



Low roof pitches with long rafter lengths

Introduction

The longer a rafter length is; ie the distance from ridge to eaves; the greater the amount of water that the roof slope will collect and discharge into the gutter. Obviously, the tiles at the lower end of the slope, where the amount of water is greatest, must be able to cope with the expected volume of water without risk of leakage into the roof space beneath. This is of particular importance at low roof pitches, where the speed of water running towards the gutter is not as fast as it would be on a steeper slope, therefore the risk of water ingress through the tiles is increased.

Sandtoft's recommendations

Sandtoft's recommendations for minimum roof pitch, headlap and gauge etc apply to rafter lengths of not more than 9 metres in driving rain exposures of less than 56 litres/square metre per spell and 6 metres in driving rain exposures of 56 litres/square metre per spell or greater. See map of categories of exposure to driving rain overleaf.

Increasing the roof pitch

Where the rafter length exceeds the recommended maximum then one option is to increase the roof pitch. For guidance, Sandtoft recommends that the pitch should be increased by one degree for every half a metre distance over the recommended maximum length. For example, for a rafter length of 8 metres on a roof in an area where the expected driving rain may exceed 56litres/m² and the minimum recommended roof pitch for the proposed tile is 17.5 degrees, then the roof pitch should be increased to at least 21.5 degrees. This could be considered up to 30 degrees, but above this the water run-off is such that no further increase in pitch would be of major benefit.

However, it should be remembered that by increasing the roof pitch the rafter length also increases. The designer should also take the site location and other topographical factors into consideration.

Other possible solutions

If it is not possible, or practical, to increase the roof pitch then alternative ways of dealing with the issue should be considered. For example, the roof could be divided into shorter sections by the use of a gutter partway down the slope.

Depending upon the design of the building, it may be feasible to have features such as dormer windows or Northern lights to break up the length of the roof slope.

If none of the above solutions are possible then it will be necessary to design a waterproof sub-roof structure, possibly incorporating a waterproof rigid sarking system and durable underlay. However, the design of such a system is beyond the scope of Sandtoft Manufacturers Recommendations.

For more information please contact Sandtoft Technical Support on 0870 145 2021.

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Categories of exposure to driving rain

