

C615197 : MAJOR CIVIL ENGINEERING

KEY WORD: DYNAMIC PILE LOAD TEST / PILE DRIVING ANALYSER / CAPWAPC (CASE PILE WAVE

ANALYSIS PROGRAM CONTINUOUS - VERSION) / STATIC PILE LOAD TEST

PEECHAYA THAVEELERT : EVALUATION OF DYNAMIC PILE LOAD TEST PERFORMANCE IN BANGKOK AND RAYONG SUBSOILS. THESIS ADVISOR : ASSIST. PROF. SURACHAT

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This research has the objective to evaluate the Dynamic pile load test for the driven pile in Bangkok and Rayong subsoils. The relationship between the result of pile bearing load from Dynamic pile load test method and Static pile load test method was considered , including of the differential ratio of pile load capacity from Dynamic pile load test when restrike test to initial test with time. The pile load capacities from Dynamic pile load test were compared with those evaluated from Soil mechanics method. In addition the parameters that influence in analysing pile load capacity in Dynamic pile load test were summarized.

Data for research is composed of : 1) the result of pile load capacity from Dynamic pile load test ; 2) the result of pile load capacity from Static pile load test (maintain load) ; and 3) data from soil boring.

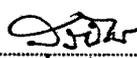
Based on limiting data , the conclusion of research are : Dynamic pile load test is considered to be good method to evaluate pile load capacity. And the relationship between the result of pile bearing load from Dynamic pile load test by using CAPWAPC Capacity (Y) and Static pile load test by using Mazurkiewicz's method (X) in Bangkok subsoils is $Y = 0.963 X ; R^2 = 0.85$. For Rayong subsoils the relation is $Y = 1.172 X ; R^2 = 0.68$. These values of R^2 are better when using ultimate load based on Mazurkiewicz's failure criterion for both dynamic and static analysis. When considering, the differential ratio of pile load capacity at restrike test to initial test with time , it was found that pile size and type of soil at pile tip have an effect to change the ratio of pile load capacity. This ratio may increase or decrease. When the skin friction and end bearing load results from Dynamic pile load test and from Soil mechanics method were compared for Bangkok and Rayong subsoils. At Wangnoi , the comparisons show the ultimate load from both of methods are in good agreement in some piles. And some piles yield rather poor results. About spun piles at Ramindra-Atnarong Expressway Project , the comparisons yield good results. And piles in Rayong give the value of ultimate bearing load form both methods are about the same but the skin friction and end bearing load have different values. Regarding to the important of parameters that influence in analysing of the Dynamic pile load test result is input of the total static resistance. Other dynamic parameters have a wide range leading to the difficulty in selection.

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