

## Geo-Engineering Properties of Lime Stabilized Expansive Soil with Shredded Waste Tyre

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**Abstract :** The compaction properties, unconfined compressive strength (UCS), soaked California bearing ratio (CBR), hydraulic conductivity, and swelling pressure of lime stabilized expansive soil-shredded waste tyre mixes have been discussed in this paper. Shredded waste tyres, passing 4.75 mm Indian Standard (IS) sieve and retained on 75 $\mu$  IS sieve have been used in the experimental programme. First of all expansive soil-shredded waste tyre mixes were prepared by adding shredded waste tyre from 0 to 20% at an increment of 5%. Standard Proctor compaction, UCS and soaked CBR tests were conducted on these mixes. The optimum percentage of shredded waste tyre found out was 10%. In the second phase of the experiment, lime was added to sample having optimum percentage of expansive soil and shredded waste tyre from 2 to 6% at an increment of 1%. Compaction, UCS, soaked CBR, hydraulic conductivity, and swelling pressure tests were conducted on lime stabilized expansive soil-shredded waste tyre mixes. The optimum percentage of lime for stabilization was found out to be 5%. At the optimum percentage of lime the stabilized expansive soil-shredded waste tyre mix had increased strength, reduced hydraulic conductivity and swelling pressure.

**Keywords :** expansive soil, hydraulic conductivity, lime, shredded waste tyre, soaked California bearing ratio

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