FINAL YEAR PROJECT REPORT

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THE EFFECT ON CONCRETE BEHAVIOUR USING 20 % AND 30 % OF LATEX ADMIXTURE

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SYNOPSIS.

The aim of this investigation is to study the effect on concrete behaviour with using 20 % and 30 % of latex admixture, such as tensile strength, compressive strength, workability and permeability as well as durability. This study is a continuation of final year project done by *Nurhaidah Jamil* which used dosages of 0 % & 10 % of latex to analyse the effect of latex admixture on concrete characteristic.

In the process of the experiment, latex dosage of 20 % and 30 % will be added to the mix samples. Concrete grade of 20 N/mm^2, 25 N/mm^2, 30 N/mm^2, 35 N/mm^2 and 40 N/mm^2 will be used. The testings will be carried out at after 28 days of curing with fully immersed in water. Based on the past researchs, the testing cannot be carried out at 3 days because retardation of set due to the latex admixture. Then a comparison between percentage (%) of dosages is being studied to the different proportion and characteristic strength of concrete.

From the results obtained, it is found that compressive strength and tensile strength of cubes decreases with an increase in amount of rubber latex content for all cases of concrete grade compared to control mix which done by *Nurhaidah Jamil* and *Mohd. Zukri Senik* in their final year project report. But the addition of rubber latex gives improvements in workability and caused decreasing in the permeabilty.

CHAPTER 1 : INTRODUCTION.

1.1 General.

Concrete is a predominant construction material being used today although recently more composite materials have created or discovered for the present and future usage. Its is used in nearly types of construction through the world because of its capacity to be formed into a variety of sizes and shapes, the readily availability of the raw materials from which it is made, and its relatively low cost.

Although concrete is an exellent building material, there are certain limitations to its use. These relate mainly to its relatively low tensile strength & strain, its tendency to crack with changes in temperature and moisture and its deterioration because of permeability absorption and chemical attack under various conditions. These shortcomings have inhibited their applications and in some instances, the full utilization of the strong properties of other materials used in conjuntion with them. For intances in water retaining structures of reinforced concrete, the permisible tensile stress is limited to 19.6 MN/m^2 (N/mm^2) to avoid tensile cracking *(CP 2007 : Part 2;1970).* This value is many time less than the characterictic strength of normal reinforcement ; the characteristic strength of hot rolled mild steel is 250 N/mm^2 and that of hot rolled high yield steel is 410 N/mm^2 *(BS 4449).* There improvements in these properties could significantly extend the usefulness.

A recent effort to achive these improvements has been to produce concretes polymer composite, i.e. suitable combination of a portland cement concrete and a polymer. This work results in the introduction of polymer-impregnated conrete which is a precast, cured