

International Conference on

Sustainable Civil Engineering

June 20-21, 2016 Cape Town, South Africa

Compressibility of a 'Fat' clay mixed with aggregates

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'Fat' clayey soils, containing large proportion of fines (more than 50%) and mixture of aggregates are usually encountered as natural deposits in a high plasticity state. These soils may be used as raw material after chemical or mechanical stabilization, in many earthworks applications. The clay content, the amount and size of aggregates, are known to affect the compressibility potential, and thus, the stiffness of the soil when subjected to vertical loads. In this investigation, a comprehensive oedometer testing program was conducted on reconstituted artificial samples, made of various mass proportions of kaolin, sand and gravel. The moisture content of the samples varied accordingly to the percentage of kaolin content in each series, but yielding samples of high plasticity, having the same Atterberg limits. The compressibility was characterized herein by the coefficient of volume compressibility (mv). The results indicates that, for this type of soils, the compressibility is much more affected by the coarser matrix (ratio of the mass percentage of the gravel to the mass percentage of sand G/S) rather than the percentage of clay content. Based on the observations made, a chart is proposed for a quick estimation of the compressibility potential of fat clays.

Biography

Doula Bouteraa, He received a master's certificate in 2012 from the University of Tebessa at the age of 24th, and then recorded in a doctorate at the same university.

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