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Construction of Rigid Pavement by Slip form Paver

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Abstract: ***Road pavement plays important role on a highway road the primary junction of pavement is to transmit loads to the sub-base and underlying soil. There are mainly two types of pavement provided i.e. Rigid and Flexible pavement.***
However Rigid pavements have high flexural rigidity due to concrete slab and hence the pavement structure defects very little under loading , due to high modulus of elasticity of their surface course. In this project we selected study patch of 2km in the package 4 of Pune-Satara highway of rigid pavement by using "construction by slip form paver" equipment.
However, the rigid pavement construction by using slip form paver gives smooth road surface and also it reduces labor workmanship. It also reduces time limit for road pavement construction and provide a durable road pavement.

I. INTRODUCTION

We have selected study patch of 2 kilometers in the package 4 of Pune-Satara highway.
Pavements usually constructed using plain or unreinforced cement concrete slabs having high flexural strength. It serves as good and durable wearing surface as well as an effective and strong base course of highway pavement.
There are three methods of construction of cement concrete pavement which are:

1) Construction by slip form paver.
2) Construction by fixed form paver.
3) Construction by fixed form and labor oriented

Method of paving.
From these three methods we have selected the study on
"CONSTRUCTION BY SLIP FORM PAVER".

There are four layers in the construction of rigid pavement which are:

a) Sub grade
b) Granular sub-base. (GSB)
c) Dry lean concrete. (DLC)
d) Pavement quality control. (PQC)

Basically different operations involved in construction of cement concrete pavements slabs are:

- Spreading prepared concrete mix to desired thickness grade.
- Compacting.
- Finishing the surface to desired surface profiles.
- Texturing.
- Curing.
- Cutting of construction joint and longitudinal joints.

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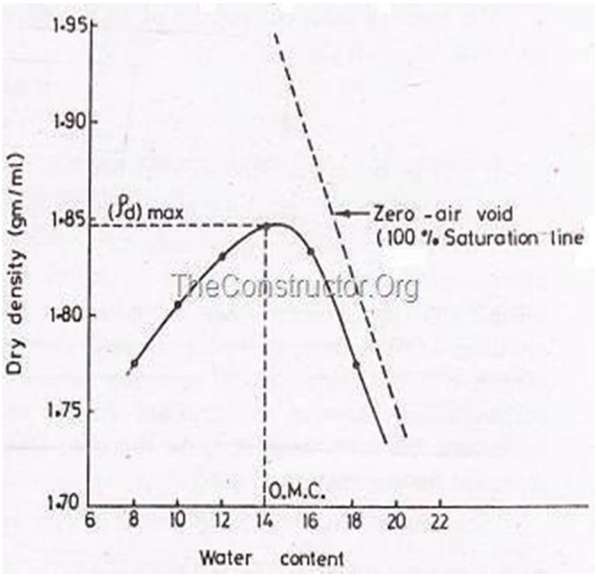
II. METHEODOLOGY

A. Test on Sand

Determine free swell index of soil
It is a test of soil and comes under soil mechanics tests (Is: 2720 (part 40) -1977)
Aim:- Determination of free swell index of soil
Apparatus:-
Is sieve 425 micron
Two 100 ml capacity flask
Stirrer /rod
Tray
Weighing balance

B. Procedure

Soil sample up to 500 gram is taken from desired site and kept in oven for 24 hours at (100-110 degree Celsius) so that sample becomes oven dried.
Then sample is sieved through 425 micron sieve and sample passed is taken.
Sample finer than 425 micron is taken in two flask of 100 ml capacity. 10 gram in quantity in each flask.
In first flask filled with 10gr.oven dried sample. Kerosene oil is added up to 100ml mark.
In second flask is also added distilled water is up to 100ml mark of flask. Then sample are stirred well by a stirrer to remove entrapped air in it.



III. RESULT

Maximum dry density (from plot) =2.060
Optimum water content (from plot) =7.30

IV. CONCLUSIONS

Slip form paver is a new technology in the construction of road pavement it is mainly used in the construction of rigid pavement as compared to the other machineries slip form paver is better in the working quality now a days slip form paver is used everywhere because it completes work rapidly slip form paver proves better machine and better technique in the construction of pavement it requires less man power and it is less time consuming in one day it cover 2km distance in an average so it proves very useful and durable machine In the construction of rigid pavement.

