

**MANUFACTURING PROCESS OF CONCRETE AND  
ANALYSIS OF ITS PRODUCT**

**CHING LOON SIN**

**FACULTY OF SCIENCE AND TECHNOLOGY  
KOLEJ UNIVERSITI SAINS DAN TEKNOLOGI MALAYSIA  
UNIVERSITI PUTRA MALAYSIA**

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KOLEJ UNIVERSITI SAINS & TEKNOLOGI MALAYSIA  
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**MANUFACTURING PROCESS OF CONCRETE AND  
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**By**

**CHING BOON SIN**

**Thesis submitted in partial fulfilment of the requirement  
for the Degree Bachelor of Science ( Hons. ) Chemistry.**

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**Approved by :**

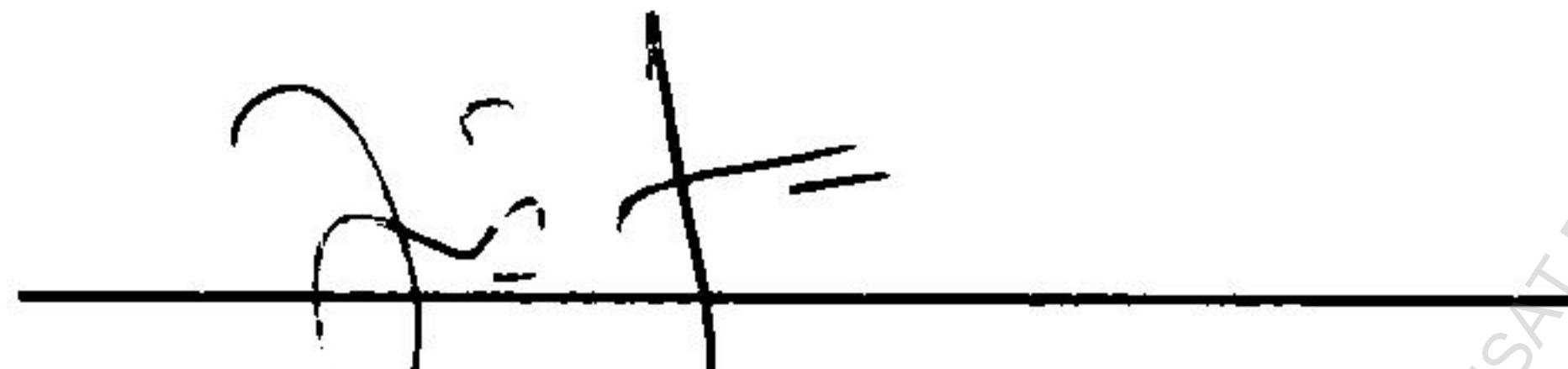
**Supervisor**



**( Dr. Misbahul Mohd Amin )**

**Date:** 9.7.2002

**Coordinator**



**( Encik Suhaimi Suratman )**

**Date :** 9/7/02

**Head of Chemistry Department**



**( Prof. Dr Law Ah Theem )**

**Date :** 9/7/02



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## ABSTRAK

Pemrosesan konkrit yang kuat adalah sangat penting. Pembinaan bangunan-bangunan tinggi, kemudahan awam, rumah dan lain-lain lagi adalah sangat penting kerana nyawa manusia terlibat. Jika terdapat kelemahan ketara pada konkrit sesebuah bangunan, maka malapetaka akan berlaku.

Kertas project ini meninjau ke atas kebolehkerjaan konkrit baru, mengkaji kekuatan mampatan konkrit terkeras yang berlainian gred, dan menganalisis data yang menunjukkan kesan-kesan daripada pengawetan konkrit terhadap kekuatan mampatan konkrit. Tambahan pula, dalam kertas projek ini, kajian dilakukan untuk mengkaji kesan-kesan jenis pengawetan yang mempengaruhi kekuatan mampatan konkrit.

Pemrosesan konkrit ini adalah berdasarkan British Standard. Cara pengawetan konkrit adalah berdasarkan BS 1881: Bahagian 1112: 1983. Piawaian yang ditetapkan di British Standard adalah pengawetan di dalam air sahaja. Dalam kertas project ini, pengawetan cara suhu sekeliling dalam bilik, dilakukan bersama yang pengawetan secara air. Ini adalah untuk mengkaji kepentingan air terhadap proses penghidratan dalam konkrit demi meningkatkan kekuatan sesebuah konkrit. Kedua-dua cara tersebut diatas digunakan untuk membandingkan cara pengawetan yang mempunyai proses penghidratan yang paling sempurna dalam menghasilkan konkrit yang paling kuat. Konkrit diawet selama 3, 7 dan 28 hari. Kemudian kekuatan mampatan mereka akan diambil untuk dianalisis, dan mendapatkan perbezaan di antara kedua-dua cara tersebut.



## ABSTRACT

The research results state the importance of making good quality of concrete. Due to high-rise buildings, infrastructure, houses and so forth, all need good concrete, because human life is involved, for if the strength of concrete should fail in a building, then disaster might strike.

The paper presents the following points aiming to obtain the basic data to determine the workability of fresh concrete, the compressive strength of different grade of concrete and the effects of curing upon the compressive strength of the concrete. The research is more on the curing effect on the compressive strength of the concrete.

The making of concrete in this work is in accordance with British Standard. The curing method is in accordance with BS 1881: Part 1112: 1983. The standard method used in this is by curing in water. Then in this paper, curing by room temperature was added, in order to examine the influence of water towards the hydration process more clearly. In this way, we can determine the important of water in strengthening the concrete. These two methods are to determine how to provide the best method for the complete hydration of the concrete so as to give it maximum strength. The concretes are cured for 3, 7 and 28 days. Their compressive strength is tested and the data was analyzed, to investigate the difference of the two different curing methods.