U-Value Calculator Results

02 December 2021

Mark Payne

110600

Dear Mark Payne,

Thank you for using the Kingspan Insulation U-Value Calculator.

The full specification for the construction you have selected and the result of your calculation are on the next page.

To purchase the insulation suggested by the calculation please visit kingspaninsulation.co.uk/stockists to find your nearest supplier.

Product information can be found on our website kingspaninsulation.co.uk, and provides more detailed information on construction build ups, sitework and installation guidance.

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CERTIFICATE CS/1004-2
U Value Competency Scheme

Project ID : Online
Structure element : Solid Ground floor
Description : Solid ground floor (insulation beneath screed / concrete slab)
File reference : 1Q136E49F6.FCF

Calculated 'U' value = 0.24W/m²K (Calculated in accordance with BS EN ISO 13370:2007)

Condensation risk has been assessed up to and including Level 4 Humidity Class (dwellings with high occupancy) within UK worst case environmental conditions.

Element Description	Element Thickness (mm)	Thermal Conductivity (W/mK)	Thermal Resistance (m²K/W)	Mean T (K)	Delta T (K)
Inside surface	-	-	0.170	92.66	0.98
SAND CEMENT SCREED	65.0	1.400	0.046	92.03	0.27
POLYTHENE SEPARATION LAYER	0.5	-	0.001	91.90	0.01
KOOLTHERM K103	40.0	0.018	2.222	85.48	.2.83
CONCRETE 1:2:4 2000 kg/m³	150.0	1.400	0.107	78.75	0.62
DAMP PROOF MEMBRANE	0.9	-	0.001	78.44	0.01
Ground	-	-	0.040	78.32	0.23

Ground Floor Details

Calculation method : Perimeter / Area (As defined in BRE IP 3/90)
Perimeter : 0.00m
Area : 0.00m²
P/A : 0.300
Floor type : Solid floor
Earth conductivity : 2.000W/mK
Soil type : Sand or Gravel

Detailed U-value Calculation Results

Total resistance of solid ground floor
$R_T = (R_{upper} + R_{lower}) / 2 = (2.588 + 2.588) / 2 = 2.588$ m²K/W

(Correction for mechanical fasteners, Delta Uf = 0.0000W/m²K | Correction for air gaps, Delta Ug = 0.0000W/m²K)
(Alpha 0.0 m^{-1} | Fasteners per square metre 0.0000)
(Fasteners cross-sectional area 0.000 mm² | Thermal conductivity of fastener 0.00 W/mK)

(Delta Uf + Delta Ug) is less than 3% of (1 / Rt) so U = (1 / Rt) = 0.24W/m²K

Not all insulation thicknesses shown may currently be stocked, so please check with Kingspan Insulation Customer Service Department on 01544 388601.

CERTIFICATE CS/1004-2
U Value Competency Scheme

Project ID : Online
Structure element : Solid Ground floor
Description : Solid ground floor (insulation beneath screed / concrete slab)
File reference : 1Q136E49F6.FCF
Humidity Class: 4 - Dwellings with high occupancy, sport halls, kitchens, canteens; buildings heated with unflued gas heaters
Location: 1c Scotland West

Condensation calculations performed in accordance with BS5250: 2011

Month	Int (°C)	Int (%RH)	Ext/Grd (°C)	Ext/Grd (%RH)
Jan	20.0	69.5	-0.2/2.8	90.5/100.0
Feb	20.0	68.7	-0.2/2.4	87.5/100.0
Mar	20.0	71.9	1.5/2.4	85.5/100.0
Apr	20.0	69.7	3.7/3.3	83.0/100.0
May	20.0	68.0	6.7/4.4	81.5/100.0
Jun	20.0	68.6	9.7/5.9	82.5/100.0
Jul	20.0	70.4	11.2/7.4	84.5/100.0
Aug	20.0	71.4	10.9/8.1	86.5/100.0
Sep	20.0	71.1	8.7/8.0	88.0/100.0
Oct	20.0	71.2	6.1/6.9	89.0/100.0
Nov	20.0	72.9	2.1/5.6	90.0/100.0
Dec	20.0	74.2	0.5/3.6	91.0/100.0

Gc = Monthly moisture accumulation per area at an interface
Ma = Accumulated moisture content per area at an interface

Peak accumulated moisture content per area at interface (Ma) = 0.00 Kg/m²
Annual moisture accumulation (Ma) = 0.00 Kg/m²

Scale 1 : 5