PERSATUAN KEBANGSAAN KONKRIT SIAP BANCUH MALAYSIA
NATIONAL READY-MIXED CONCRETE ASSOCIATION OF MALAYSIA

ADVANCED KNOWLEDGE IN CONCRETE TECHNOLOGY

Date : 11th & 12th Sept 2012 (Tuesday & Wednesday)
Time : 9 am to 5 pm
Venue : NRMCA Training Room

Who Should Attend

- Supervisory & Management personnel in ready-mixed concrete industry.
- Clerks-of-work / construction site supervisor.
- QA / QC engineers, consultants & architect representatives.
- JKR engineers.

Course Fees

- RM950.00 per participant for NRMCA Members. RM1,100 for non members.
- Fees inclusive of training materials, lunch, morning and afternoon breaks.
- Please pay in favour of "NRMCA" and assist to bank in to Hong Leong Bank accounts No. **369 0000 5264**
- Kindly fax the bank in slip together with your address to Mr. Leong at 603 7960 7882 or email to finance@novabizservices.com in order for NRMCA to identify your payment and issue receipt accordingly.
- All payments are to be made on or before **01 Sept 2012.**

Venue of Training: Training Room, NRMCA, Kota Damansara,
13-1, 1st Floor, Jalan Sepah Puteri 5/1B,
Pusat Dagangan Seri Utama PJU 5,
Kota Damansara, 47810 Petaling Jaya,
Selangor Darul Ehsan, Malaysia.
(Location map attached)

SBL Scheme

Companies must apply directly to HRDF. SBL Scheme will be based on the individual merit of each application.

Pre-requisite : **NRMCA Intermediate Knowledge in Concrete Technology**

Duration : 2 Days

Course Structure : 8 Modules class room based.

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Trainer: Mr. Parnam Singh

Mr. Parnam Singh graduated from the Queen's University of Belfast (UK) in 1989. He has more than 12 years of experience in the assessment and repair of concrete structures. During his years of service, he has had the opportunity to undertake works related to in-situ concrete testing, condition assessment, repair and strengthening of existing reinforced concrete structures. He is currently the Manager of RNC Technology (M) Sdn. Bhd., leading a team of Engineers and Supervisors specializing in assessment and repair. Mr. Parnam Singh has published more than twenty technical papers which were presented at National and International Conferences. He is also a Committee Member of Persatuan Konkrit Malaysia (PERKOM) and ACI (KL Chapter). Mr. Parnam Singh is a Civil Engineer by profession and he is currently pursuing a PhD course in Civil Engineering in Universiti Malaya.

Course Objectives

This course is designed for personnel engaged in the ready mixed concrete industry. It is a further development of the NRMCA Intermediate Level Course in Concrete Technology. The first objective of this course is to expose participants to a series of new generation additives and materials for concrete. Properties of fresh concrete including a detailed description of the different parameters related to bleeding and setting time of concrete are also included in the course. Factors related to testing are discussed in detail to highlight the need to understand the importance of proper test procedures for both fresh and hardened concrete. For compliance testing and interpretation of cube and core samples reference is made to the latest JKR specifications. In this course an attempt is also made to explain the essentials of concrete waterproofing which is useful when dealing with challenges related to concreting of basements and water retaining structures. Proper curing and protection of concrete which is extremely important for durable concrete is discussed in detail with emphasis on the need for a safe work place and environmental best practice in concrete delivery. Finally, problems and solutions related to poor quality concrete are highlighted to equip participants with best practice guidelines for addressing issues related to poor quality concrete.

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Course Outline

Day 1

Introduction and Pre-Course Assessment

- **Module 1: Concrete Technology**; types of cement, admixtures special additives and new generation materials
- **Module 2: Properties of Fresh Concrete**; setting time, bleeding, hydration, drying shrinkage, plastic shrinkage
- **Module 3: Control Tests and Tolerances**; sampling, slump test, compacting factor test, vebe test, bleeding of concrete, cube test, indirect tensile test, creep test
- **Module 4: Interpretation of Cube and Core Test Results**; how to interpret results for compliance testing based on JKR specs.

Day 2

- **Module 5: Concrete Waterproofing**; properties of concrete, porosity, permeability, special additives and new generation materials for concrete waterproofing
- **Module 6: Curing and Protection of Concrete**; hot weather concreting, curing techniques, causes and prevention of cracks, protecting concrete against premature deterioration
- **Module 7: Work place Safety and Environment**; work place safety and hazards, basic safety precautions for concreting, environmental best practice in concrete delivery, placing and disposal
- **Module 8: Common Problems and Solutions**; shrinkage, excessive bleeding, durability, dusting, surface crazing, random cracking, repairing cracks in concrete