

**MECHANICAL STRENGTH OF CEMENT-BINDED
THERMOPLASTIC WASTE**

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**Final Year Project Report Submitted in
Partial Fulfilment of the Requirements for the
Degree of Bachelor of Science (Hons.) Physics
in the Faculty of Applied Sciences
Universiti Teknologi Mara**

JANUARY 2014

ACKNOWLEDGEMENTS

I take this opportunity to express my profound gratitude and deep regards to my supervisor, Mdm. Junaidah Binti Md. Sani for her exemplary guidance, monitoring and constant encouragement throughout the course of my final year project, “Mechanical Strength of Cement-Binded Thermoplastic Waste (CBTW)”. The help and guidance given by her time to time shall carry me a long way in the journey of life on which I am about to embark.

I also take this opportunity to express a deep sense of gratitude to my co-supervisor, Dr. Marzuki Bin Ab. Rahman, for his cordial support, valuable information and guidance, which helped me in completing this task.

I also like to express a special thanks to Mr. Suhaimi Bin Alias, technician of Civil Engineering for valuable information and also his helps during conducting this study. I am very grateful for his cooperation during the period of my final year project.

Lastly, I would like to take this opportunity to express my special thanks to God for His blessing and strength, my beloved parents and friend for their support. May God repay all their kindness that helped me in every way to ensure this final year project success.

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ABSTRACT

MECHANICAL STRENGTH OF CEMENT-BINDED THERMOPLASTIC WASTE

The mechanical strength of cement-binded thermoplastic waste (CBTW) was ascertained. The CBTW were prepared using the ratio of water-cement-sand (0.5: 1: 2) but amount of sand were substituted with 5wt%, 10wt%, and 15wt% of thermoplastic waste granules 1cm in diameter. The CBTW with 70.7 x 70.7 x 70.7mm dimensions were prepared and cured by soaking them in water for 3 days. 3 replications for each sample were tested to find the mechanical strength via mortar test using Compress Machine (ADR-Auto). The porosity were also determined from the weight difference of the samples before and after soaking. The result indicated that the CBTW with 5% thermoplastic waste showed the highest engineering stress while CBTW with 15% thermoplastic waste showed the lowest water absorption which means the lowest porosity. Thus, thermoplastic waste have potential to be recycled into CBTW.