Demand file

In the commonly used architectural design, when we choose materials or thickness, we should take into account the ability of the wall to hinder the heat, and can not make the indoor temperature not livable. To get a wall that meets the insulation standard, we must complete the reasonable design of the material and thickness before starting the construction, calculate the U value of the thermal conductivity coefficient of the wall, and then evaluate whether the wall according to the reference value of the national standard of the wall meets the standard, so as to start the construction in reality. Whether it is the ground building wall or the cabin or the aircraft cabin, the U value of the wall should be considered to create the appropriate indoor temperature for the residents. The software is designed to calculate the U-value of the target wall, which is a U-value calculator. The calculation of the U value is the operation of the formula and the support of the scientific method:
(1) Calculation of thermal resistance value (R value):

$$R = \frac{d}{\lambda}$$

Where, R represents the thermal resistance in m^2K/W. λ Represents the thermal conductivity, given in W/mK. The d represents the thickness of the material in m.
(2) Calculation of thermal transmittance value (U value):

$$U = \frac{\lambda}{d} = \frac{1}{R}$$

Where U is the thermal transmittance in m^2K/W. λ shows the thermal conductivity in W/mK. The d represents the thickness of the material in m.

Thermal tissue (R-value) is defined as the thermal resistance of a material to prevent heat per unit area at a specified temperature. It is often used in construction engineering to evaluate the relative insulation ability of material or system; the thermal conductivity coefficient (U value) is used to measure thermal conductivity, and the ability to allow heat through per unit area. The lower the U value, the better the insulation of the material.

The use of the software mainly lies in the selection of the wall materials and the setting of the wall thickness. After the output, the U value of the wall will be obtained, and the national standard value will be given as a reference.

At present, the representative of similar products in the market is JMatPro. JMatPro is based on the powerful and stable thermodynamic model and thermodynamic data as the core technology and computing basis. The quality of this software has been widely praised, which is worthy of our research and learning.