



GEOTECHNICAL TESTING REPORT
ON STABILIZED SOIL CORE SAMPLES COLLECTED
FROM A ROAD PROJECT AT
KRISHNAPATNAM PORT COMPANY LIMITED, NELLORE

CONSULTANCY SERVICES
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Job No. 3380

INTRODUCTION

M/S Vishwa Samudra Engineering private Limited, Nellore with their technical partners M/S Avani Ecoprojects Private Limited, Hyderabad have executed 2.5 km road project at Krishnapatnam Port Company Limited, Nellore using an additive with brand name of StabilRoad. In this connection Sri Krishna Madhav Remella, Director of Avani Ecoprojects Private Limited, Hyderabad has requested the Geotechnical Engineering Division of National Institute of Technology – Warangal to test the stabilized soil core samples collected from the above project work for their compressive strength and water absorption.

DETAILS OF SAMPLES

Totally twelve number of core samples which were collected at different locations of the road executed were sent to the soil mechanics laboratory of the geotechnical engineering division for testing. The details of the samples along with identification numbers and location of collection are given in table 1.

Table 1: Details of supplied core samples

S. No.	Sample reference no.	Location of the core sample
1	R – 1/1	Road No. 1 @ 100 m chainage
2	R – 1/2	Road No. 1 @ 200 m chainage
3	R – 2/1	Road No. 2 @ 150 m chainage
4	R – 2/2	Road No. 2 @ 180 m chainage
5	R – 2/3	Road No. 2 @ 200 m chainage
6	R – 2/4	Road No. 2 @ 300 m chainage
7	R – 3/1	Road No. 3 @ 50 m chainage
8	R – 3/2	Road No. 3 @ 150 m chainage
9	R – 4/1	Road No. 4 @ 50 m chainage
10	BC – A/2	Conveyer Belt @ 50 m chainage
11	BC – 3/1	Conveyer Belt @ 100 m chainage
12	BC – 4/1.	Food Park @ 100 m chainage

The **Compressive** strength tests of the stabilized soil were conducted as per IS code of practice.

The photo of compressive strength testing is given in the figure below and results from the above tests are given in the following table 2.



Figure 1: Compressive strength testing of the stabilized soil core specimen

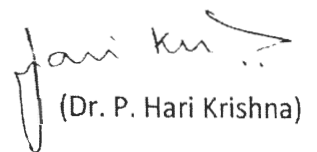
Table 2: Results of Compressive strength of the stabilized soil core samples

S. No	Location	Compressive strength (kg/cm ²)
1	R - 1/1	90.9
2	R - 1/2	90.9
3	R - 2/1	45.4
4	R - 2/2	61.7
5	R - 2/3	51.9
6	R - 2/4	45.4
7	R - 3/1	48.7
8	R - 3/2	51.9
9	R - 4/1	64.9
10	BC - A/2	55.1
11	BC - 3/1	61.7
12	BC - 4/2	48.7

OBSERVATIONS & RECOMMENDATIONS:

It can be observed that the uniaxial compressive strength of the stabilized soil specimens is varying between 45 to 90 kg/cm². These values are within the suggested range of 45 to 70 kg/cm² for cemented base courses as per IRC: 37 – 2012 with few specimens beyond this range. The water absorption of these specimens is ranging from 9% to 13%.

The cyclic swelling and shrinkage does not occur in this type of material as the water absorption is low and there are no signs of any disintegration of specimens when immersed in water even for four days. For any subsequent durability studied if required, the soils and chemical stabilizer can be sent to our soil mechanics laboratory of geotechnical engineering division, so that, the required test specimens as per standard procedure can be prepared and tested.


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