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DCM DEVELOPMENTS

DESIGN, CONSTRUCTION & MANAGEMENT

Unit 1, Ardnehue Farm, Bennekerry, Co. Carlow.

17/0441 - U-value Analysis - External Walls

JOB No.	17/0441
CLIENT	ANN McDONALD
ADDRESS	KILABBEN, MAGANEY, LAOIS

EXTENSION TO EXISTING DWELLING:

350mm wide cavity wall, rendered externally - DEAP analysis = U of 0.16 W/m2k Max

layer/surface	thickness (m)	conductivity (W/mK)	resistance (m2K/W)	comments
external surface			0.040	
external render	0.019	0.570	0.033	
concrete block	0.100	1.330	0.075	
air cavity			0.000	
Full fill cavity insulation	0.150	0.021	7.143	Cavity Therm Full Fill
concrete block	0.100	1.300	0.077	
kooltherm k18 board	0.025	0.021	1.190	37.50 mm k18 board
plasterboard (lightweight)	0.013	0.190	0.066	
internal surface			0.130	
Totals			8.755	
U-Value of Construction (W/m2K)			0.11	OK



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17/0441 - U-value Analysis - Ground Floor

JOB No.	17/0441
CLIENT	ANN McDONALD
ADDRESS	KILABBEN, MAGANEY, LAOIS

EXTENSION TO EXISTING DWELLING:

150mm deep insulation below a 150mm concrete slab on grade - DEAP analysis = U of 0.12 W/m2k Max

layer/surface	thickness (m)	conductivity (W/mK)	resistance (m2K/W)	comments
75 screed topping	0.075	0.410	0.183	
Rigid floor insulation	0.150	0.020	7.500	Kingspan K3 insulation
150 concrete slab on grade	0.150	2.300	0.065	
Totals	0.275		7.748	
U-Value of Construction (W/m2K)			0.13	FAILS

Note: Design will be OK once the final figure is adjusted for the floor perimeter/area ratio.



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17/0441 - U-value Analysis - Flat Ceilings

JOB No.	17/0441
CLIENT	ANN McDONALD
ADDRESS	KILABBEN, MAGANEY, LAOIS

EXTENSION TO EXISTING DWELLING:

350mm Mineral wool or equivalent - DEAP analysis = U of 0.13 W/m2k Max

layer/surface	thickness (m)	conductivity (W/mK)	resistance (m2K/W)	comments
Saglan Gold/Wool Fibre Insulation	0.350	0.044	7.955	Rockwool Insulation
plasterboard (lightweight)	0.013	0.180	0.069	
Totals			8.024	
U-Value of Construction (W/m2K)			0.12	OK



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17/0441 - U-value Analysis - Sloped Ceilings

JOB No.	17/0441
CLIENT	ANN McDONALD
ADDRESS	KILABBEN, MAGANEY, LAOIS

EXTENSION TO EXISTING DWELLING:

120mm rigid insulation between rafters and warm board underenath - DEAP analysis = U of 0.13 W/m2k Max

layer/surface	thickness (m)	conductivity (W/mK)	resistance (m2K/W)	comments
120mm thick rigid insulation in rafters	0.120	0.020	6.000	Kingspan K7
air cavity			0.180	
kooltherm k18 board	0.050	0.020	2.500	62.50 mm k18 board
plasterboard (lightweight)	0.013	0.180	0.069	
Total Resistance			8.749	
U-Value of Construction (W/m2K)			0.11	OK



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EXTENSION TO EXISTING DWELLING:

120mm rigid insulation between rafters and warm board underenath - DEAP analysis = U of 0.13 W/m2k Max

layer/surface	thickness (m)	conductivity (W/mK)	resistance (m2K/W)	comments
120mm thick rigid insulation in rafters	0.100	0.020	5.000	Kingspan K7
air cavity			0.180	
kooltherm k18 board	0.050	0.020	2.500	62.50 mm k18 board
plasterboard (lightweight)	0.013	0.180	0.069	
Total Resistance			7.749	
U-Value of Construction (W/m2K)			0.13	OK

