

Stabilization of Expansive Soils with Milk of Lime: the Case of Clays of *Tlemcen*, Algeria

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ABSTRACT

Clay soil is the foundation for many buildings. Some families have the characteristic to be swelling or shrink. However, construction on this type of soil requires a good companion for the recognition of identification and characterization of their swelling potential. In this work the stabilization by the addition of milk of lime is used. This use is explained by the fact that this technique is that which provides the maximum benefit, particularly regarding the cost and methods of executions. In this work we are interested by two aspects:

- The first is on the tests recommended for the identification of four expansive soils in the region of *Tlemcen* in the north western Algeria.

- The second is to assess the influence of the addition of milk of lime has different percentages on the physico-chemical Compression shear strength, characteristics of compaction versus, swelling pressure and swelling potential of these soils.

This study shows that the stabilization by the addition of lime milk modifies the physicochemical characteristics of the soil, Compression shear strength and the results are quite satisfactory in significantly reducing the phenomena of swelling.

KEYWORDS: Clay, milk of lime, plasticity index, optimum density of dry, swelling, swelling pressure, swelling potential, stabilization, PH, Compression shear strength.

INTRODUCTION

The expansive soils are very thin soils whose elements are composed of layers. In times of drought, they lose their saturation, when they hydrated again; the water penetrates the cracks and tends to its initial volume. This is the phenomenon of swelling (Derriche *et al.*, 1994).