

Performance of Palm Oil Fuel Ash (POFA) with Lime as Stabilising Agent for Soil Improvement

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ABSTRACT

Agricultural waste materials have a great potential to be used as chemical stabilizer in the soil stabilization technique. In this research, the performance of Palm Oil Fuel Ash (POFA) was investigated to improve the engineering properties of silty soil by mixing it with the lime slurry under different curing period. Silty soil had been used in this study because it is a problematic soil with low strength. The problem related to this soil is like structure failure due to inadequacy of the soil strength. Objective of this study is to investigate the performance of lime and POFA as the stabilization agent on silty soil. More than hundreds remoulded sample have been prepared based on 1:3 ratio (lime:POFA). These samples were cured for 7, 14, 28 and 60 days. The performance of POFA in stabilizing silty soil is great at the ratio of 2% POFA and 6% lime in the silty soil. The performance of the stabilized silty soil will decrease if the ratio of POFA and lime exceeding 2:6. The strength development of soil treated with lime and POFA is increasing with respect to the curing time. As a conclusion, POFA can be used to treat the silty soil as well as reduce the environmental problem.

Keywords: *Soil stabilization, silty soil, POFA, lime, unconfined compressive test*

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