

A Statistical Approach to Rationalise the Number of Working Load Test for Quality Control of Pile Installation in Singapore Jurong Formation

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Abstract : Pile load testing is significant during foundation construction due to its traditional role of design validation and routine quality control of the piling works. In order to verify whether piles can take loadings at specified settlements, piles will have to undergo working load test where the test load should normally up to 150% of the working load of a pile. Selection or sampling of piles for the working load test is done subject to the number specified in Singapore National Annex to Eurocode 7 SS EN 1997-1:2010. This paper presents an innovative way to rationalize the number of pile load test by adopting statistical analysis approach and looking at the coefficient of variance of pile elastic modulus using a case study at Singapore Tuas depot. Results are very promising and have shown that it is possible to reduce the number of working load test without influencing the reliability and confidence on the pile quality. Moving forward, it is suggested that more load test data from other geological formations to be examined to compare with the findings from this paper.

Keywords : elastic modulus of pile under soil interaction, jurong formation, kentledge test, pile load test

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