

## Pitched Roof - Insulation between and over rafters (no sarking board)

Horley Town Council

02/06/2025

U Value  
**0.12** W/(m<sup>2</sup>·K)

Layer	Material	Thickness mm	Lambda W/(m·K)	R value m <sup>2</sup> ·K/W
External Surface Resistance				0.100
Roof Finish	TILES / SLATES & BATTENS	30		0.000
Counter Battens	highly-ventilated	38		0.000
Membrane	KINGSPAN NILVENT BREATHABLE MEMBRANE	0.5		0.006
Fixing Type	METAL FIXINGS		17.000	
	Number of Anchors per m <sup>2</sup>	10		
	Diameter of Anchors (mm)	7.9 mm		
Insulation Over Rafters	KOOLTHERM K107 - (INSULATION OVER RAFTERS - CONTINUOUS LAYER)	75	0.019	3.947
Insulation between rafters	KOOLTHERM K107 - (BETWEEN TIMBER RAFTERS)	100	0.019	5.263
Bridging rafters	TIMBER RAFTERS (47mm@400mm)	150	0.130	1.154
Bridge percentage	13%			

Layer	Material	Thickness mm	Lambda W/(m·K)	R value m²·K/W
Residual Airspace	TIMBER RAFTER CAVITY; U/V. (47mm@400mm LOW-E)	50		0.507
Vapour-Barrier	POLYTHENE VAPOUR CONTROL LAYER	0.3		0.001
Plasterboard	PLASTERBOARD	12.5	0.190	0.066
Internal finish	PLASTER SKIM	3	0.180	0.017
Internal Surface Resistance				0.100
Total Construction Thickness				309.3 mm

U-values calculated to BS EN ISO 6946:2017 or BS EN ISO 13370:2017 depending on application. For floor calculations the u-value result is dependent on the exposed perimeter and area entered into the calculator for each individual floor calculation. Soil type thermal conductivity taken as 1.5 W/mK, relevant to Clay/Silt. The physical and chemical properties of the products of Kingspan Insulation represent average values obtained by testing in accordance with generally accepted standards and are subject to standard tolerances.

Kingspan Insulation reserves the right to amend product specifications and thicknesses without prior notice. The information, calculations, technical details and fixing instructions included in any documentation or advice including this calculation are given in good faith and apply only to uses described in this context.

Product thicknesses included within the calculation should not be taken as being available ex-stock and reference should be made to the current Kingspan Insulation price-list or advice sought from Kingspan Insulation's Customer Service Department. Kingspan Insulation is not liable for damages in case of wrong and/or incomplete information provided.

Furthermore, Kingspan Insulation does not guarantee a certain result.

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For wall applications (excluding K-roc)

There are potential restrictions placed upon this product which vary dependant on building type, height, construction and location. For guidance regarding the routes to compliance for meeting the fire safety requirements of the Building Regulations /Standards, refer to the relevant Technical Bulletins and links to Government websites at [www.kingspaninsulation.co.uk/fireregulations](http://www.kingspaninsulation.co.uk/fireregulations)