Calculations

Construction type: **Floors** | Walls | Pitched Roof | Flat Roof

Floor Type: Ground floor

Floor Sub-Type: Solid concrete - Timber floating floor

PA Ratio ?: 0.5

Insulation Thickness: - 60mm 70mm +

☐ Tick here if you would like to receive the BIM Object for this construction build-up. ?

Email me this →

For the purposes of these calculations, the soil has been assumed to be sand or gravel.

It is not recommended that two layers of Kingspan Thermafloor TF70 be used under a floating floor and therefore U-values have been calculated with a maximum insulation thickness of 150mm.

U

U-value

0.24

W/m²·K

0.12 — 0.24

Click here to view construction build-up

Construction build-up includes:

18mm tongue & grooved chipboard
vapour control layer
Kingspan Thermafloor TF70
150mm concrete slab
damp proof membrane
hardcore.

See website for more details

Kingspan Thermafloor TF70

CERTIFICATE CS/1004-1
U Value Competency Scheme

Project ID : Online
Structure element : Solid Ground floor
Description : Solid ground floor (insulation beneath timber boards / chipboard)
File reference : 1E11AA4736.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	92.75	0.80
CHIPBOARD	18.0	0.150	0.120	92.06	0.57
POLYTHENE SEPARATION LAYER	0.5	-	0.001	91.78	0.00
KINGSPAN THERMAFLOOR TF70	60.0	0.022	2.727	85.34	.2.87
CONCRETE 1:2:4 2000 kg/m³	150.0	1.400	0.107	78.65	0.51
DAMP PROOF MEMBRANE	0.9	-	0.001	78.40	0.00
Ground	-	-	0.040	78.30	0.19

Ground Floor Details

Calculation method : Perimeter / Area (As defined in BRE IP 3/90)
Perimeter : 0.00m
Area : 0.00m²
P/A : 0.500
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
$R_T = (R_{upper} + R_{lower}) / 2 = (3.166 + 3.166) / 2 = 3.166$ 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

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

Thermafloor TF70

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

Whilst the information and/or specification contained herein is to the best of our knowledge true and accurate we specifically exclude any liability for errors, omissions or otherwise arising therefrom. Details, practices, principles, values and calculations should be verified as to accuracy and suitability for the required purpose for use.