

Evaluation of Bearing Capacity of Vertically Loaded Strip Piled-Raft Embedded in Soft Clay

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Abstract : Settlement and bearing capacity of a piled raft are the two important issues for the foundations of the structures built on coastal areas from the geotechnical engineering point of view. Strip piled raft as a load carrying system could be used to reduce the possible extensive consolidation settlements and improve bearing capacity of structures in soft ground. The aim of this research was to evaluate the efficiency of strip piled raft embedded in soft clay. The efficiency of bearing capacity of strip piled raft foundation is evaluated numerically in two cases: in first case, the cap is placed directly on the ground surface and in the second, the cap is placed above the ground. Regarding to the fact that the geotechnical parameters of the soft clay are considered at low level, low bearing capacity is expected. The length, diameter and axe-to-axe distance of piles are the parameters which varied in this research to find out how they affect the bearing capacity. Results indicate that increasing the length and the diameter of the piles increase the bearing capacity. The complementary results will be presented in the final version of the paper.

Keywords : soft clay, strip piled raft, bearing capacity, settlement

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