

Polyurethane foam incorporated with phase change materials for thermal insulation application

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The aim of this study was to enhance the thermal comfort properties of rigid polyurethane foams (PUFs) using phase change materials (PCMs) (5-15 wt %), to contribute to the reduction of the use of non-renewable resources and increase energy savings. It is an immense challenge when adding PCM to PUFs is to combine the low conductivity of PUFs whilst taking advantage of the heat released or absorbed by PCMs to achieve efficient thermal regulation. In this study rigid polyurethane/PCM composites foam was synthesized using one shot method. In order to determine both structural and thermal properties, polyurethane composite foam were examined by FT-IR, SEM, DSC analysis.