

ABSTRAK

Fondasi merupakan bagian penting dari satu bangunan sipil, fondasi sebagai dasar penahan beban terdasar dari suatu konstruksi. Jalan, gedung, jembatan, bendungan dan konstruksi sipil lainnya apabila tanpa fondasi yang kuat pasti akan mengalami kegagalan konstruksi. Pada pengaplikasian dilapangan sering mengesampingkan analisis daya dukung fondasi yang tepat. Desain fondasi hanya berdasarkan pengalaman pribadi, sehingga penulis menganggap hal ini perlu diangkat karena fondasi menjadi landasan terpenting dari keberhasilan bangunan konstruksi.

Dalam penelitian ini dilakukan analisis kapasitas daya dukung tiang pancang menggunakan formula dinamis metode Danish.

Dalam Metode Danish faktor-faktor yang mempengaruhi dalam menghitung kapasitas daya dukung tiang adalah berat palu/hammer, berat dan tiang tiang pancang, luas penampang tiang pancang, modulus elastisitas tiang pancang, tinggi jatuh palu/hammer, penetrasi tiang (final set) terakhir, kondisi alat (efisiensi alat pancang). Hasil analisis tiang pancang beton diameter 40 cm dan kedalaman 42.0 m berdasarkan formula dinamis Metode Danish didapat kapasitas daya dukung tiang pancang ultimate maksimum sebesar 227.630 ton dan minimum sebesar 201.276 ton.

Kata Kunci : fondasi tiang, tiang pancang, formula dinamis metode Danish, kapasitas daya dukung

ABSTRACT

The foundation is an important part of a civil building, the foundation as the basic load-bearing base of a construction. Roads, buildings, bridges, dams and other civil constructions without a strong foundation will inevitably fail. In field applications, the proper foundation bearing capacity analysis is often ruled out. The foundation design is only based on personal experience, so the author considers this to be necessary because the foundation is the most important foundation for the success of a construction building.

In this study, an analysis of the bearing capacity of the pile was carried out using the dynamic formula of the Danish method.

In the Danish Method the factors that influence in calculating the bearing capacity of the pile are the weight of the hammer, the weight and pile of the pile, the cross-sectional area of the pile, the modulus of elasticity of the pile, the height of the hammer, the penetration of the last pile (final set), condition of the tool (efficiency of the tool). The results of the analysis of concrete piles with a diameter of 40 cm and a depth of 42.0 m based on the dynamic formula of the Danish Method, the maximum bearing capacity of the ultimate pile is 227.630 tons and a minimum of 201.276 tons.

Key Words : pile foundation, pile, Danish method dynamic formula, bearing capacity