

**FINAL YEAR PROJECT REPORT  
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**CEMENT STABILIZED SOIL : PROPERTY  
CHARACTERIZATION**

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## **ABSTRACT**

The project aimed at finding the effects of cement on the basic properties of weak soil such as plasticity, moisture content, specific gravity, etc. The soil was mixed with cement in various proportions and the changes in the soil properties were investigated.

An experimental investigation was carried out in the laboratory on the soil : cement mixes with varying proportions. The soil : cement were measured by weight and the properties of the soil : cement were investigated in terms of plasticity, compaction and grading.

From the investigation it was found that the increase in cement content increased the optimum water content of the soil. However the plasticity values decreased with the increase in cement content. Finally conclusions were drawn and further work was suggested in the future.

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# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 GENERAL**

The term “soil stabilization” may be defined as the alteration of the properties of an existing soil to meet the specified engineering requirements.

Stabilization of soils with cement means the mixture of pulverized soil, cement and water, and the compaction of this mix, producing a new building material, soil cement which, due to its strength, favourable deformation characteristics, resistance to water, thermal, and frost effects, etc., is well adaptable as a road pavement, road and building foundation, canal lining, etc.

Effects of stabilization on soil properties :

- a) Strength - increase in strength and thus stability and bearing capacity.
- b) The volume stability - to control the swell-shrink characteristics caused by moisture changes.
- c) Durability - to increase the resistance to erosion, weathering or traffic usage.
- d) Permeability - to reduce permeability and hence the passage of water through the stabilized.