

WARM ROOFS with small or no voids above sloping insulation

Non-permeable underlays (Type HR)

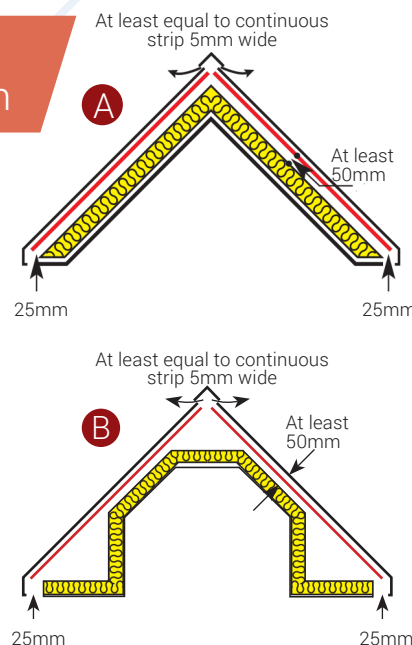
All roof types / All roof pitches:

Ventilation beneath the underlay and above the insulation of $25,000\text{mm}^2/\text{m}$ at eaves or low level and $5000\text{mm}^2/\text{m}$ at ridge or high level.

A 'well-sealed ceiling' must be provided as defined by BS 5250 clause H.3.2, and a separate air and vapour control layer on the warm side of the insulation.

The space between the underlay and insulation should be at least 50mm deep with a minimum of 25mm at the centre of underlay drape.

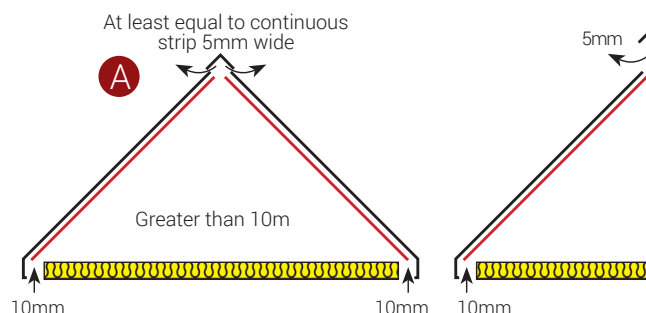
Obstructions such as dormers, valleys, roof windows, compartment walls, fire barriers and changes in pitch create separate voids below the roof slope. Provide ventilation openings to each void at high and low level as shown in the examples.



Non-permeable underlays (Type HR)

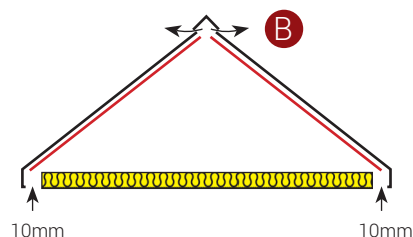
Roof pitch: Greater than 35° (degrees)

Roof Type: Pitched Roof, Lean-to Monopitch or where roof span exceeds 10m.
Additional ventilation of $5,000\text{mm}^2/\text{m}$ at ridge or high level.



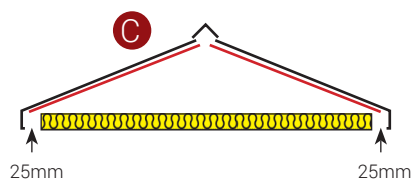
Non-permeable underlays (Type HR)

Roof pitch: Greater than 15°
Additional ventilation of $10,000\text{mm}^2/\text{m}$ at ridge or high level.



Non-permeable underlays (Type HR)

Roof pitch: 15° or less:
Ventilation beneath the underlay of $25,000\text{mm}^2/\text{m}$ at eaves or low level.



COLD ROOFS with large voids above horizontal insulation

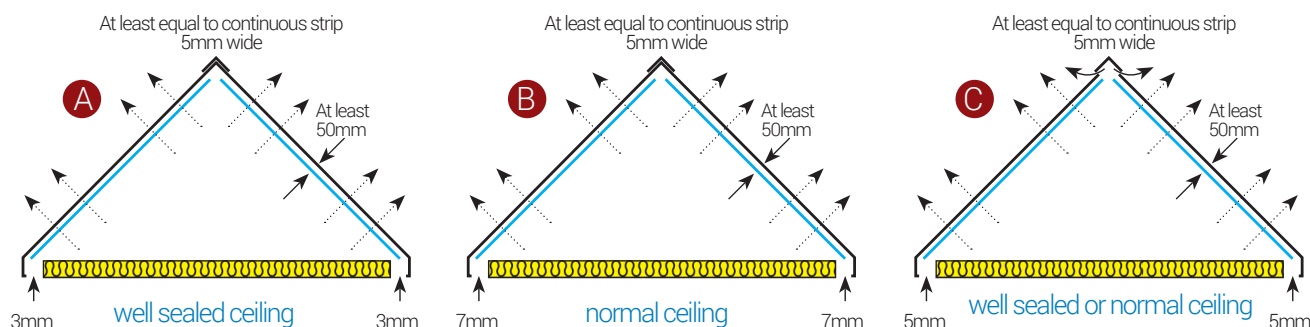
Vapour permeable underlays (Type HR) Dwelling sized roofs

All roof pitches, with 'well-sealed ceiling' as defined by BS 5250 clause H.3.2: Ventilation beneath a vapour permeable underlay of $3,000\text{mm}^2/\text{m}$ at eaves or low level.

This reduction is possible due to the vapour permeability of the underlay.

All roof pitches, with ceiling not well sealed (likely in re-roof situations): Ventilation of $7,000\text{mm}^2/\text{m}$ at eaves or low level.

Alternative solution (all ceilings): Ventilation of $5,000\text{mm}^2/\text{m}$ at ridge or high level only.



Vapour permeable underlays (Type HR) Larger than dwelling sized roofs

All roof pitches, with 'well-sealed ceiling' as defined by BS 5250 clause H.3.2: Ventilation beneath a vapour permeable underlay of $5,000\text{mm}^2/\text{m}$ at eaves or low level plus ventilation of $5,000\text{mm}^2/\text{m}$ at ridge or high level.

All roof pitches, with ceiling not well sealed (likely in re-roof situations): Ventilation of $10,000\text{mm}^2/\text{m}$ at eaves or low level plus ventilation of $5,000\text{mm}^2/\text{m}$ at ridge or high level.

