

HIGHER TECHNICAL INSTITUTE

MECHANICAL ENGINEERING DEPARTMENT

DIPLOMA PROJECT

**INVESTIGATION OF THE OPTIMUM ECONOMIC
THICKNESS OF INSULATION OF A HOT WATER TANK**

by

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INVESTIGATION OF THE OPTIMUM ECONOMIC THICKNESS OF INSULATION
OF A HOT WATER TANK

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Dedicated to my friends all over the world

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INTRODUCTION

Everything around us involves various type of energy . Even ourselves, the human body is a heat engine which burns food and oxygen and converts the energy released into work and heat . Of course all the objects require energy to be manufactured and energy to keep them running .

It is estimated that when a country has a high standard of living, results in high energy consumption which means increasing excessive costs .

As Cyprus is a developing country then it can be easy said that a high rate of energy is consumed .A part of this energy is consumed in the form of electricity or heat . Most of the demand arises from domestic, comercial, industrial and transport users and virtually all the processes involved in supplying this energy have one thing in common . They are quite inefficient in their conversion of primary energy to an end use .

In the solar energy industry great emphasis has been placed on the development of effective solar energy systems so to avoid any excessive energy .A strategy which is used is to slow the heat transfer which results to lessen the heat loss . The method is by increasing the use of insulation that will give a cost mean effective thermal insulation . This cost effective thermal insulation is the optimum economic thickness of insulation which is the objective of this project .

This will be done by preparing a guide in the form of tables giving the economic thickness of insulation theoretically .

Therefore this project will deal with aspecial case that will move further into theory of energy conservation and consequently money saving