

MODELLING OF THE THERMAL CONDUCTIVITY PROPERTY OF A NEWLY DEVELOPED THERMO-REGULATED BRICK

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ABSTRACT

The work modelling of the thermal conductivity property of a newly developed thermo regulated brick has been extensively carried out. The brick was developed from anthill clay and cement and the various properties of the bricks were investigated, however, for this particular work the property of interest was the thermal conductivity. The thermal conductivity data was used for developing a prediction model using linear adaptive filter. This model was used with variables from the previous work and the model produced results similar to the desired output. A plot of the prediction values and the actual thermal conductivity values on the same graph showed the two curves lying in the same position (tight-fit) clearly indicating the accuracy of the prediction model. This was also confirmed by the performance evaluation of the developed model. The mean square error was $1.2441E-023$ which indicated negligible variation from the actual thermal conductivity values.

Keywords: Thermal conductivity; Newly developed; Brick; Thermoregulation; Modeling.