

**U-value calculation for Car Park Ceiling WITH PLC 250C (100mm)**

| S. No. | Description of Materials used in Exterior Walls                     | Density kg/m <sup>3</sup> | Thickness (m) | Thermal conductivity k- value (W/mK) | Thermal Resistivity r-value (mk/W) | Thermal resistance R-value (m <sup>2</sup> k/w) |
|--------|---|---------------------------|---------------|--------------------------------------|------------------------------------|---|
| 1      | Interior Thermal Resistance   | -                         | -             | -                                    | -                                  | 0.121   |
| 2      | Ceramic Tiles   | 2300                      | 0.005         | 1.300                                | 0.769                              | 0.004   |
| 3      | Tile Glue   | 1800                      | 0.005         | 0.750                                | 1.333                              | 0.007   |
| 4      | Tile Bed Mortar   | 1800                      | 0.020         | 0.750                                | 1.333                              | 0.027   |
| 5      | <b>Politerm 250</b>   | <b>266</b>                | <b>0.100</b>  | <b>0.094</b>                         | <b>10.638</b>                      | <b>1.064</b>                                    |
| 6      | RCC Slab  | 2400                      | 0.200         | 2.500                                | 0.400                              | 0.080   |
| 7      | Exterior Thermal Resistance   | -                         | -             | -                                    | -                                  | 0.059   |
|        | <b>1/U in m<sup>2</sup>K/W</b>                                      |                           |               |                                      | =                                  | <b>1.36</b>                                     |
|        | Air to air heat transfer coefficient <b>U</b> in W/m <sup>2</sup> K |                           |               |                                      | =                                  | <b>0.73</b>                                     |

**Note:**

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