ANALYSIS OF PRESTRESSED MONOBLOCK CONCRETE SLEEPERS SUBJECTED TO DYNAMIC LOADING ON SIX COACHES SET

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**Bachelor of Engineering (Hons) Civil (Infrastructure)
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by

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DECLARATION OF CANDIDATE

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This topic has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Under Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

Traffic congestion is one of the biggest issues that popular this country. The government had suggested all Malaysian to use public transportation instead of using their own cars. Railway transport is one of public transport that people can use as daily public transportation. Other than public transport, railway transport also can be used to transfer heavy and bulky goods over long distances. The most important part of railway transport is railway track structure. The main elements of railway track structure are the sleepers. In order to give a best serve to our community, the deeper research in sleepers need to be discovered. Many foreign researchers have conducted dynamic loading test on the Prestressed Monoblock Concrete Sleepers (PCS). However, the data they achieved cannot be related completely to PCS in Malaysia due to several differences like standards and environments. In Malaysia, research papers about PCS are very limited. The objectives of this study are to investigate the behaviours of PCS subjected to dynamic loading applied by six coaches set and to make comparison the laboratory results with the actual results on real site railway track in Malaysia. The behaviours of PCS had been discovered in this study were the deflections and strains. The main objective of the comparison between laboratory results and actual results on real site railway track was to verify the value of deflections in laboratory results. The method use in this study was based on Australian Standard but having some adjustments due to a few limitations. The investigation was carried on site measurement in order to get the real data results. In heavy laboratory, the replication of real track structure had been made. The main equipment used in this study were Sirius Mini and strain gauges. The results in laboratory just having slightly differences from actual results on real site railway track. The pattern of graphs for both situations were approximately same which were non-linear graph. In this study, the relationships between the loads, deflections, time taken, strain and stress had been successfully investigated.

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