

A

SOIL STABILIZATION USING SHREDDED TYRES

Project report submitted by:

GEORGHIOS KARAYIANNIS

This project is dedicated
to my parents

in partial fulfillment of the award
of the Diploma of Technician Engineer
of the Higher Technical Institute,

Project Supervisor: Mr.Nicos Kathidjotes
Lecturer in Civil Eng. Dept.H.T.I.

External Assessor: Dr.Andreas Papasozomenos
Civil Engineer in Public Work Dept.

Type or project: Individual

JUNE 1989



Summary

This project can be included to the research that is carried out by engineers in order to find a cheap way of soil stabilization.

It deals with the usage of shredded tyres, cut in two specific sizes, as a stabilizing material.

Tyres are cut in square pieces. Two main groups of 2 cm's and 4 cm's edges are cut. These pieces of tyres were combined with the soil in proportions of 5% and 10% w/w respectively.

In the project the strength of the four resulting combinations are found and they are compared with the strength of the soil itself.

In order to achieve this, a number of C.B.R. tests were carried out.

CONTENTS

	<u>Page</u>
SUMMARY	1
INTRODUCTION	2
<u>CHAPTER 1</u>	4
1.0 PROJECTS' PROCEDURE FOLLOWED	5
1.1 Selection of parent material	5
1.2 Cutting of tyres into specified sizes	5
1.3 Preparation of the soil tyres samples and determination of the required values for the C.B.R. tests.	7
1.4 C.B.R. tests	7
<u>CHAPTER 2</u>	9
2.0 EXPERIMENTS' ANALYSIS AND PROCEDURES	10
2.1 Determination of particle size distribution by sieving.	10
2.2 Standard compaction test: Proctor Test	14
2.3 C.B.R. Test	18
<u>CHAPTER 3</u>	26
3.0 RESULTS	
3.1 Aggregate grading analysis table	27
3.2 Proctor Test tables	30
3.3 California Bearing Ratio tables	36
<u>CHAPTER 4</u>	60
4.0 CONCLUSIONS	61
REFERENCES	65