

Experimental Investigation on Comparative Study on Bearing Capacity of Stone Column Replaced with Ceramic Waste and Geogrid Encasement

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Abstract: *Stone columns are most efficient ground improvement technique for treating problematic soil. Stone columns could increase the bearing capacity of soft soil, reduce settlement, increase rate of consolidation, and mitigate liquefaction potential. Stone columns have been widely employed to improve the load settlement characteristics of soft soil. The load carrying capacity, load settlement relationships can be easily monitored with the help of PLAXIS 3D software with some laboroteric analysis. In laboratory part we add ceramic dust with the soil sample, find the optimum value and check the bearing capacity improvement. This research is based on a computational analysis by creating a finite element model of stone columns using PLAXIS 3D. A certain range of parameters for example spacing, diameter and angle of friction of stone columns are considered. Here the stone column material is replaced with ceramic waste and settlement of stone column and ceramic column is compared. Based on the load settlement evaluation, ceramic column is found to be more effective.*

Keywords: Plaxis3D, Consolidation, stone column, Ceramic column

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