

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

Wall Cavity Wall

Wall Type: Standard Wall

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	Brick, outer leaf						
	Main construction	100	0.7700	0.1299	82.81		
	Main construction	100	0.9407	0.1063	17.19		
Layer 2	Standard cavity						
	Main construction	25	0.1389	0.1800	100.00		
	Corrections - Cavity Unventilated, Emissivity: Normal						
Layer 3	Celotex GA4000						
	Main construction	75	0.0220	3.4091	100.00	30	1400
	Corrections - Air Gap: Level 1, Fasteners: None or plastic						
Layer 4	Celcon Hi-Seven - Normal - Trad joint 10mm						
	Main construction	100	0.1900	0.5263	93.18		
	Main construction	100	0.8803	0.1136	6.82		
Layer 5	airspace/plaster dabs						
	Main construction	15	0.0882	0.1700	80.00		
	Main construction	15	0.0882	0.1700	20.00		
	Corrections - Cavity Unventilated, Emissivity: Normal						
Layer 6	Celotex PL4065 [77.5mm]						
	Main construction	77.5	0.0258	3.0000	100.00	30	1400
	Corrections - Air Gap: Level 1, Fasteners: None or plastic						
Int surface				0.1300			

Total resistance: Upper limit = 7.552 m² K/W Lower limit = 7.476 m² K/W Average = 7.514 m² K/W
 Total correction = 0.0037 m² K/W U-value (unrounded) = 0.13 W/m² K

Unheated space: None

Total thickness: 393 mm

U-value: 0.13 W/m² K

Kappa: 0.00 kJ/m² K

CONDENSATION RISK ANALYSIS

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Wall - Cavity Wall

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"/>	%

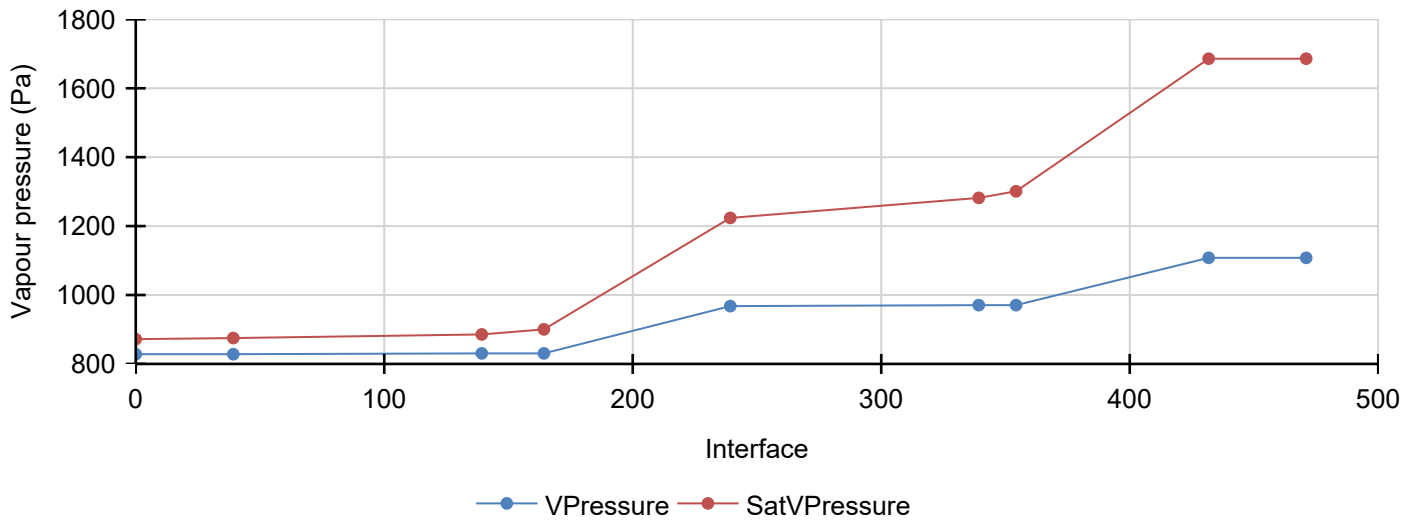
Table of layers

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.Brick, outer leaf	100.0	0.7700	0.1299	0.1699	50.0	5.00	5.00
2.Standard cavity	25.0	0.0000	0.1800	0.3499	0.0	0.00	5.00
3.Celotex GA4000	75.0	0.0220	3.4091	3.7590	0.000	300.00	305.00
4.Celcon Hi-Seven - Normal - Trad joint 10mm	100.0	0.1900	0.5263	4.2853	60.0	6.00	311.00
5.airspace/plaster dabs	15.0	0.0000	0.1700	4.4553	0.0	0.00	311.00
6.Celotex PL4065 [77.5mm]	77.5	0.0000	3.0000	7.4553	0.000	300.00	611.00
Internal surface	-	0.0000	0.1300	7.4553	0.0	0.00	611.00

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 / Brick, outer leaf	5.05	828.3	875.1	4.3	0.00	0.00	No
2. Brick, outer leaf / Standard cavity	5.22	830.6	885.6	4.3	0.00	0.00	No
3. Standard cavity / Celotex GA4000	5.46	830.6	900.3	4.3	0.00	0.00	No
4. Celotex GA4000 / Celcon Hi-Seven - Normal - Trad joint 10mm	9.96	967.8	1223.7	6.5	0.00	0.00	No
5. Celcon Hi-Seven - Normal - Trad joint 10mm / airspace/plaster dabs	10.65	970.6	1281.8	6.5	0.00	0.00	No
6. airspace/plaster dabs / Celotex PL4065 [77.5mm]	10.87	970.6	1301.0	6.5	0.00	0.00	No
Celotex PL4065 [77.5mm] / Internal surface	14.83	1107.9	1685.7	8.5	0.00	0.00	No
Internal surface	15.00	1107.9	1685.7	8.48	0.00	0.00	No

CONDENSATION RISK ANALYSIS



Interface temperature / Dew point graphical representation

