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Expanding Possibilities

Styrene Packaging & Insulation Ltd

U-Value Calculation

By BRE U-value Calculator version 2.04a

Project Ref:	Downley Drive Apartments – 29 07 24	**Date Issued:**	29/07/2024	**By:**	JL
Element Type:	Suspended beam-and-block floor				
Calculation Method:	BS EN ISO 6946, BS EN ISO 13370				

Floor Build-up:

Layer	d (mm)	l layer	l bridge	Fraction	R layer	R bridge	Description
					0.170		Rsi
1	75	1.150			0.065		Sand/cement screed
2	150	0.030			5.000		Insulation - Plustherm
3	100	0.180	1.350	0.137	0.556	0.074	AAC (600 kg/m³)/concrete beams
					0.170		Rs (underfloor)
	325 mm				5.961		

Total resistance: Upper limit: 5.890 Lower limit: 5.699 Ratio: 1.033 Average: 5.794 m²K/W
U-value of floor construction: 0.173 W/m²K

Ground Parameters:

Perimeter P:	136.00 m	Wall thickness:	300 mm
Area A:	770.00 m²	Ground type:	Clay/silt (l = 1.5 W/m·K)
P/A:	0.177	Rse:	0.04 m²K/W

Resistance on solum Rg: 0.000 m²K/W
Depth of underfloor space below ground: 0.150 m
Floor height above ground: 0.150 m
U-value of walls above ground (but below inside floor level): 1.50 W/m²K
Mean wind speed: 5.00 m/s
Wind shielding factor: 0.050
Ventilation openings per metre length: 0.0015 m²/m

Average temperature in underfloor space for Ti = 18.0 and Te = 6.0: 9.53°C

U-value Corrections:

U-value for ground (Ug):
Ug without edge insulation 0.3378
DU for vertical edge insulation: -0.0118 (depth 75 mm, thickness 25 mm, l 0.030)
Ug with edge insulation 0.3260
U-value of floor deck (Uf) 0.173
Ventilation equivalent U-value (Ux) 0.088

Overall U-value:

U-value overall 0.122
U-value (rounded) 0.12 W/m²K

Any calculations provided by SPI Ltd are subject to guidance only and should be checked by a qualified professional