عنوان مقاله:

Strength evaluations for treated peat with cement and polypropylene fibres using CBR tests

محل انتشار:

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خلاصه مقاله:

Peat or organic soils are those types of soils that contain a significant amount of organic material derived from plants or animals. Although peat deposits create obvious topographic features such as swamp and bogs, others are buried underground, having been covered with inorganic alluvial soils. These often are difficult to detect and are the source of differential settlements when subjected to loads from civil engineering projects..This article describes a laboratory study on treating peat using ordinary Portland cement (OPC) as binding agent and polypropylene fibers as additive. Due to high initial water content of peat, the usual moist curing technique used to cure the treated peat samples is not used and air curing method is used instead. Beside routine laboratory tests on plain peat, strength evaluation test on the treated peat samples with cement and fibres used in the research was California bearing ratio (CBR). Air curing period used was 90 days for the CBR (soaked and un-soaked) test samples. Various amounts of cements (15, 30 and 50%) as well as 0.15% of fibres were used to treat plain peat samples. The result of CBR tests show significant strength improvement of stabilized peat through curing period. Also as the cement amounts increase, treated samples gain more strength, while polypropylene fibers when added to the treated peat with cement not only give more strength values, rather contribute a considerable amount of uniformity and intactness to the cement treated peat samples as well.

کلمات کلیدی:

Cement, Polypropylene fibers, Stabilization, California Bearing Ratio, Air curing