mm at high level.

To achieve a 25mm ventilation path, part of the ventilation can go through the open corrugations of the sheet and the remainder can be achieve by using an adequate depth counter batten, running from eaves to ridge, installed on top of the underlay before the fixing battens.

(The free air area through the Farmtec corrugations is approx. 266cm^2 per sheet.)

Section 2 - Ventilating underneath a (HR) non-breathable underlay

Installing profile sheeting with a non-breathable underlay (HR) in the build-up, consideration must be taken to remove any moisture and condersation from underneath the underlay.

For a warm roof constuction BS5250 recommends there should be a 50mm clear gap between the insulation and the underlay, ventillated by the means of 25mm gap at the eaves and 5mm at high level.

If you have a cold roof construction with a roof pitch between 15° and 35° with insulation at celing level, BS5250 recommends there should be a 10mm clear gap at both eaves, ensuring the insulation does not block the air path. In addition a 5mm ventillation gap is required at high level for roofs that are greater than 10m span eaves to eaves or when the roof pitch is greather than 35° or when the roof is a monpitch or lean-to.

For roof pitchs between 10° and 15°, BS5250 recommends there should be a 25mm clear gap at both eaves, ensuring that the insulation does not block the air path. In addition a 5mm ventillation gap is required at high level for roofs that are greater than 10m span eaves to eaves or the roof is a lean-to or monopitch.

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Section 3 - Ventilation requirements when there is no underlay

There is no set requirement in BS 8219, for the use of a membrane with fibre cement corrugated sheets. For domestic buildings if the construction allows it, it is always preferable to use an underlay.

The two main reasons for not using an underlay are:

- There are no rafters to support the underlay, I.E – portal frame building
- On low pitch roofs where the underlay must be taken over the bottom of the purlin or fascia board. A long tilting fillet will be required to ensure there is no ponding on the underlay. (Although, there is a possibility the underlay could run under the bottom purlin and discharge behind the fascia board.)

When an underlay is not being used, the void between the insulation and the underside of the profiled sheets should be vented, with inlets and outlets as required for either warm or cold roof applications as appropriate.

For warm roof applications, some of the ventilation path can be provided through the sheet corrugations as in section 1 above.

Using Sheathing Boards

Using a (LR) breathable underlay supported on Plywood, OSB or other sheathing boards that offer a high resistance to the passage of water vapour, acts as a (HR) non breathable underlay. This will require ventilation below the sheathing board as above in section 2. Similarly if using a sheathing board that offers a high resistance to the passage of water vapour without an underlay, ventilation will be required below the sheathing board as above in section 2.

When using a (LR) breathable underlay on an open jointed boarding (typically 150 wide planks with 2mm joints) it acts as a (LR) breathable underlay. This will require ventillation above the sheathing board and underlay as above in section 1.
If there is no underlay on the open jointed boarding, ventilation is required above the boarding as above in section 1.

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