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U-value calculation

by BRE U-value Calculator version 2.03

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Element type: Wall - Structural insulated panel

Calculation Method: BS EN ISO 6946

Wall Type 2 - 194mm SIP

Layer	d (mm)	λ layer	λ bridge	Fraction	R layer	R bridge	Description
					0.130		Rsi
1	12.5	0.160			0.078		Vapourcheck plasterboard
2							Protect VC Foil Ultra Insulating AVCL
Membrane							
3	22	R-value ¹	0.130	0.125	0.780	0.169	Cavity unventilated
4	11	0.130			0.085		SIP - OSB
5	172	0.030			5.733		SIP - Lambdatherm EPS
6	11	0.130			0.085		SIP - OSB
7							Protect TF200 Breather Membrane
8	12	0.210			0.057		Magnesium Oxide Board
9	5	0.570			0.009		Render
					<u>0.040</u>		Rse
	<u>246 mm (total wall thickness)</u>				<u>6.997</u>		

¹Specified thermal resistance

Total resistance: Upper limit: 6.914 Lower limit: 6.754 Ratio: 1.024 Average: 6.834 m²K/W

U-value 0.146

U-value (rounded) 0.15 W/m²K

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

