

## **Characterization of Utilization of Industrial Waste By-Products for Construction of Low Volume Roads**

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**Abstract :** Black cotton soil is one of the major soil deposits in India becomes problematic because of its properties of higher degree of swelling and shrinkage. These Soils existing at a particular site may not be appropriate for construction of engineering structures. The present study made an attempt to enhance the geotechnical properties of a soil replaced with industrial waste like Lime waste (LW). For this soil samplings were done on Gudlavalleru village, Krishna district as per IRC recommendations. Soils are replaced with LW 5%, 10%, 15% and 20% to dry weight of soils. The performance of Lime Waste stabilized soils were evaluated using physical and strength performance tests namely; Plasticity index, Specific gravity, Free swell index, Compaction, California bearing ratio (CBR) and Unconfined compressive strength Test (UCC). These tests were conducted in order to evaluate the improvement in strength characteristics of the sub-grade soils. Hence using of such advanced materials in road construction can prove efficient in increasing the strength of soils and in turn reduce the project cost. From the results, it was observed that the basic tests carried out proved significant after the addition of Lime Waste.

**Keywords :** Black cotton Soil, Lime waste, Atterberg limits, Specific gravity, Free swell index, California bearing ratio, Un-Confined compressive strength, Standard proctor test.

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