

EXPERIMENTAL INVESTIGATION ON FLEXIBLE PAVEMENTS, WITH VARIOUS SOILS

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ABSTRACT

The demand for the improved transportation facilities, for the growing population requires proper design of pavement. The idea behind this design is to lower the cost of construction, increase in life span, to meet all the demand of vehicular population and less maintenance cost. The choice of an adequate foundation soil is one of the problems in any construction project. So, soils are considered as the oldest and most complex construction materials by engineers. The main aim of this project is to design the flexible pavements on Moorum and black cotton soil, and the Design of Rural Roads and National Highways as per Indian Road Congress (IRC) specifications. The thickness of the pavement is obtained from design curves by conducting California Bearing Ratio test for soils of worst condition. The soil collected is tested in the laboratory for the index properties and designing is done which results in cracking of the surface therefore sand with different percentages namely 10%, 20%, 30% and 40% by the total weight, which reduces the cracks and increases the load bearing capacity. Comparisons are made in the pavement thickness with and without stabilizing the soil. It has been found out the effective utilization of the soils can be done by stabilization with some admixtures i.e., either by mechanical or chemical stabilization, there by resulting in decrease of the pavement thickness and making the construction cost economical.

KEYWORDS: Specific Gravity, Sieve Analysis, Atterberg Limits, Differential Free Swell Index, Compaction, California Bearing Ratio Test