

U-value calculation for roof WITH PLC 250C (125mm)

S. No.	Description of Materials used in Exterior Walls	Density kg/m ³	Thickness (m)	Thermal conductivity k- value (W/mK)	Thermal Resistivity r-value (mk/W)	Thermal resistance R-value (m ² k/w)
1	Room temp. inside	-	-	-	-	0.166
2	RCC Slab	2400	0.1500	2.500	0.400	0.060
3	Politerm 250	266	0.1250	0.094	10.638	1.330
4	Bituminious Primer	-	0.0010	0.170	5.882	0.006
5	Torch applied Bitumen Membrane	-	0.0040	0.170	5.882	0.024
6	Gypsum Board False Ceiling	950	0.0120	0.160	6.250	0.075
7	Surface temp. outside	-	-	-	-	0.059
	1/U in m²K/W				=	1.72
	Air to air heat transfer coefficient U in W/m ² K				=	0.58

Note:

No precise data about the thermal and humidity characteristics of the existing Roof materials were available. therefore the computation was based on empirical or average values according to technical regulations.