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ANALYSIS OF INDEX PROPERTIES OF EXPANSIVE SOIL THROUGH SUITABLE ADMIXTURES

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ABSTRACT

Expansive soils are a worldwide problem that poses several challenges for civil engineers. Sub grade strength is mostly affected by thickness of pavement, in Highway design. They are considered a potential natural hazard, which can cause extensive damage to structures if not adequately treated. Such soils swell when given an access to water and shrink when they dry out. One of the most effective and economical method is addition of stabilizing agents such as lime or fly ash to expansive soil. The geo-engineering properties such as Atterberg limits, grain size distribution, compaction characteristics, unconfined compressive strength and of virgin clay and treated with fly ash were evaluated and reported.

Keywords- Black cotton soil, Fly ash, marble dust powder

I. INTRODUCTION

All civil engineering works such as the construction of highway, building structure, dam and other structure have a strong relationship with soil. All those structures need a strong layer of soil to make sure the structure are strong and stable. The weakness and failure of soil may capable make the structure which builds above of it become weak and collapse or fail. Therefore, the proper analysis of soil is necessary to ensure that these structures remain safe and free endue settling and collapse. A comprehensive knowledge of the soil in specific location may also be important in order contexts, including the use of soil as a source of construction material. In order to obtain the knowledge, soil sample must be collected from a required site and tested it to evaluate the engineering properties of soil.

II. HEADINGS

1. INTRODUCTION

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1.2 Problem Statement

1.3 Objectives of the study

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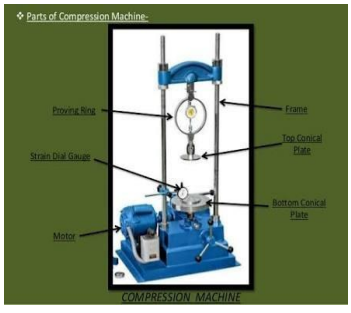
LL :	Liquid Limit
PL :	Plastic Limit
PI :	Plasticity Index
SI :	Shrinkage Index
SL :	Shrinkage Limit
IS :	Indian Standard

LIST OF FIGURES

Expansive soil

Marble Dust Powder

Fly Ash



\ Compression Machine

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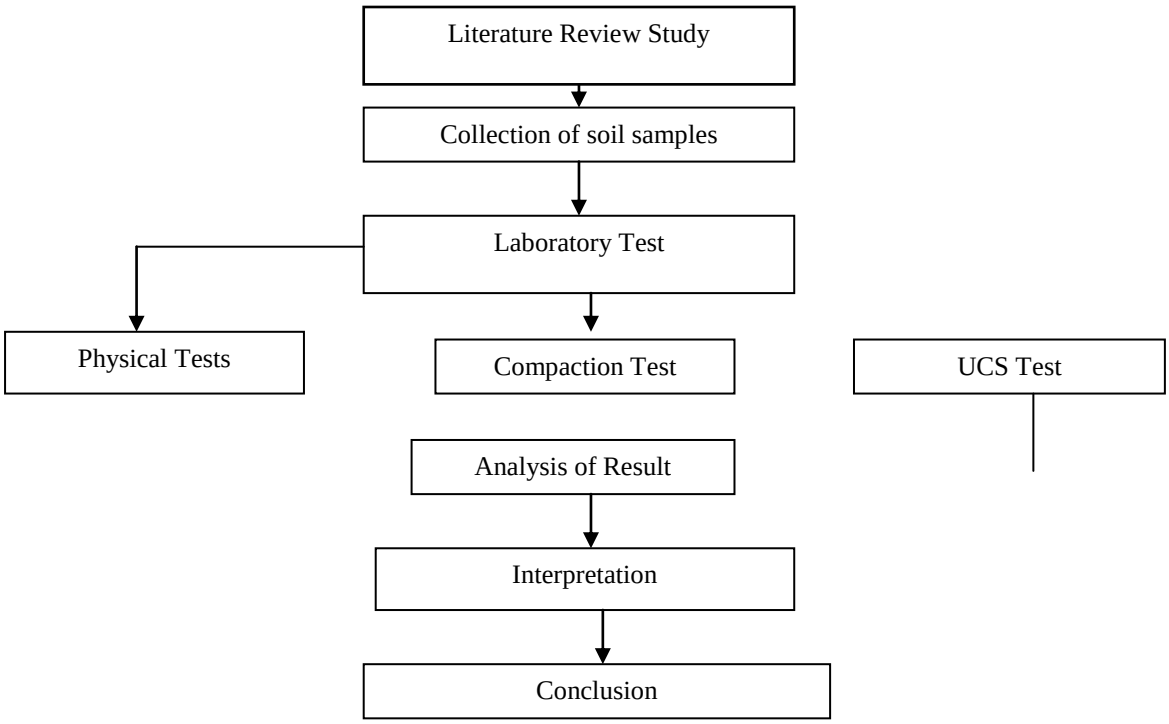
Geotechnical Properties of Soil

Parameters	BlackcottoSoil
Specific gravity	2.7
Liquid Limit %	60
Plastic Limit %	25.6
Optimum moisture content %	24
Maximum Dry Density (gm/cc)	1.3
Colour	Greyish black
Dominant Clay mineral	Montmorillonite(70%)
Other Clay mineral	Kaolinite(30%)

METHODOLOGY



V.CONCLUSION

The above work will be carried out in laboratory conditions. Practical feasibility at site has to be studied. The research was to find the various properties of expansive soil. Other than the above admixture used, use different types of admixtures from different industries to study their effect on expansive soil.

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Limitations of Expansive Soil

Expansive soil contains fine clay particles. This property induses a great affinity to water of such type of soil. Alternate swelling and shrinkage in extensive limit during wet and dry process respectively results cracks in soil without any warning.

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