CERTIFICATE CS/1004-1
U Value Competency Scheme

Project ID : Garden Flat 19 Frognal Lane London, NW3 7DB
Structure element : Solid Ground floor
Description : Solid ground floor (insulation beneath screed / concrete slab)
File reference : 1D121M762D.FCF

Calculated 'U' value = 0.32W/m²K (Calculated in accordance with BS EN ISO 13370:2007)

Element Description	Element Thickness (mm)	Thermal Conductivity (W/mK)	Thermal Resistance (m²K/W)	Mean T (K)	Delta T (K)
Inside surface	-	-	0.170	92.32	1.66
SAND CEMENT SCREED	65.0	1.400	0.046	91.26	0.45
POLYTHENE SEPARATION LAYER	0.5	-	0.001	91.03	0.01
KINGSPAN THERMAFLOOR TF70	20.0	0.022	0.909	86.59	8.87
DAMP PROOF MEMBRANE	0.9	-	0.001	82.15	0.01
CONCRETE 1:2:4 2000 kg/m³	150.0	1.400	0.107	81.62	1.05
Ground	-	-	0.040	80.90	0.39

Ground Floor Details

Calculation method : Perimeter / Area (As defined in BRE IP 3/90)
Perimeter : 3.46m
Area : 10.67m²
P/A : 0.324
Floor type : Solid floor
Earth conductivity : 1.500W/mK
Soil type : Clay or Silt

Detailed U-value Calculation Results

Total resistance of solid ground floor
$R_T = (R_{upper} + R_{lower}) / 2 = (1.275 + 1.275) / 2 = 1.275$ 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) = 0.32W/m²K

For further information on the specified products, e.g. literature or specification clauses, please follows the links below:-

Thermafloor TF70

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File reference : 1D121M762D.FCF
Humidity Class: 4 - Dwellings with high occupancy, sport halls, kitchens, canteens; buildings heated with unflued gas heaters
Location: 5a England SE & Central South

Condensation calculations performed in accordance with BS5250: 2011

Month	Int (°C)	Int (%RH)	Ext/Grd (°C)	Ext/Grd (%RH)
Jan	20.0	73.2	1.5/5.0	90.0/100.0
Feb	20.0	72.0	1.8/4.5	86.5/100.0
Mar	20.0	70.0	3.7/4.7	84.0/100.0
Apr	20.0	68.0	6.0/5.6	81.0/100.0
May	20.0	67.8	9.3/6.8	81.0/100.0
Jun	20.0	68.6	12.4/8.4	80.0/100.0
Jul	20.0	70.8	14.5/10.0	80.5/100.0
Aug	20.0	71.8	14.1/11.0	82.5/100.0
Sep	20.0	71.5	11.8/10.8	85.5/100.0
Oct	20.0	71.1	8.7/9.7	88.0/100.0
Nov	20.0	71.7	4.4/8.1	89.5/100.0
Dec	20.0	72.8	2.5/6.0	90.5/100.0

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