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Use of Residual Material from the Manufacture of Ceramic Bricks as an Alternative to Improve Soils of High Plasticity Clays

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Abstract

At 2017 Colombia produced an estimated 350,000 tons of bricks per month, the manufacturing process of this product, in addition to generating large amounts of pollution, has a certain percentage of waste, which varies with respect to the level of technification of the brick factory, this Residue in general constitutes an environmental liability and the objective of this work was to study the implementation of the crushed waste from brick manufacturing, as a stabilizing agent of clay soils of high plasticity. The physical and mechanical properties of the waste material were studied, when it was included in the soil mass in proportions of 5%, 10% and 15% by weight, the results indicated a considerable increase in soil resistance, expressed in the value of the soil. CBR that went from 6.7% in natural state to 12.7% for the mixture of 15%, and a reduction in the plasticity index of 23.18% with respect to the natural condition. These values indicate that the use of waste material for the stabilization of soil with problems associated with high plasticity, constitute a viable and environmentally friendly alternative.

Keywords: Residue, Alternative material, Plasticity, Stabilization, Ceramic brick.
