

**AN ANALYTICAL STUDY ON PILE BEARING  
CAPACITY USING STATIC LOAD TEST RESULTS.**

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**B.Eng (Hons) (Civil)  
UNIVERSITI TEKNOLOGI MARA  
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**BY**

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Report is submitted as  
the requirement for the degree of  
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## **DECLARATION BY THE CANDIDATE**

I am Nurulzatushima Bt. Abdul Karim, 2003339844, confirm that work is my own and that appropriate credit has been given where reference has been made to the work of others.

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(NURULZATUSHIMA BT ABDUL KARIM)

(15 / 11/ 06)

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## ABSTRACT

In Civil Engineering point view, the important aspect during design stage is to obtain the cost effective design or to avoid over and under estimate design on pile bearing capacity. Most of foundation elements, when tested to soil failure, do not exhibit a clearly defined failure load. But the design procedure requires that a specific ultimate capacity be taken from the load test results. Decourt Method, Brinch Hansen 80% criterion Method , Chin Method and Vander Veen Methods are the method that reviewed. The result of this study found that in Uitm Pulau Pinang, the piles foundation design could be considered as under estimate, and a few of them are reasonable and over estimate. The under estimate pile design has  $Q_{ultimate}$  are based on Decourt Method, Brinch Hansen 80% criterion Method, Chin Method and Vander Veen Methods and they are larger than design load. This resulted in wastage of material and ineffective cost utilisation for the project. This study also focus on determine the status of pile deduced from design assumption and manufacturer's specification. Based on this study, it can be concluded that most test piles in Penang were experience geotechnical govern while some of them are under structural govern and pile overloaded. This study also concern about failure analysis in term of excessive settlement. Excessive settlement was not the major cause in pile failure. Only 6 Test pile in Uitm Pulau Pinang stes were having excessive settlement. JKR failure criteria were used to compare between settlement values from Static Load Test with standard value from JKR criteria.