

DETERMINATION OF HEAT TRANSFER RATE THROUGH LAGGED PIPE BY USING M.S & G.I PIPES

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 to certify that project work is entitled **“DETERMINATION OF HEAT TRANSFER RATE THROUGH LAGGED PIPE BY USING M.S & G.I PIPES”** is a bonafide record done by **A. VAMSI KRISHNA (15811A0302), A. VENKATESH (15811A0307), B. SAI KUMAR (15811A0312), I. KASI NAGA SAI (15811A0349)** students of final year **B.Tech** in the department of **Mechanical Engineering**, Avanthi 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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Abstract

Thermal conductivity is basically the property of a material that allows the flow of heat through the material. It is also known as the coefficient of conductivity, because it is given as a number that can be used in equations. The thermal conductivity of any particular material, it indicates how well it allows heat to flow, is therefore also a good indicator of how well the material insulates, or blocks the flow of heat. Objectives of this paper are to determine the thermal conductivity of the given insulating material by using lagged pipe apparatus (Asbestos and Sawdust). Lagging of pipes is required to prevent leakages of heat.

The Apparatus is designed to study the lagging phenomenon. The apparatus consists of three concentric pipes, at the axis of which a heating element is positioned. Two types of lagging materials are filled up, one between innermost and middle pipe and other between middle and outermost pipe. Temperature across the lagging material, i.e., temperature of pipe walls for radial outward heat flow are measured by the thermocouples. The heater can be supplied with different heat inputs with the help of dimmer stat so that characteristics of lagged pipe can be studied at different heat flow rates.