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Analysis of heat balance in a Light Steel Frame residence with different insulating thickness

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Abstract

Sustainability and efficiency in buildings are concepts that have been recently growing and developing. Its application in several buildings has become mandatory in many countries around the world. One of the major challenges faced by sustainable buildings is the achievement of satisfactory levels in efficiency terms, without negatively impacting the economics. The residential construction sector has great potential for energy savings and is also where building strategies need to be carefully planned, as they seek to meet the needs of residents not only in the present, but also over time. Residential design must be done thoroughly and must include the analysis of all climate variables involved. In order to verify a residential building envelope behaviour regarding energy and thermal efficiency, this paper intended to evaluate through software Design Builder®, walls and roofs with a rock wool layer, placed in a Light Steel Frame (LSF) house.

Keywords

Insulating materials, Light Steel Frame, Heat gains, Heat losses