

UNIVERSITI TEKNOLOGI MARA



INFLUENCE OF SLAG TO THE COMPRESSIVE
STRENGTH OF CONCRETE

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DECLARATION BY THE CANDIDATE

I am Tommy Fong @ Ramzi B. Rimmy, 2000135514 confirm that work is my own and that appropriate credit has been given where reference has been made to the work of others.

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APRIL 20, 2005

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ABSTRACT

Concrete is the most widely used as construction material. It is obtained by mixing cement, water and aggregates and sometimes admixtures in required proportions. These mixtures then placed in forms and allowed to cure and become hard like stone. The hardening is caused by chemical reaction between water and cement and it continues for a long time, and consequently the concrete grows stronger with age. This project is about the influence of slag to the compressive strength of concrete. The standard mixing of concrete will be applied to this project but the cement will be replaced by slag. Slag also known as ground granulated blast furnace slag was introduced in 1974. The use of slag as a cement alternative is in high demand and approximately 250000 tonnes of granulated slag are manufactured into blended cement. The purpose of this project is to study the effect of slag to the workability of concrete, the strength of concrete (f_{cu}) and make a comparison between a basic concrete mix and basic concrete with slag and the influence of different percentage of slag in concrete mix as the replacement of cement by weight. The percentage slags that will involve are at 20%, 40% and 60%. This project was designed according to the DOE (Department of Environmental) to obtain compressive strength C35 (35 N/mm²). The concrete cubes are tested at 28 days. The results show that the compressive strength of concrete with slag passed the compressive strength requirements of 35 N/mm².

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