



Explanation of the terms 'warm' and 'cold' roofs

A 'cold' roof construction is one where the insulation is laid between the ceiling joists (ie over a normal flat ceiling). This then means that everything above the insulation, such as the rafters, is colder than the living space. Warm, moisture-laden air can permeate up through the ceiling. When it reaches the cold roof space (ie the loft) the change in temperature can mean that condensation will form on timbers, underlay etc. Roof space ventilation is used to remove this damp air and thus prevent condensation forming.

There are different interpretations of what a 'warm' roof is. However, the generally accepted design of a 'warm' roof is one where the insulation, in the form of rigid sarking, is laid on top of the rafters. Therefore, everything below the insulation is as warm as the living rooms in the house.

This form of construction has been adopted from flat roofing, where a structural deck is covered by a sealed, vapour-proof membrane. Rigid insulation is laid over this, the gaps between it are carefully sealed and then a waterproof roof covering is laid on top. However, in practice it is very difficult to adapt this method for pitched roofing, where laying and sealing a vapour-proof underlay and rigid insulation on a slope is difficult.

Vapour permeable membranes are increasingly being used in these types of construction. In these cases advice should be sought from the manufacturer on the type and level of ventilation.

Another way to achieve a living area within the roof is to lay insulation between the rafters, leaving a minimum gap of 50 mm above the insulation and below the roofing underlay. This then allows a ventilation path between the eaves and the ridge. This detail is sometimes also referred to as a 'warm' roof.

For more information please refer to our *roof ventilation* brochure or contact Sandtoft Technical Support on 0870 145 2021.

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