Efficiency of Pile Groups in Clay under Different Loading Rates

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ABSTRACT

A total of forty model tests have been conducted to examine the behavior of axially loaded pile groups under different loading rates. The tests were conducted in a clayey soil bed prepared in a test tank. The pile groups have five different configurations with center-to-center spacing of three or nine times the pile diameter. The model piles were subjected to axial compressive loads at four different loading rates. Along with the pile groups, a single pile was also tested. Test results indicated that the effect of loading rate on the efficiency of pile group, within a group configuration, for the different pile group configurations is insignificant. For the same center-to-center spacing between piles in a group, the pile group efficiency reduces with increasing number of piles in a group. The efficiency increases with the increase in spacing between piles in a group. The efficiency values obtained in this study are in good agreement with those reported in the literature and with those calculated from Convese-Labarre equation.