

STABILIZATION OF LOCALLY AVAILABLE LATERITIC SOIL USING RBI GRADE-81 FOR HIGHWAY EMBANKMENT



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ABSTRACT

A good pavement is needed for the safe, comfortable and economical movement of traffic. If the in-situ soil has no adequate strength, either soil from other sites are to be used or the available soil has to be stabilized so that it attains sufficient strength to carry the traffic load. This study investigates the effect of using a new stabilization product, RBI Grade-81 on locally available lateritic soil. RBI Grade-81 is natural inorganic soil stabilizer supplied by Alchemist Technology Limited. RBI Grade-81 acts on soil to reduce voids between soil particles and minimize the thickness of adsorbed water layer absorbed water in the soil particles to achieve maximum compaction. RBI Grade-81 works by hydration reaction. Pore space is filled by crystalline growth. The reaction of RBI Grade-81 with the soil particles produces an inter-particle matrix that binds the soil particles together into a rigid mass. This binding of the soil particles, through both chemical bonds and frictional forces, serves to limit the pore volume of the created rigid stabilized soil system.

The objective of this study is to determine the engineering properties of locally available lateritic soil, to determine the change in the properties of soil with addition of different percentage of RBI Grade-81 and to find the optimum percentage of RBI Grade -81 required for the stabilization of lateritic soil.

Heavy Compaction, consistency Limits, UCS test and soaked CBR were conducted confirming to IS 2720 guidelines on stabilized soil samples at different percentage of RBI Grade-81, the detailed results of these tests are presented in the report. The optimum percentage of RBI Grade-81 required for effective stabilization of lateritic soil was found to be 6%.

The scope of investigation was to propose chemical stabilization for enhancing the engineering properties of locally available lateritic soil using RBI Grade-81. From the experimental investigation it can be concluded that RBI Grade-81 is effective chemical stabilizer and eco-friendly.