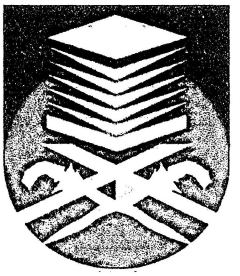

INVESTIGATION ON TYPES OF CASTING DEFECTS DUE TO INSUFFICIENT MOULD HARDNESS IN GREEN SAND CASTING

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A thesis submitted in partial fulfillment of the requirements for the award of Bachelor of Mechanical Engineering (Hons)

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MAY 2010

"I declare that this thesis is the result of my own work except the ideas and summaries which I have clarified their sources. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any degree"

Signed: .....

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ACKNOWLEDGEMENT

Bismillahirrahmanirrahim. All praise to Allah for the entire incredible gift endowed upon me for giving me the health and strength to complete this thesis and project

I would like to take this opportunity to express my most grateful appreciation to my advisor Prof. Ir. Hj. Asli Kasim for his guidance, advice and willingness in sharing the knowledge towards the completion of this thesis and project.

Thousands of thank to Hj Yusri, Mr. Dahari Ishak and Mr. Amir Ishak (from Foundry Laboratory), Mr. Mohd Harysham Zainal Abidin (from Metrology Laboratory), and Mr. Shahidan (from Radiographic X-Ray Laboratory) for their help, support, guidance and advise during the completion of this final project until it is completely done.

Special thanks to my family for their greatest support towards the completing of this thesis. Last but not least, to all of my friends who were involved in the progression of this thesis and project. Also thanks to everyone who has contributed either directly or indirectly throughout the preparation of this thesis and project.

ABSTRACT

The main objective of this research is to investigate the types of casting defect due to insufficient mould hardness in green sand casting process. In this research, the priority is also more on finding the most suitable hardness of the mould for the casting process in order to obtain the excellent casting product. As we know, many industries prefer casting product in as their assembly part such as automobile, construction, piping and etc. Sand casting has been selected because the popularities in industry. The advantages of sand casting are no limit in shape and size, recyclable green sand, versatile and etc. This research is also focused on to find the most perfect green sand mixture by determine the suitable percentage of bentonite, coal dust and water out of silica sand. It is because by using the correct percentage of green sand mixture, defects of end product can be minimized or eliminate which is correlated to the hardness value of the mould itself. The green sand will be tested on their hardness, permeability, and strength before casting process can be done. Then, results data will be tabulated in table and graph. The next process is pouring process using Alluminium as a based metal. Alluminium has been selected to be cast in this research because of many specialties such as light, low melting temperature, excellent corrosion resistance and durability. Then, the cast part will be check to identify if any defect occurs using few basic method such as visual inspection, Radiographic Test, and Surface Roughness. Lastly, the expected outcome will be on the determination of the appropriate value of mould hardness in order to perform good casting product. Other than that, at the end of the project we will know the effect of casting product due to insufficient mould hardness.

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