

A STUDY ON BLACK COTTON - SHREDDED TYRES MIXTURE PROPERTIES

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ABSTRACT

One of the various problems which mankind faces in this century is the problem of waste disposal management. Since polymeric materials do not decompose easily, disposal of waste polymers is a serious environmental problem. Large amounts of rubbers are used as tyres for aero planes, trucks, cars etc. But after a long run, these tyres are not serviceable and discarded. Stockpiles of scrap tyres, whether in dumps or in recycling facilities, pose serious fire protection challenges to fire departments across the country. Major approach to solve this problem is the recycle and reuse of waste rubber tyres. Since highway construction requires large volume of materials, highway agencies have been encouraged to participate in the recycling effort. Shredded tyres are used in many civil engineering applications nowadays, because these tyres have properties like Lightweight, Low earth pressure, Good thermal insulation, Good drainage and etc. These Shredded tyres are used as Lightweight fill for highway embankments, retaining wall backfill etc.

Experimental work has been carried out in this area to find out the geotechnical characteristics of the black cotton soil and shredded tyres mixed with different percentages(5 and 25%) and sizes(15 and 30mm) to investigate the relative strength gain. The results showed that the compacted dry density reduced solely due to the lighter weight of the tyre, Permeability of the mixture increased, bearing ratio was maximum when 5% of 15mm shredded tyres are added to the soil

KEYWORDS: Black Cotton Soil, California Bearing Ratio Test, Compaction Test, Clay Soil, Shredded Tyres