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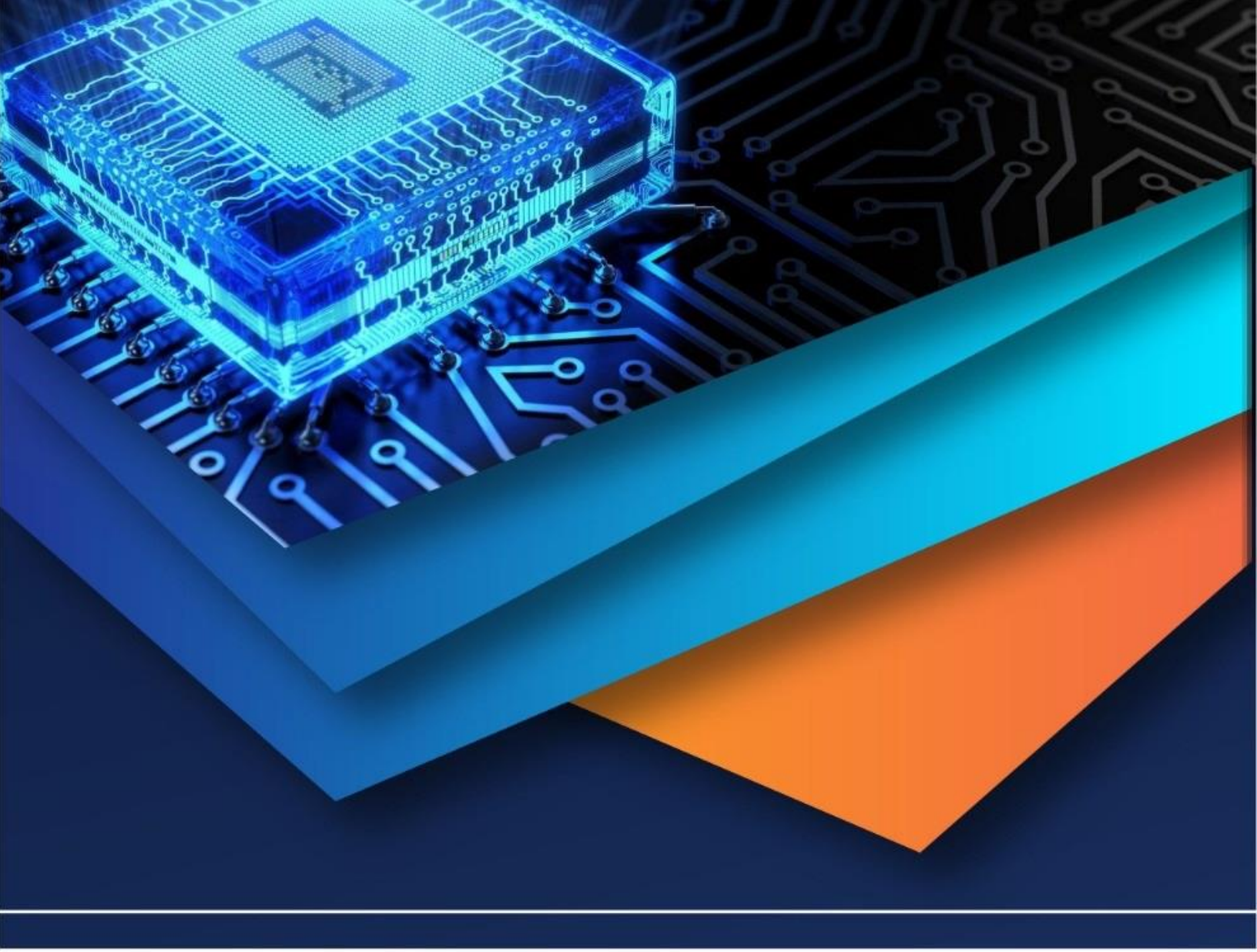

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