Thermal calculation of RHTS roof hatch

Using EN ISO 6946:2017: A method for calculating the thermal resistance and thermal transmittance of building components

Summary

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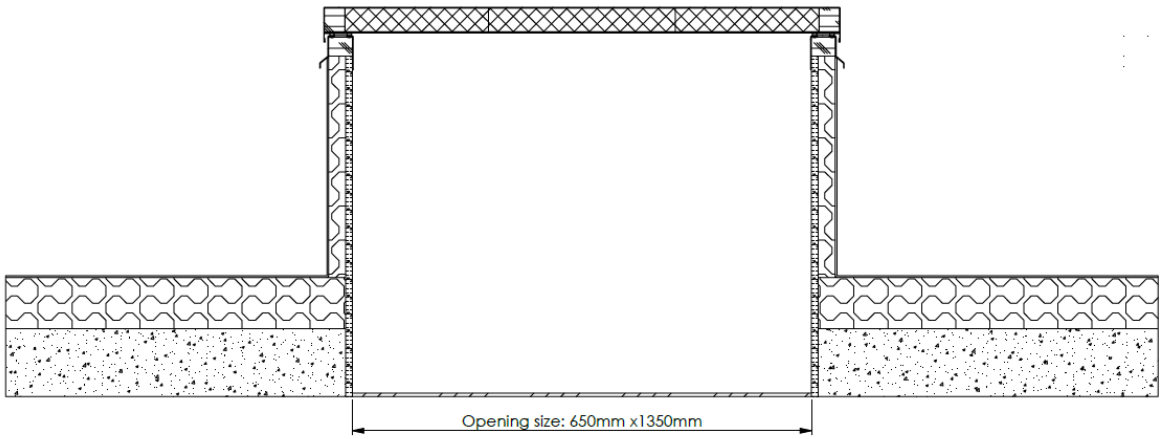

4. Figure Hatch in a mounted condition.

4.3. Determination of the resulting U-value

By summing the thermal resistances calculated for each zone on a per-unit-area basis, the equivalent thermal resistance of the structure can be determined. Since, in the developed model, the heat flow travels in the same direction and over the same path length in every zone, the parts with different thermal properties contribute to the total thermal resistance on a per-unit-area basis.

We then add the standard internal and external surface thermal resistance values (Rsi and Rse) to the area-weighted R-value to obtain the total thermal resistance of the structure (Rtot). The final heat transfer coefficient (U) is the reciprocal of this total resistance.

The results obtained are as follows:

$$\mathbf{R_{tot} = 10{,}418\ m^2K/W}$$

$$\mathbf{U_{tot} = 0{,}095\ W/m^2k}$$