

A systematic review of thermal insulation performance of hollow bricks as a function of hollow geometry

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ABSTRACT

The amount of energy needed for HVAC (Heating, Ventilation and Air Conditioning) systems in the building depends on a variety of factors, and one of the most important is the conduction load through the building envelope. Due to its higher strength and large cavities, concrete hollow blocks have become more common in several countries. The thermal conductivity, thermal resistance and thermal transmittance (U value) of various complex hollow brick geometries are reviewed on the basis of modelling and simulation studies. Various techniques for improving thermal properties (K, R and U values) of hollow brick are addressed in order to increase building energy efficiency. Large hollow brick cavities provide higher transmittance values, which indirectly improve the overall heat transfer, radiation and insulation efficiency.

KEYWORDS

Building elements; Energy saving; Hollow bricks; Hollow geometry; Thermal insulation

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