



**Protect Membranes**  
2 Brooklands Road, Sale, Cheshire M33 3SS

Telephone **0161 905 5700**  
Fax **0161 905 2085**  
Email [info@protectmembranes.com](mailto:info@protectmembranes.com)  
Website [www.protectmembranes.com](http://www.protectmembranes.com)

**Calculation of interstitial condensation**

by ICond Calculator version 2.03  
Printed on 06 Mar 2018 at 10:19

**Element type: Roof**  
**Roof Type 1 - 144mm 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 m
3	25	R-value	Rv-value	0.530	0.050	Air layer unventilated
4	11	0.130	50.0	0.085	0.55	SIP - OSB
5	122	0.030	7.00	4.067	0.85	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
				0.100 #		Rse
	<u>244 mm</u> (total roof thickness)			5.044	691	

# 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

