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Characteristics of Clayey Subgrade Soil Mixed with Cement Stabilizer

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Abstract : Clayey soil is considered weakest subgrade soil from civil engineering point of view under moist condition. These swelling soils attract and absorb water and losses their strength. Certain inherent properties of these clayey soils need modification for their bulk use in the construction of highways/runways pavements and embankments, etc. In this paper, results of clayey subgrade modified with cement stabilizer is presented. Investigation includes evaluation of specific gravity, Atterberg's limits, grain size distribution, maximum dry density, optimum moisture content and CBR value of the clayey soil and cement treated clayey soil. A series of proctor compaction and CBR tests (un-soaked and soaked) are carried out on clayey soil and clayey soil mixed with cement stabilizer in 2%, 4% & 6% percentages to the dry weight of soil. In CBR test, under soaked condition best results are obtained with 6% of cement. However, the difference between the CBR value by addition of 4% and 6% cement is not much. Therefore from economical consideration addition of 4% cement gives the best result after soaking period of 90 days.

Keywords : clayey soil, cement, maximum dry density, optimum moisture content, California bearing ratio
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