

(4) For Type IV, the thermal conductivity coefficient of concrete solid bricks is 1.62 W/(m·K), the average thermal resistance R of the wall is 0.129 m²·K/W, and the average heat transfer coefficient K is 3.588 W/m²·K;

(5) The error between the calculated thermal resistance R and the heat transfer coefficient K of the wall is not more than 5%, in line with the *Energy Efficiency Test Standard for Residential Buildings* (JGJ/T132-2009). It can be seen from Figure 10, Figure 11 and Table 5 that among the four types of walls, the Type I has the lowest heat transfer coefficient K and the best thermal insulation performance; the Type IV has the highest thermal coefficient K and the worst thermal insulation performance.

There are many factors affecting the thermal performance of the wall, namely, the choice of materials, the way of masonry, and the different constructions, which all affect the thermal performance of the wall to varying degrees. Therefore, in the design, it is necessary to comprehensively consider various factors, and enhance the thermal insulation performance of the wall for improving the living environment, reducing the building energy consumption, and achieving the goal of ecological energy conservation. This is also the significance of this study.

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