

(54) Title of the invention : THERMAL CONDUCTIVITY OF INSULATION MATERIALS ON HEAT TRANSFER THROUGH THE BUILDING ENVELOPE

<p>(51) International classification :F16L0059020000, E04B0001760000, C04B0111000000, G01N0025180000, E04D0013160000</p> <p>(86) International Application No :PCT// Filing Date :01/01/1900</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number :NA Filing Date :NA</p> <p>(62) Divisional to Application Number :NA Filing Date :NA</p>	<p>(71)Name of Applicant : 1)Dr. S. PRAKASH Address of Applicant :PROFESSOR DEPARTMENT OF MECHANICAL ENGINEERING PBR VISVODAYA INSTITUTE OF TECHNOLOGY AND SCIENCE UDAYAGIRI RD, VADDI PALEM, KAVALI, ANDHRA PRADESH 524201 -----</p> <p>2)Dr. D. PAVAN KUMAR 3)Mr. M. KARTHIK 4)Dr. P TAMILCHELVAN 5)Dr. P. PUGALENTHI 6)Ms. K.PAVITHRA Name of Applicant : NA Address of Applicant : NA</p> <p>(72)Name of Inventor : 1)Dr. S. PRAKASH Address of Applicant :PROFESSOR DEPARTMENT OF MECHANICAL ENGINEERING PBR VISVODAYA INSTITUTE OF TECHNOLOGY AND SCIENCE UDAYAGIRI RD, VADDI PALEM, KAVALI, ANDHRA PRADESH 524201 -----</p> <p>2)Dr. D. PAVAN KUMAR Address of Applicant :ASSISTANT PROFESSOR (ADHOC) DEPARTMENT OF CIVIL ENGINEERING JAWAHAR LAL NEHRU TECHNOLOGICAL UNIVERSITY COLLEGE OF ENGINEERING, SIR MOKSHAGUNDAM VISHVESHVARIAH ROAD,ANANTAPUR (A), ANANTAPUR, ANDHRA PRADESH 515001 -----</p> <p>3)Mr. M. KARTHIK Address of Applicant :ASSISTANT PROFESSOR DEPARTMENT OF MECHANICAL ENGINEERING SRI SHAKTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY (AUTONOMOUS) SRI SHAKTHI NAGAR, L & T BY - PASS, CHINNIYAMPALAYAM POST COIMBATORE 641062, TAMIL NADU -----</p> <p>4)Dr. P TAMILCHELVAN Address of Applicant :PROFESSOR DEPARTMENT OF AGRICULTURE ENGINEERING PAAVAI ENGINEERING COLLEGE PAAVAI NAGAR, PACHAL, NAMAKKAL ,TAMIL NADU 637001 -----</p> <p>5)Dr. P. PUGALENTHI Address of Applicant :ASSOCIATE PROFESSOR DEPARTMENT OF MECHANICAL ENGINEERING PAAVAI ENGINEERING COLLEGE (AUTONOMOUS) NH – 44(FORMERLY NH-7), PAAVAI NAGAR, PACHAL, NAMAKKAL, TAMIL NADU 637018 -----</p> <p>6)Ms. K.PAVITHRA Address of Applicant :ASSISTANT PROFESSOR DEPARTMENT OF CIVIL ENGINEERING SRI SHAKTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY (AUTONOMOUS) SRI SHAKTHI NAGAR, L & T BY - PASS, CHINNIYAMPALAYAM POST COIMBATORE 641062, TAMIL NADU -----</p>
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(57) Abstract :

Thermal conductivity and temperature limit are among the most fundamental properties of a building insulation in ascertaining thermal execution, which were exposed to change when uncovered to temperatures variety in help. Disregarding the temperature reliance of these material properties can result in under and over assessments of structures energy utilizes and the relating gear estimating. To get more practical conductivity upsides of insulation materials, in this invention, thermal conductivity tests were led at different mean temperatures. Likewise, the thermal obstruction of most thermal insulation materials relies upon the working temperature, the area of the insulation layer inside the get together framework, and the successful temperature. Without a doubt, experimental proof shows that the change in the polystyrene insulation thermal conductivity with temperature at the mid-thickness of the insulation material during the daytime can be extremely huge. At high temperatures, in the request of 100 °C, normally experienced in the rooftop insulations of structures in blistering environments, the rate increment of k-values comparative with k24 for divider and rooftop can be pretty much as high as 9.4% and 20%, respectively. This change influences the cooling load estimation while working at temperatures surpassing 24 °C. This present invention assesses the impact of changes in the conductivity of polystyrene insulation material, as a capacity of the working temperature, on the cooling load estimation expected by the structure, and in this way the estimating of the thermal, ventilating, and cooling apparatus.

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