ABSTRACT

In the past there has been a surge in research of new materials to replace cement and lime which are the common stabilizers and improvers of sub base and sub grade. These materials include fly ash, rice husk ash to name but a few. Waste steel chippings also known as swarf are waste as a result of machining process during manufacturing of various steel sections. Swarf has been used as a replacement of smooth aggregates and sand in concrete but hasn't been practiced in road construction. Thus this project will look at the application of swarf in road construction as stabilizer in construction of sub base. Swarf has been proven to be successful in its application in concrete manufacture and thus the same can be reciprocated in road construction. Various percentages of RHA and swarf were added to the sample i.e. 5, 10, 15, 20 25 percentages of the materials and the following tests were done: Moisture content, sieve analysis (wet and dry sieve analysis), Compaction (heavy), CBR tests in order to find the suitability of the material as a sub base in road construction. The results were compared with the set standards in ROAD DESIGN MANUAL- PART III: MATERIALS AND PAVEMENT DESIGN FOR NEW ROADS. It was found out that the CBR values increased until 20%RHA+25%Swarf when it went on a slight decline. The increase in CBR as compared to the original CBR of 18 was as follows, 5.55%, 16.67%, 72.22%, 366.67%, 316.67%. The sample had no plasticity and thus was proven to be cohesionless.