

U-VALUE CALCULATOR REPORT

Property Reference	P23972 The Western		Issued on Date	16/10/2023
Assessment Reference		Prop Type Ref		
Project	The Western, 205, High Street			
Calculation Type	New Build (As Built)			

SAP Rating		DER		TER	
Environmental		% DER<TER			
CO ₂ Emissions (t/year)		DFEE		TFEE	
General Requirements Compliance		% DFEE<TFEE			

Assessor Details	Mr. Malcolm Lisle, Malcolm Lisle, Tel: 0114 2521999, malcolm@saps4u.com		Assessor ID	P736-0001
Client				

Building Elements

Roof Flat Roof

Roof Type: Flat Roof standard (no precipitation)

Layer	Description	Thickness (mm)	Conductivity (W/m ² K)	Resistance (m ² K/W)	Fraction (%)	Density (kg/m ³)	Heat Cap. (J/kgK)
Ext surface				0.0400			
Layer 1	Celotex XR4000 Main construction Corrections - Air Gap: Level 1, Fasteners: None or plastic	200	0.0220	9.0909	100.00	30	1400
Int surface				0.1000			

Total resistance: **Upper limit** = 9.231 m² K/W **Lower limit** = 9.231 m² K/W **Average** = 9.231 m² K/W
 Total correction = 0.0097 m² K/W **U-value (unrounded)** = 0.12 W/m² K

Unheated space: None

Total thickness: 200 mm

U-value: 0.12 W/m² K

Kappa: 0.00 kJ/m² K

CONDENSATION RISK ANALYSIS

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Roof - Flat Roof

Environmental conditions

External conditions	Temperature:	<input type="text" value="5"/>	°C	Relative Humidity:	<input type="text" value="95"/>	%
Internal conditions	Temperature:	<input type="text" value="15"/>	°C	Relative Humidity:	<input type="text" value="65"/>	%

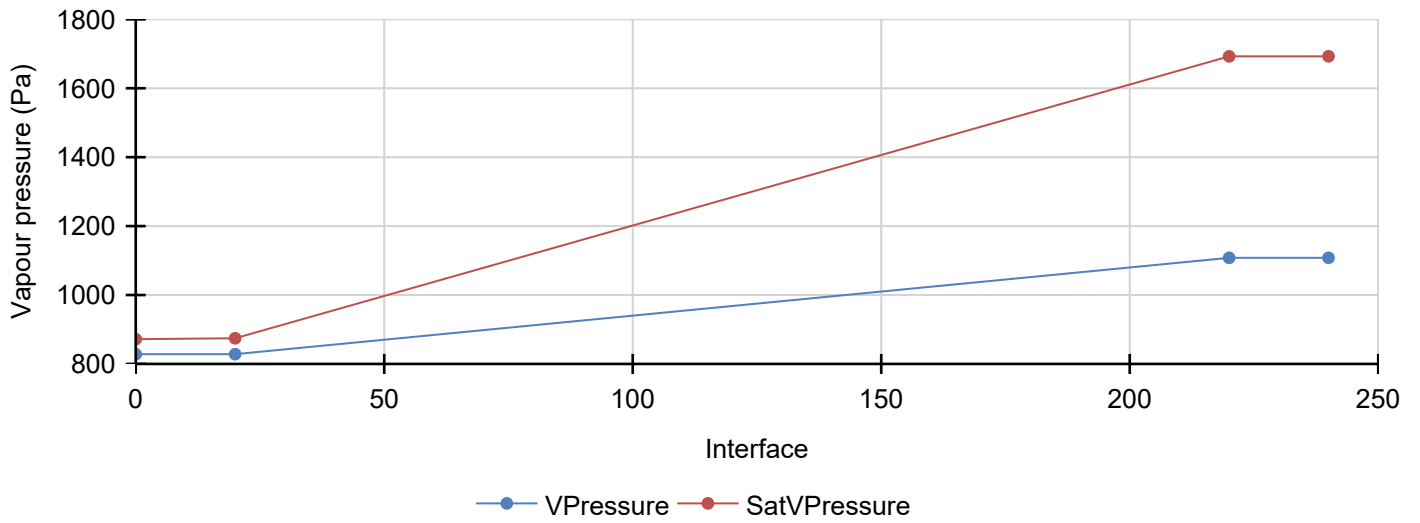
Table of layers

Layer	Thickness mm	Thermal conduct. W/m.K	Thermal resistance m ² .K/W	Cumulative thermal resistance m ² .K/W	Vapour resistivity GN.s/kg.m	Vapour resistance GN.s/kg.m	Cumulative vapour resistance GN.s/kg.m
External surface	-	0.0000	0.0400	0.0400	0.0	0.00	0.00
1.Celotex XR4000	200.0	0.0220	9.0909	9.1309	0.000	300.00	300.00
Internal surface	-	0.0000	0.1000	9.1309	0.0	0.00	300.00

Vapour pressure table

Interface - between layers	Interface temp. °C	Vapour pressure Pa	Satur. vapour pressure Pa	Dew point °C	Cond. rate g/m ² h	Cond. rate 60 days g/m ² h	Cond. risk Y/N
External surface	5.00	828.3	871.9	4.27	0.00	0.00	No
1. External surface / Celotex XR4000	5.04	828.3	874.5	4.3	0.00	0.00	No
Celotex XR4000 / Internal surface	14.89	1107.9	1692.6	8.5	0.00	0.00	No
Internal surface	15.00	1107.9	1692.6	8.48	0.00	0.00	No

CONDENSATION RISK ANALYSIS



Interface temperature / Dew point graphical representation

