Abstrak

Studi perhitungan daya dukung dan perhitungan settlement yang tepat sangat penting untuk pembangunan suatu konstruksi. Perhitungan daya dukung dan perhitungan settlement harus memperhatikan kondisi dan jenis dari tanah yang akan dibangun fondasi tiang. Contohnya seperti daerah Semarang, Jawa Tengah memiliki jenis tanah rata-rata bersifat lunak. Pada penelitian ini, dilakukan perhitungan daya dukung fondasi tiang dengan menggunakan beberapa metode dan dilakukan juga perhitungan settlement. Fondasi tiang yang dipakai berupa tiang pancang berbentuk persegi dengan ukuran 25x25 cm. Data tanah untuk menghitung daya dukung fondasi tiang dan settlement didapatkan dari data Boring Log dan uji laboratorium yang nantinya akan diolah untuk mendapatkan parameter tanah. Data tanah tersebut diambil dari suatu proyek yang bertujuan untuk gudang yang berlokasi di Semarang yang tanahnya merupakan tanah lunak. Perhitungan daya dukung fondasi yang telah dihitung manual menggunakan beberapa metode serta perhitungan settlement nantinya akan dianalisis dan dibandingkan dengan hasil dari Pile Driving Analyzer (PDA). Dari hasil analisis tersebut dapat diketahui metode perhitungan yang paling mendekati dengan hasil dari uji PDA.

***Kata kunci**: Fondasi tiang; tanah lunak; Pile Driving Analyzer (PDA); daya dukung fondasi; settlement.*

Abstract

The study of the right calculation of bearing capacity and the settlement is very important for the construction of a building. Calculation of bearing capacity and calculation of settlement must take into account the condition and type of soil on which the pile foundation will be built. For example, in the area of Semarang, Central Java, the average soil type is soft. In this study, the bearing capacity of the pile foundation was calculated using several methods and settlement calculations were also carried out. The pile foundation used is a square pile with a size of 25x25 cm. Soil data calculation the bearing capacity of pile foundations and settlement is obtained from Boring Log data and laboratory tests which will later be processed to obtain soil parameters. The soil data is taken from a project to construct a werehouse that located in Semarang where the soil type is soft. Calculation of foundation's bearing capacity that has been calculated manually using several methods as well as settlement calculations will later be analyzed and compared with the results from the Pile Driving Analyzer (PDA). From the results of this analysis it can be seen that the calculation method that is closest to the result of the PDA test.

Keywords*: Pile foundation; soft soil; Pile Driving Analyzer (PDA); foundation's bearing capacity;settlement.*