



FINAL YEAR PROJECT
BACHELOR OF ENGINEERING (HONS) (CIVIL)
FACULTY OF CIVIL ENGINEERING
MARA INSTITUTE OF TECHNOLOGY
SHAH ALAM

CONCRETE INTEGRITY TEST USING
CORE SAMPLES FOR HOSTEL & SPORT COMPLEX
OF ITM SABAH

BY
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TABLE OF CONTENT

	Page
ACKNOWLEDGMENT	i
TABLE OF CONTENT	ii
LIST OF TABLES	v
LIST OF FIGURES	vi
LIST OF PHOTOGRAPHS	vii
ABSTRACT	viii
CHAPTER ONE : INTRODUCTION	
1.1 Introduction	1
1.2 Objective And Scope Of Study	2
CHAPTER TWO : LITERATURE REVIEW	
2.1 ITM Sabah - Physical Development	4
2.2 Quality Of Concrete	5
2.3 Durability	8
2.4 Salt Contamination In Aggregate	10
2.5 Materials	12
2.6 Deterioration In Concrete Structures Of ITM Sabah	13
2.7 Testing Of Concrete Structure	14
2.8 Testing Programe	15

ABSTRACT

At present five (5) hostel blocks and sport complex of Mara Institute Of Technology, Kuala Menggatal, Sabah, suffers from concrete deterioration. Spalling of concrete and rusting of the steel reinforcement occur at many location in the buildings.

This project focus on the study of the concrete properties of the structure.

Twenty (20) core samples having diameter of 50 mm and 100 mm were given by specialist engaged in the study of the structure integrity of the said buildings.

In this study, compressive strength, carbonation depth, chloride content, cement content, water absorption and UPV tests were carried out to asses the integrity of the concrete structures.

To classify the integrity of the structure from the results of the tests performed, integrity factor (J) is proposed.

1.1 INTRODUCTION

Strength of concrete is commonly considered as the most valuable property, although in many practical cases other characteristics, such as durability and permeability, may also be equal important. Nevertheless, strength usually gives an overall picture of the quality of concrete because strength is directly related to the structure of the hardened concrete.

Quality is very important criteria of concrete and therefore we need to control them. Although testing of concrete may be made for different purposes, but the main objective of testing is to control the quality so that it compliance with specification.

1.2 OBJECTIVE AND SCOPE OF STUDY

The main objective of this project is to study the strength and integrity of concrete structures. Compressive strength, carbonation, chloride content, cement content, water absorption, and ultra pulse velocity tests were performed in Civil Engineering Laboratory.

For this purpose, twenty (20) core samples were taken from different locations of the structures. The results will then be corelated to determine the quality of the in situ concrete.