



Documentation of the component

Thermal transmittance (U-value) according to BS EN ISO 6946

Source: **Corals Catalogue 2014 - External walls**

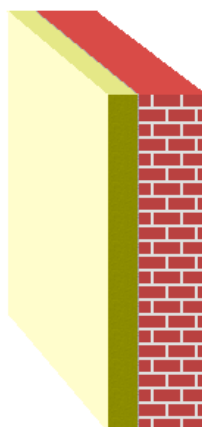
Component: **rwcm3830-Lakehouse-49-72 Greenwood REDArt**

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Assignment: External wall

	Manufacturer	Name	Thickness [m], number	Lambda [W/(mK)]	Q	R [m²K/W]
	Rse					0.0400
<input checked="" type="checkbox"/>	1	Own catalogue	REDArt Silicone Finish	0.0015	0.300	0.0050
<input checked="" type="checkbox"/>	2	Own catalogue	REDArt FS Mortar 1	0.0050	0.300	0.0167
<input checked="" type="checkbox"/>	3	Own catalogue	REDArt External Wall DD Slab	0.1000	0.036	2.7778
	Fixings	Plastic insulation anchors No./m²:	7/m²	0.500	D	-
	Fixings	equivalent diameter: 0.01 m / alpha: 0.800				
	Air gaps	Level 0: dU'' = 0.00 W/(m²K)				
<input checked="" type="checkbox"/>	4	Own catalogue	REDArt Adhesive Mortar	0.0050	0.300	0.0167
<input checked="" type="checkbox"/>	5	Generic Building Materials	Brick inner leaf & Mortar inner leaf (f = 0.173)	0.2250	0.615	0.3657
	Rsi					0.1300
0.3365						

$$R_T = R_{si} + \sum R_i + R_{se} = 3.35 \text{ m}^2\text{K/W}$$

Correction to U-value for	according to	delta U [W/(m²K)]
Mechanical fasteners	BS EN ISO 6946 Annex D	0.000
Air gaps	BS EN ISO 6946 Annex D	0.000
		0.000

$$U = 1/R_T + \sum \Delta U = 0.30 \text{ W/(m}^2\text{K)}$$

- Q .. The physical values of the building materials has been graded by their level of quality. These 5 levels are the following
- A** .. A: Data is entered and validated by the manufacturer or supplier. Data is continuously tested by 3rd party.
 - B** .. B: Data is entered and validated by the manufacturer or supplier. Data is certified by 3rd party
 - C** .. C: Data is entered and validated by the manufacturer or supplier.
 - D** .. D: Information is entered by BuildDesk without special agreement with the manufacturer, supplier or others.
 - E** .. E: Information is entered by the user of the BuildDesk software without special agreement with the manufacturer, supplier or others.

$$U_{\max} = 0.30 \text{ W/(m}^2\text{K)}$$

$$U = 0.30 \text{ W/(m}^2\text{K)} \quad R_T = 3.35 \text{ m}^2\text{K/W}$$

Source of U_{max} value: England and Wales Approved Document L1A 2010 Tab 2 Dwellings New

Calculated with BuildDesk 3.4.5



Documentation of the component

Heat capacity

Source: **Corals Catalogue 2014 - External walls**

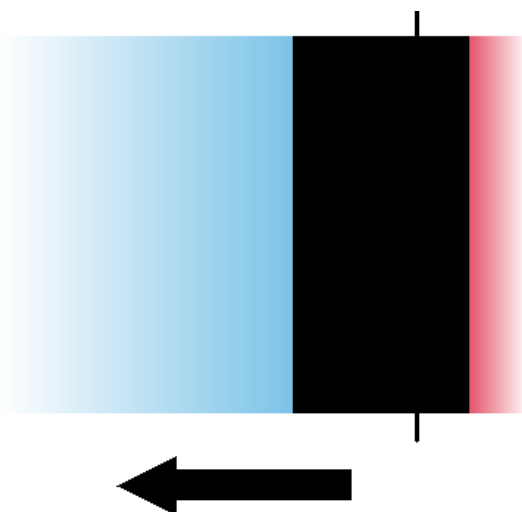
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The list of materials shown below may differ from those in the U-value calculation printout. Only material layers which are used in the heat capacity calculation are listed.

Single material layers shown in the U-value calculation printout may be separated to meet the exclusion criteria:

- A .. The total thickness of the layers exceed 0.1 m.
- B .. The mid point in the construction is reached.

For insulation layers the following criteria applies:

- C .. An insulating layer is reached (defined as $\lambda \leq 0.08 \text{ W/(mK)}$).

Name	Thickness [m]	lambda [W/(mK)]	Q	Thermal capacity [kJ/(kgK)]	Q	Density [kg/m³]	Q	Thermal mass kJ/(m²K)	Criteria Exclusion
End of calculation - Cold									
1 REDArt Silicone Finish	0.0015	0.300	E	1.40	E	1250.0	E	2.6	A, -, C
2 REDArt FS Mortar 1	0.0050	0.300	E	1.40	E	1250.0	E	8.7	A, -, C
3 REDArt External Wall DD Slab	0.1000	0.036	E	1.03	E	120.0	E	0.0	A, -, C
4 REDArt Adhesive Mortar	0.0050	0.300	E	1.40	E	1250.0	E	8.7	A, -, -
5 Brick inner leaf & Mortar inner leaf (f = 0.173)	0.1250	0.615	D	0.80	D	1700.0	D	170.0	A, -, -
5 Brick inner leaf & Mortar inner leaf (f = 0.173)	0.1000	0.615	D	0.80	D	1700.0	D	136.0	-, -, -
Start of calculation - Warm									
0.3365								136.0	

Heat capacity = 136.0 kJ/(m²K)

The following exclusion criteria apply:

- A .. The total thickness of the layers exceed 0.1 m.
- C .. An insulating layer is reached (defined as $\lambda \leq 0.08 \text{ W/(mK)}$).

Q .. The physical values of the building materials has been graded by their level of quality. These 5 levels are the following

- A** .. A: Data is entered and validated by the manufacturer or supplier. Data is continuously tested by 3rd party.
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