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### Calculation of interstitial condensation

by ICond Calculator version 2.03

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**Element type: Roof**

### Roof Type 1 - 169mm SIP

#### Construction Details

Layer	d mm	$\lambda$ W/m·K	rv MN·s/g·m	R layer m <sup>2</sup> K/W	Rv layer MN·s/g	Description
				0.100		Rsi
1	12.5	0.160		0.078		Vapourcheck plasterboard
2			Rv-value		689	Protect VC Foil Ultra Insulating AVCL Membrane
3	25	R-value	Rv-value	0.780	0.050	Air layer unventilated
4	11	0.130	50.0	0.085	0.55	SIP - OSB
5	147	0.030	7.00	4.800	1.0	SIP - Lambdatherm EPS
6	11	0.130	50.0	0.085	0.55	SIP - OSB
7			Rv-value		0.080	Protect VP400 Plus LR
8	50	R-value	Rv-value		##	Air layer ventilated
9	12	1.000	2.50		##	Roof Tiles
				<u>0.100 #</u>		Rse
	<u>266 mm (total roof thickness)</u>			<u>6.027</u>	<u>691</u>	

# this resistance substitutes for Rse and the resistance of layers 8-9 because of the ventilated air layer (layer 8)

## set to zero because of the ventilated air layer

#### Boundary conditions

Manchester (Edinburgh.hgt)  
Return period 2 years (mean external temperature and RH)  
Internal Humidity: BS 5250 Class 3

#### Results

No condensation

The U value result has been determined as follows:

#### Bridging:

A thermal bridge percentage for the timber studs of 12.5% has been used in accordance with BR 443: 2006 Conventions for U values (section 4.5.1 (ii)).

#### Correction level:

A correction level of 0 has been used in accordance with Table F1 of BS EN ISO 6946: 2017 Building components and Building elements - Thermal transmittance - Calculation methods.

Please check to confirm and advise if any amendments are required.

Calculated by Protect Technical Services





**protect**

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