

FABRICATION & HEAT TRANSFER ANALYSIS OF COMPOSITE SLAB BY USING SOFT MATERIALS

A Project report submitted

In partial fulfillment of the requirements for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

MECHANICAL ENGINEERING

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CERTIFICATE

This is to certify that project work is entitled **“FABRICATION & HEAT TRANSFER ANALYSIS OF COMPOSITE SLAB BY USING SOFT MATERIALS”** is a bonafide record done by A. SUDHEERKUMAR(15811A0303), A. HARI KRISHNA(15811A0308), A. DURGAMANIKANTA(15811A0306), G.N. DURGAPRASAD(15811A0344) students of final year **B.Tech** in the Department of **Mechanical Engineering**, Avanti Institute of Engineering and Technology, Visakhapatnam. This work was done for the fulfillment of the requirements of the award of **Bachelor of Technology** during the year 2018-2019.

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PROJECT GUIDE


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ABSTRACT

Fabrication of composite slab by using soft materials and then performing the experimental heat transfer analysis on the composite slab and comparing this result with the analysis done on hard materials.

Soft materials used in this composite slab experimental analysis are wood slab, cement slab and ceramic tile slab. Arrange the plates in proper fashion (symmetrical) on both sides of the heater plates. See that plates are symmetrically arranged on both sides of the heater plates. Operate the hand press properly to ensure perfect contact between the plates. Close the box by cover sheet to achieve steady environmental conditions. Switch on the supply of heater. Give known steady input to the heater with the help of dimmerstat. Keep initially 100 V for 20 minutes almost and then reduce to 80 V till steady state is reached so that steady state can be reached within less time. Check the input to the heater with selector switch, voltmeter & ammeter. Note down the temperature every 10 minutes till a steady condition is reached.

Calculate the thermal resistance of the material based on the steady state condition readings. These materials are placed in the experimental setup and readings are taken at a steady state and also varying the voltage using dimmerstat or variac and these readings are used to calculate the overall heat transfer of the composite slab.

By using these soft materials in the composite slab apparatus, the overall heat transfer of this composite slab can be improved.