

Study on Mechanical Properties of Cemented Soil Reinforced by Empty Fruit Bunch (EFB)

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An earthquake-triggered landslide often generates the high-water content sludge due to excessive rainfall intensity. In general, the sludge is disposed of in the dumping area. Meanwhile, Indonesia is known as a leading country for the palm oil plantation. The production, however, remains the agricultural waste, so-called Empty Fruit Bunch (EFB). EFB contains the fibrous material which is perceived to absorb the water. In this work, instead of proceeding with the sludge removal, the recycling is proposed by applying the Fiber-Cement Stabilized Soil (FCSS) method. FCSS method is a soil recycling method that performs the mixing condition of the sludge, cement, and fiber material. Moreover, the EFB is used as the fiber material. The mixing condition is designed with various amounts of each material to investigate the mechanical properties of the sludge reinforced by EFB. Thus, the Unconfined Compression Strength (UCS) test and permeability test are conducted.

Keywords : Fiber-Cement Stabilized Soil (FCSS) Method, Empty Fruit Bunch (EFB), Unconfined Compression Strength (UCS) Test, Permeability Test