

Project Information

Reference
 Date 2 October 2012
 Project EWI Existing Construction 2.1 u value

Construction Type

Element : Wall - Proposed 80mm PIR

Internal surface emissivity : High External surface emissivity : High

	Thickness (mm)	Thermal Conductivity (W/mK)	Thermal Resistance (m ² K/W)	Vapour Resistivity (MNs/gm)	Vapour Resistance (MNs/g)
Outside surface resistance	-	-	0.040	-	-
PIR	80.0	0.025	3.200	450.00	36.00
Brick, Dense, external	301.0	1.099	0.274	80.00	24.08
Hard Plaster	13.0	0.510	0.025	50.00	0.65
Inside surface resistance	-	-	0.130	-	-

U-value = 0.27W/m²K

U-value, Combined Method : 0.27W/m²K (upper/lower limit 3.677 / 3.676m²K/W, dUf 0.0000, dUg 0.0000, dUp0.0000, dUr0.0000, dUrc0.0000)

(Correction for mechanical fasteners, Delta Uf = 0.000W/m²K)

(Correction for air gaps, Delta Ug = 0.000W/m²K)

(Based on the combined method for determining U-values of structures containing repeating thermal bridges)

Condensation Risk Analysis (no account taken of thermal bridges)

3 - Dwellings with low occupancy

Jan (worst)	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
20.0C 60.0%	20.0C 59.5%	20.0C 58.3%	20.0C 57.3%	20.0C 59.5%	20.0C 62.4%	20.0C 65.6%	20.0C 66.8%	20.0C 64.6%	20.0C 62.7%	20.0C 60.3%	20.0C 60.3%
3.1C 85.0%	3.1C 83.5%	5.2C 79.5%	7.6C 75.5%	10.6C 76.0%	14.0C 74.5%	15.8C 75.0%	15.4C 77.5%	13.2C 79.5%	10.0C 83.0%	6.0C 84.0%	4.2C 85.5%

	Interface Temp. °C	Dewpoint Temp. °C	Vapour Pressure (kPa)	Saturated V.P. (kPa)	Worst Cond. (g/m ²)	Peak Buildup (g/m ²)	Condensation
1 Outside surface resistance							
2 PIR	3.3	0.8	0.65	0.77			No
3 Brick, Dense, external	18.0	8.3	1.10	2.07			No
4 Hard Plaster	19.3	11.9	1.39	2.24			No
5 Inside surface resistance	19.4	12.0	1.40	2.25			No

Worst case internal / external conditions for graph : 20.0°C @ 60.0%RH / 3.1°C @ 85.0%RH

