

**INVESTIGATION ON THE POTENTIAL
USE OF SOLID PLASTIC FIBRE AS
ENHANCER FOR CONSOLIDATION
BEHAVIOUR IN EARTHWORK
APPLICATIONS**

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**Bachelor of Engineering (Hons) Civil
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UNIVERSITI TEKNOLOGI MARA
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By

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This report is submitted as a
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DECLARATION BY THE 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

This laboratory investigation has been carried out to evaluate the effect of solid plastic fibre on consolidation behaviour of the reinforced soil. The initial phase of this study includes of the investigation of the engineering properties of the soils. The effect of solid plastic fibre which is as reinforcement material prepared at optimum moisture content (OMC = 22%) and maximum dry density (MDD = 1.575g/cm^3) at the different percentage of the fibre. In this experimental study, percentage solid plastic fibres used are 0%, 0.25%, 0.5%, 1% and 2% from the dry weight of the soil sample. The fibres were mixed with local sandy clay soil (Sand = 46.96%, Silt = 44.76% and Clay 8.27%). The study has found that the coefficient of volume change (m_v) and compression index (C_c) values was increased from 0% to 1% and in declination trend after the 2% of the solid plastic fibre was added.. As for the coefficient of consolidation (C_v), the value rised with the increases of the percentage of solid plastic fibre used. Lastly, time rate of consolidation (t_{90}) of the soil, display faster time as the increase of the percentage of the fibre used.