

THE EFFECT OF WETTING AND DRYING ON RESILIENT MODULUS BEHAVIOUR AND PAVEMENT RESPONSES OF LIME-CEMENT STABILISED SUBGRADE SOILS

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ABSTRACT

Stabilization of subgrade soils significantly improves their strength and mechanical properties. However, the moisture changes from environmental conditions cause deterioration to the stabilized subgrade soils by continuous cycles of wetting and drying. This paper demonstrates the changes to the resilient modulus of the stabilized subgrade soils after cycles of wetting and drying, as it is a key mechanical property and element in analytical pavement design procedures. A series of tests were conducted on three types of subgrade soils that were stabilized to varying degrees with combination of lime and cement. The tests carried out were soil classification, unconfined compressive strength and resilient modulus. The results show a decrease in resilient modulus values after cycles of wetting and drying. Furthermore pavement responses to the applied load have changed for changes of moisture for untreated and treated soils.