Final Year Project Report

Advanced Diploma in Civil Engineering

School of Engineering

MARA Institute of Technology

# Structural Behaviour of Prestressed Piles Under Various Initial Curvature

By

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**SYNOPSIS**

This project work is concerned with the study of the structural behaviour of prestressed concrete piles with special references to initial curvature (eccentricity) and cracking.

This structural behaviour of prestressed would be compared with the structural behaviour of reinforced under same sizes and loading.Reinforced specimens goes through three processes namely, design, casting and testing. Prestressed specimens were given by Stresscon Company Sdn Bhd.Four square piles of prestressed and reinforced of size 125 x 125 mm were designed in accordance with BS8004 :Part 1: 1975.The piles were tested on an effective span 3.6 m under bending test and combination of bending and compression tests.Deflection and cracks were measured at various stages of loading.

The test results show that the comparison between prestressed and Reinforced piles can be obtained.

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# CHAPTER 1

## 1.0 INTRODUCTION

During 1971 it become apparent that there was a demand for long, high capacity piles capable of penetrating hard strata at relatively high levels. Most piling system were seen to be unsuited to these duties due either to the very large plant required or the difficulty in placing concrete at great depth. A survey conducted in 1971 by a specialist piling contractor indicated definite trends in demand towards piles capable of penetrating to depths in excess of 30 m through hard intermediate strata and of carrying high individuals loads or being placed in closely spaced groups.

Most piling system were seen to be incapable of meeting these requirements without involving heavy plant (difficult to manoeuvre on site) and to transfer between sites, difficult on site concreting processes and an undue reliance upon the effectiveness of site operations.