

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY,
BELAGAVI**



**A PROJECT REPORT ON
STABILIZATION OF BLACK COTTON SOIL USING
ALKALINE PROPERTIES**

Submitted in partial fulfillment for the award of Degree of,

**BACHELOR OF ENGINEERING
IN
CIVIL ENGINEERING**

By

Ms. ASHWINI P C	4AL17CV005
Ms. ASHWINI S C	4AL17CV006
Mr. ASPAR A K	4AL17CV007
Mr. DHANUSH H K	4AL17CV016

Under the guidance of
Mrs. KAVYASHREE A
ASSISSTANT PROFESSOR



ALVA'S
Education Foundation

**DEPARTMENT OF CIVIL ENGINEERING
ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY
MOODBIDRI – 574225, KARNATAKA
2020-2021**

ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY

MIJAR, MOOBBIDRE, DK-574225

KARNATAKA

DEPARTMENT OF CIVIL ENGINEERING




CERTIFICATE

Certified that the project work entitled **“STABILIZATION OF BLACK COTTON SOIL USING ALKALINE PROPERTIES”** is a bonafide work carried out by

Ms. ASHWINI P C	4AL17CV005
Ms. ASHWINI S C	4AL17CV006
Mr. ASPAR A K	4AL17CV007
Mr. DHANUSH H K	4AL17CV016

Are bonafide students of Civil Engineering, Alva's Institute of Engineering and Technology in partial fulfillment of the award of **BACHELOR OF ENGINEERING in CIVIL ENGINEERING** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI** during the year 2020-2021. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the Bachelor of Engineering Degree.


Mrs. Kavyashree A

Project Guide


Dr. H. Ajith Hebbar

Dept. of Civil Engineering
Alva's Institute of Engineering & Technology
Mijar, Moodbidri - 574 225


Dr. Peter Fernandes

PRINCIPAL
Alva's Institute of Engg. & Technology
Mijar, MOOBBIDRI - 574 225, D.K.

SYNOPSIS

In developing like India due to the remarkable development in road infrastructure, Soil stabilization has become the major issue in construction activity. Stabilization is an unavoidable for the purpose of highway and runway construction, stabilization denotes improvement in both strength and durability which are related to performance. Stabilization is a method of processing available materials for the production of low cost road design and construction, the emphasis is definitely placed upon the effective utilization of waste by products like granulated blast furnace slag GGBS, with a view to decreasing the construction cost. The present investigation is to evaluate the compaction of stabilized black cotton soil using fine ground granulated blast furnace slag GGBS. A series of compaction test were carried out using mini compaction mould for different combination of soil along with ground granulated blast furnace slag (GGBS) mixtures. For stabilization of black cotton soil. Alkali activated solution prepared by combining sodium hydroxide (NaOH) with the sodium silicate solution (Na_2SiO_3). The Alkaline activation increases the strength of black cotton soil. In present study alkaline activation is done with the black cotton soil. The effect of alkaline activation on strength characteristic of Black cotton soil has been studied. The test result indicates that alkaline activation is very effective in stabilizing the soft soil.