

**A NUMERICAL STUDY ON STRUCTURAL BEHAVIOUR OF
BONDED AND UNBONDED PRESTRESSED BEAMS**

By

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DECLARATION BY CANDIDATE

I, Hardiyana binti Mohd Samsi,UITM no 2004335579 confirm that the work is my own and the appropriate credit has been given where references has been made to the work of others.



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ABSTRACT

This thesis describes a suite of programs developed to assist in the design of simply supported bonded and unbonded post-tensioning prestressed beam. The suite is divided into three packages dealing with design of simply supported prestressed beam with two point loads, which is calculation for bending moment, shear force and deflection.

The main aim of this project is to investigate the behaviour of bonded and unbonded for prestressed beams at ultimate limit state by using procedure in BS 8110 code. A simple computer program was developed using FORTRAN 77 to assist in this parametric investigation. Some results of this investigation may require further verification through laboratory experiments.

Outputs from FORTRAN were compared to theoretical (hand-calculated) results. Conclusions were then made as to accuracy of FORTRAN language. The results compared well to experimental and other software also. From this study, it was found that the behaviour of the prestressed beams with bonded tendons is better known compared to beams with unbonded tendons.

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