

U-VALUE CALCULATOR REPORT

Property Reference	21124		Issued on Date	20/12/2021
Assessment Reference		Prop Type Ref	u-values	
Project	Re-Purposed PIR Insulation			
Calculation Type	Conversion (As Designed)			
SAP Rating		DER		TER
Environmental		% DER<TER		
CO ₂ Emissions (t/year)		DFEE		TFEE
General Requirements Compliance		% DFEE<TFEE		
Assessor Details	Mrs. Susan Fox, SF Energy Limited, Tel: 07825 631518, suzi@sfenergy.co.uk		Assessor ID	C358-0001
Client	MAC Architects, M151			

Building Elements

Roof Slate Roof column A - 150mm + 80mm Repurposed PIR

Roof Type: Pitched Roof, insulated sloping ceiling

Layer	Description	Thickness (mm)	Conductivity (W/m ² K)	Resistance (m ² K/W)	Fraction (%)
Ext surface				0.0400	
Layer 1	Slate				
	Main construction	15	1.0000	0.0150	100.00
Layer 2	Proctors Roofshield				
	Main construction	0.8	0.1100	0.0073	100.00
Layer 3	Sarking				
	Main construction	22	0.1500	0.1467	100.00
Layer 4	airspace / rafters				
	Main construction	25	0.0388	0.6440	91.00
	Main construction	25	0.1300	0.1923	9.00
	Corrections - Cavity Unventilated, Emissivity: Low Emissivity (BR443)				
Layer 5	KR Cladding Repurposed PIR / rafters				
	Main construction	150	0.0310	4.8387	91.00
	Main construction	150	0.1300	1.1538	9.00
	Corrections - Air Gap: Level 1, Fasteners: None or plastic				
Layer 6	KR Cladding Repurposed PIR				
	Main construction	80	0.0310	2.5806	100.00
	Corrections - Air Gap: Level 0, Fasteners: None or plastic				
Layer 7	service void				
	Main construction	35	0.2188	0.1600	92.17
	Main construction	35	0.1300	0.2692	7.83
	Corrections - Cavity Unventilated, Emissivity: Normal				
Layer 8	Plasterboard, standard				
	Main construction	12.5	0.2100	0.0595	100.00
Int surface				0.1000	

Total resistance: Upper limit = 8.012 m² K/W Lower limit = 7.404 m² K/W Average = 7.708 m² K/W
 Total correction = 0.0024 m² K/W U-value (unrounded) = 0.13 W/m² K

Unheated space: None

Total thickness: 340 mm

U-value: 0.13 W/m² K

Kappa: n/a