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A MODEL PILE LOAD TEST
IN LATERITE SOIL

BY

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SYNOPSIS

This model study on Bearing Capacity and Settlement of single pile in Laterite soil was performed to check on the Ultimate Bearing Capacity and Settlement as calculated by various theoretical methods against actual values obtained by loading test.

In order to achieve a comprehensive assessment on both parameters, especially the settlement behaviour, the loading test was documented to produce a relationship between Load and Settlement.

From this study, it was found that for Ultimate Bearing Capacity, the available theoretical methods predict with reasonable accuracy especially for Tomlinson's Method and Vijayvergiva Method. As for settlement, the aggrement between calculated and measured settlement are poor.

1.0 INTRODUCTION

Piles are vertically or slightly incline structural foundation members, having relatively small cross - sectional dimensions with respect to their length. They are introduced into the soil and transmit the loads from the superstructure to the subsoil. The length, method of installation and way of acting of piles can vary greatly, and thus they are easily adaptable to various conditions and requirements. Laterite is a highly weathered material, rich in secondary oxides of iron or aluminium or both.

There are many uses of laterite soils such as earth dam, embankment, highway, airfield, pavement and filing area for construction.

Two of the aspect of piles foundation which always concern foundation engineers are the Bearing Capacity and Settlement. The Bearing Capacity depends upon the soil properties i.e angle of internal friction ϕ, effective unit weight of soil γ, cohesion C, type and geometry of pile.

In carrying out this experimental project, the opportunity was taken of checking the Ultimate Bearing Capacity and Settlement of single piles as calculated by various theoretical method against the actual values obtained by making a loading test on a model pile in the laboratory.

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