

ANALISIS DAYA DUKUNG FONDASI TIANG PANCANG PADA PROYEK PEMBANGUNAN PABRIK OAJ CARTON INDONAKANO

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INTISARI

Fondasi tiang atau disebut juga fondasi dalam dipergunakan untuk konstruksi beban berat (*high rise building*). Sebelum melaksanakan suatu pembangunan konstruksi yang pertama-tama dilaksanakan dan dikerjakan di lapangan adalah pekerjaan fondasi (struktur bawah). Perencanaan fondasi tiang pancang mencakup berbagai tahapan studi kelayakan dan perencanaan teknis. Semua itu dilakukan supaya menjamin hasil akhir suatu konstruksi yang kuat, dan aman. Untuk menghindari terjadinya kerusakan atau keruntuhan, suatu fondasi tiang pancang baik tunggal maupun tiang kelompok haruslah mempunyai daya dukung yang cukup untuk memikul konstruksi yang ada di atasnya.

Pengujian dari studi ini menggunakan beberapa metode untuk menghitung daya dukung tiang pancang dari hasil sondir, *test PDA*, analisis *software CAPWAP* dan Kalendering, membandingkan hasil daya dukung tiang pancang. Metodologi pengumpulan data dilakukan dengan cara melakukan observasi, pengambilan data dari pihak proyek serta melakukan studi keperpustakaan. Pada perhitungan daya dukung tiang pancang dilakukan dengan menggunakan beberapa metode, untuk data sondir dengan metode *Aoki de Alencar*, *test PDA* dan *software CAPWAP* dilakukan sesuai dengan perarturan ASTM D4945 (*Standard Test Method for High-Strain Dynamic Testing of Deep Foundations*) dan untuk uji Kalendering dengan metode *Hiley Formula*.

Berdasarkan data sondir, *PDA*, *CAPWAP* dan Kalendering, maka diperoleh hasil perhitungan untuk sondir dengan metode *Aoki de Alencar S-1* sebesar 125,048 ton dan *S-2* sebesar 146,817 ton, untuk hasil *test PDA* didapatkan pada *Pile Number 126* sebesar 140 ton dan *Pile Number 230* sebesar 144 ton, hasil keluaran *software CAPWAP* didapatkan pada *Pile Number 126* sebesar 157 ton dan *Pile Number 230* sebesar 160 ton dan hasil Kalendering dengan metode *Hiley Formula* didapatkan pada *Pile Number 126* sebesar 124 ton dan *Pile Number 230* sebesar 149,480 ton.

Kata Kunci: Sondir, *Pile Driving Analyzer (PDA)*, *CAPWAP*, Kalendering.

ANALYSIS OF SUPPORTING POWER OF PILE FOUNDATION ON OAJ CARTON INDONAKANO FACTORY DEVELOPMENT PROJECT

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Pile foundations or also called deep foundations are used for heavy load constructions (high rise buildings). Before carrying out a construction, the first thing that is carried out and applied in the field is foundation work (lower structure). Pile foundation planning includes various stages of feasibility studies and technical planning. All of this is done to guarantee the final result of a strong and safe construction. To avoid damage or collapse, a single pile foundation or group piles must have sufficient bearing capacity to carry the construction on it.

The test of this study uses several methods to calculate the bearing capacity of piles from the results of the *sondir*, PDA test, CAPWAP and Calendar software analysis, to compare the results of the bearing capacity of piles. The data collection methodology was carried out by observing, collecting data from the project and conducting library studies. The calculation of the bearing capacity of piles was carried out using several methods, for *sondir* data it applied Aoki de Alencar method, PDA tests and CAPWAP software were carried out in accordance with ASTM D4945 (Standard Test Method for High-Strain Dynamic Testing of Deep Foundations) and for Calendar testing it applied the Hiley Formula method.

Based on *sondir*, PDA, CAPWAP and Calendar data, the calculation results for *sondir* using the Aoki de Alencar S-1 method were 125.048 tones and S-2 were 146.817 tones, PDA test results obtained on Pile Number were 126 of 140 tones and Pile Number 230 amounted to 144 tons, the output of CAPWAP software was obtained at Pile Number 126 of 157 tons and Pile Number 230 of 160 tons and calendar results using the Hiley Formula method were obtained at Pile Number 126 of 124 tons and Pile Number 230 of 149.480 tons.

Key words: *Sondir*, *Pile Driving Analyzer* (PDA), CAPWAP, Calendaring

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