

Effect of KOH Treated Coir Pith on Compressive Strength of Clayey Silt

Ajith R S¹ and Sudha A R²

M Tech Scholar, Department of Civil Engineering¹

Assistant Professor, Department of Civil Engineering²

St. Thomas Institute for Science and Technology, Thiruvananthapuram, Kerala, India

Abstract: Kuttanad soils are low strength soft clay or silt deposits found in the Kuttanad areas of the Alappuzha district, Kerala. Due to its low load-bearing and high shrinkage characteristics, the structures and pavements constructed over were unstable. Treatment with appropriate chemical additives is one of the accustomed and economic techniques in soil stabilization practice for improving the characteristics of weak soil. Traditional stabilizing agents like cement, lime, etc. are becoming less environmentally friendly and costly. Coir pith (treated and untreated) is proposed in this study. Coir pith was treated using potassium hydroxide. Initial tests like natural water content, specific gravity, Atterberg's limit test, hydrometer analysis, compaction test, unconfined compressive strength tests were conducted to find the properties of natural soil. Proctor compaction tests, unconfined compression tests are to be performed to investigate the effectiveness of the coir pith to control the volume change and increase the soil strength. Maximum dry density increases with treated coir pith whereas OMC decreases. UCS test results shows an increase in strength which confirm that treated and untreated coir pith are able to effectively stabilize the natural expansive soil.

Keywords: KOH, Coir pith, CP, UCC test, Standard proctor test.

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