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APPROVAL AND DECLARATION SHEET

This project report titled “Masonry Bond Strength By Using Palm Oil Clinker With Different Aggregate Replacement And Different Mixing Procedure” was prepared and submitted by Mohd Fauzi Zakaria (Matrix Number: 101202003) and has been found satisfactory in terms of scope, quality and presentation as partial fulfilment of the requirement for the Bachelor of Engineering (Building Engineering) in Universiti Malaysia Perlis (UniMAP).

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SIFAT-SIFAT KEKUATAN MORTAR YANG MENGANDUNGI SAWIT KLINKER DENGAN PERBEZAAN PROSEDUR PERCAMPURAN

ABSTRAK

Mortar adalah bahan yang penting dalam pembinaan kerana digunakan dalam kerja mengikat bata untuk membentuk menjadi dinding. Dinding digunakan untuk menghalang dari sesuatu bendasing di luar untuk masuk ke dalam. Mortar juga mempunyai kegunaan lain seperti kerja melepai, kekemasan dan menyambung bumbung. Bahan asas bagi mortar adalah pasir, simen dan air. Klinker minyak kelapa sawit adalah masalah besar bagi Negara ini kerana Malaysia adalah antara pengeluar terbesar minyak kelapa sawit. Maka terdapat sisa buangan yg banyak oleh industry ini. Klinker minyak sawit adalah sebahagian daripada kelapa sawit yang dibakar hingga menjadi abu. Kajian ini dijalankan untuk mengkaji klinker minyak sawit sebagai bahan pengganti pasir yang digunakan dalam penghasilan mortar. Sekarang terdapat pelbagai jenis campuran yang cuba dijalankan untuk menambah baik mortar yang sedia ada. Dalam kajian ini terdapat tiga peratus perubahan agregat yg berbeza. Mortar akan diuji menggunakan ujian kekuatan flexural dan sampel akan berada dalam bentuk dinding yang mempunyai saiz 21.5cm x 9.8cm x 58.2cm (ASTM E518). sampel akan diuji selepas 28 hari.

ABSTRACT

Mortar is very important thing in building composite because it is use to bind brick to become the wall. The wall is use to block anything that come from outside of the building to get into the inside of the building. There are some other uses of mortar such as for the finishes uses, plastering and for combining the roof plate. The basic mortar mixture is using sand, water and cement. Palm oil clinker is a major problem in this country because Malaysia is one of the highest countries that produce it. So there is lots of waste that came from the industry. Palm oil clinker is part of the palm oil that is burn until it becomes ash. This research is to identify the palm oil clinker to replace the sand that is used in basic mortar mixture. Nowadays there many kind of mixture that are being try or research by the engineer group to improvise the basic mortar so that it will be more stronger than the basic one. In this case the mortar will be improved by adding the palm oil clinker in its mixture. There are two type of mixing procedure that will be used to conduct the research. There also will be three differences aggregate replacement percentage with each one of it has three samples. The mortar will be tested by using flexural strength test method so that the sample will be in wall shape the size is 21.5cm x 9.8cm x 58.2cm. The sample will tested when it reach age of 28 days. For the aggregate replacement percentage there will be 0%, 50% and 100%. This is use to determine which is the suitable mixture to have the best bonding.

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LIST OF ABBREVIATIONS

POC	-	Palm Oil Clinker
OPC	-	Ordinary Portland Cement
POFA	-	Palm Oil Fuel Ash
OPS	-	Oil Palm Shell
cm	-	Centimeter
BS	-	British Standard
ASTM	-	American Society for Testing and Materials
kg	-	Kilogram
MPa	-	Mega Pascal
m ³	-	meter cubic
%	-	Percentage
mm	-	Millimeter

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