BEARING CAPACITY AND SEEPAGE CHARACTERISTIC OF FLYASH-BENTONITE LAYERED SYSTEM

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ABSTRACT

The present study has been carried out to find the load carrying capacity and seepage characteristics of flyash-bentonite layered system having ratios of 1:1, 2:1, 3:1 and 4:1 with varying number of interfaces of N=1, 2 and 3 under normal loading conditions. A systematic laboratory investigation has been carried out by conducting a series of undrained (UU) and consolidated undrained (CU) triaxial tests on layered samples at different intensities of load and under varying confining pressures of 100, 200 and 300 kPa. The present experimental work shows that the load carrying capacity of flyash-bentonite layered system increases with the increase of confining pressures as well as number of interfaces and get optimized at flyash-bentonite ratio of 3:1 with number of interfaces, N=3. The permeability increases with increase in ratio of flyash-bentonite and number of interfaces. This investigation suggests the utilization of flyash in bulk mass at the flyash-bentonite ratio of 3:1 with number of interfaces of N=3 as a replacement to the conventional earth material in geotechnical construction work such as embankments, road sub-bases and structural land fill.

KEYWORDS: Flyash, Bentonite, Interface, Layered System, Flyash-Bentonite Ratio