



Software: Stroma U-value Calculator - Version 0.92
 Date Printed: 10/02/2023 10:33
 Construction Type: Floor - Beam & Block floor - Pippin Barn
 Calculation Method: BS EN ISO 6946 / BS EN ISO 13370

Floor Construction

No	Description	Main Element			Bridging Element		
		Thickness	λ	R-value	λ	R-value	Fraction
-	Internal Surface Resistance	-	-	0.17	-	-	-
1	Screed (1200)	75	0.41	0.182927	-	-	-
2	XPS 100 (100mm)	100	0.038	2.631579	-	-	-
3	XPS 100 (100mm)	100	0.038	2.631579	-	-	-
4	Floorblock (100 mm)	100	0.12	0.8333333	1.13	0.088	0.12
5	Underfloor Resistance	0	-	0.17	-	-	-
		$\Sigma=375\text{mm}$		$\Sigma=6.619418$			

Resistances

Lower Limit	Upper Limit	Average
6.201	6.52	6.36 m ² K/W

Soil Properties

Perimeter	61m
Area	176m ²
Wall Thickness	300mm
Ground Type - Default $\lambda=$	2W/mK
Rse	0.04
Resistance on solum Rg	0m ² K/W
The height of the floor above external ground level	0.2m
Depth of underfloor space below ground	0.2m
U-value of walls	1.5W/m ² K
Mean wind speed	5m/s
Wind shielding factor	0.05
Ventilation openings per metre length	0.0015m ² /m

Floor U-value Corrections

Corrective Description	Correction Value
Vertical Edge Insulation	-0.012

Average Temperature - Underfloor Space

Internal Temperature	18°C
External Temperature	6°C
Average Temperature in Underfloor Space	7.82°C

Floor U-value

U _g - U-value of the Ground	0.693
Total U-value Corrections - Applied to U _g	-0.012
U _f - U-value of the Floor Corrected	0.681
U _f - U-value of the Floor	0.157
U _x - U-value for Ventilation Equivalent	0.198
U-value	0.133
U-value rounded	0.13 W/m ² K



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 Construction Type: Wall - Timber frame wall - Pippin Barn
 Calculation Method: BS EN ISO 6946

Wall Construction

No	Description	Main Element			Bridging Element		
		Thickness	λ	R-value	λ	R-value	Fraction
-	Internal Surface Resistance	-	-	0.13	-	-	-
1	Plaster (Lightweight) (3 mm)	3	0.18	0.016667	-	-	-
2	Gyproc WallBoard (15 mm)	15	0.19	0.078947	-	-	-
3	Service void	25	-	0.44	0.13	0.192	0.125
4	OSB	11	0.13	0.084615	-	-	-
5	Warmcell (300mm)	300	0.038	7.894737	0.13	2.308	0.125
6	OSB	11	0.13	0.084615	-	-	-
-	External Surface Resistance	-	-	0.04	-	-	-
		$\Sigma=365\text{mm}$		$\Sigma=8.769582$			

Resistances

Lower Limit	Upper Limit	Average
6.874	7.152	7.013 m ² K/W

Wall U-value Corrections

No Correction Values

Wall U-value

U-value	0.143
U-value rounded	0.14 W/m ² K



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 Construction Type: Roof - Sloped roof - Pippin Barn
 Calculation Method: BS EN ISO 6946

Roof Construction

No	Description	Main Element			Bridging Element		
		Thickness	λ	R-value	λ	R-value	Fraction
-	Internal Surface Resistance	-	-	0.1	-	-	-
1	Plaster (Lightweight)	3	0.18	0.016667	-	-	-
2	Gyproc WallBoard (12.5 mm)	12.5	0.19	0.065789	-	-	-
3	Service void (25mm)	25	-	0.34	0.13	0.192	0.09
4	OSB (11mm)	11	0.13	0.084615	-	-	-
5	Warmcel 300 (300 mm)	300	0.038	7.894737	0.13	2.308	0.09
10	OSB (11mm)	11	0.13	0.084615	-	-	-
-	External Surface Resistance	-	-	0.04	-	-	-
		$\Sigma=362.5\text{mm}$		$\Sigma=8.626424$			

Resistances

Lower Limit	Upper Limit	Average
7.192	7.385	7.289 m ² K/W

Roof U-value Corrections

No Correction Values

Roof U-value

U-value	0.137
U-value rounded	0.14 W/m ² K



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 Construction Type: Roof - Flat roof - Pippin Barn
 Calculation Method: BS EN ISO 6946

Roof Construction

No	Description	Main Element			Bridging Element		
		Thickness	λ	R-value	λ	R-value	Fraction
-	Internal Surface Resistance	-	-	0.1	-	-	-
1	Plaster (Lightweight)	3	0.18	0.016667	-	-	-
2	Gyproc WallBoard (12.5 mm)	12.5	0.19	0.065789	-	-	-
3	Thermafleece Cosywool (25mm)	25	0.039	0.641026	0.13	0.192	0.09
4	OSB (11mm)	11	0.13	0.084615	-	-	-
5	Warmcel 300 (145 mm)	145	0.038	3.815789	0.13	1.115	0.09
6	OSB (11mm)	11	0.13	0.084615	-	-	-
7	Woodfibre Insulation (50 mm)	50	0.048	1.041667	-	-	-
-	External Surface Resistance	-	-	0.04	-	-	-
		$\Sigma=257.5\text{mm}$		$\Sigma=5.890168$			

Resistances

Lower Limit	Upper Limit	Average
5.096	5.427	5.261 m ² K/W

Roof U-value Corrections

No Correction Values

Roof U-value

U-value	0.19
U-value rounded	0.19 W/m ² K