FINAL YEAR PROJECT REPORT

ADVANCED DIPLOMA IN CIVIL ENGINEERING

SCHOOL OF ENGINEERING

INSTITUT TEKNOLOGI MARA

SHAH ALAM,SELANGOR DARUL EHSAN.

STUDY ON THE STRUCTURAL BEHAVIOUR OF PRESTRESSED CONCRETE SLEEPER.

BY

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TABLE OF CONTENT

PAGES

ABSTRACT.

The track is the infrastructure of the railway system. In addition to its construction cost, the maintenance cost constitutes an important part of the expenditure in railway management and operation.

A train with a certain wheel load which runs at a certain speed imposes an external force on the track. The means to withstand against this force is provided by the strength of the track structure.The track structure forms a wheel running way, provide maintenance capacity for checking and restoring the deformation and deterioration of the track.

For many years railway line were laid on wooden and metal sleepers. Due to the development of long welded rails and an increase in the train speed, it becomes necessary to increase the weight and strength of the sleepers to resist track buckling and reduce vibration in ballast.

This experimental project is a preliminary study on dynamic testing of Prestressed Railway Concrete Sleepers (PCS). Two specimens were tested; one on the static loading and the other one on the dynamic loading with constant load, to simulate the actual loading condition from axle load of the train.
From the experimental work; results of deflections versus load, deflection versus cycles (hours), stress versus strain, were plotted and location of cracks were shown.