



Green Stabilization of Clay Soil Using Cement Kiln Dust

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Abstract : This research work is aimed to evaluate the suitability of cement kiln dust for stabilization of expansive clay soil in Coimbatore. The laboratory work involved index properties to classify the soil sample. The preliminary investigation of the soil shows that it belongs to CH class of soil in the BIS soil classification system. Soils under this class are generally of poor engineering use. Atterberg limits, free swell, free swell index, compaction, UCS and CBR tests were used to evaluate properties of stabilized soil. The soil was stabilized with cement kiln dust in stepped concentration of 5%, 10%, 15%, 20%, 25% and 30% by dry weight of the soil. Analysis of the results shows that high improvement on the geotechnical properties of cement kiln dust stabilized soil. Cement kiln dust reduces plasticity index, swelling and MDD with an increase in OMC, UCS and CBR with all higher cement kiln dust contents. From this study it was found out that cement kiln dust stabilized soil meet the minimum requirement of IRC pavement specification for use as a sub-grade material in road construction.

Key words : *Expansive subgrade, Cement Kiln Dust (CKD), Atterberg limits, Compaction Tests, UCS, CBR.*

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