Inspection, Assessment & Repair Of Concrete Structure Training program

Introduction

The assessment of the reinforced concrete structure is now a main challenge to the civil engineer. The repair of the reinforced concrete structures has development in the recent years due to the new technology of the materials and the techniques of maintenance and repair

Objectives

- The participants will be provided with detailed course material and will be familiarized with various features on concrete construction.
- Provide participants with required information about the newly developed reinforced concrete materials.
- Help them understand the different test methods for various materials and interpret their test results.
- Assist participants to effectively consult the technical specifications of these materials.
- Provide them with troubleshooting methods for material-related problems.

Who Should Attend?

This course is designed for construction civil and structural and project engineers

Methodology

This interactive Training will be highly interactive, with opportunities to advance your opinions and ideas and will include;

- Lectures
- Workshop & Work Presentation
- Case Studies and Practical Exercise
- Videos and General Discussions

Certificate

BTS attendance certificate will be issued to all attendees completing minimum of 80% of the total course duration

Contents

Building Evaluation

- Inspection and evaluate the buildings
- Methods of Inspection
- Visual inspection criteria
- Inspect the building using a new techniques
- Using ultrasonic and infrared for inspection.
- Evaluate the building risk
- Diagnoses the reason of deterioration

Defects installation and materials

- Durability effect due to concrete component
- Concrete pouring problems
- Design problem affecting durability

Corrosion phenomena

- Chloride induce corrosion
- Carbonation induce corrosion

Non –Destructive Testing

- Core test
- Lok test
- UT concrete test
- Schmidt hammer test procedure
- Load test
- Concrete cover test
- Phenol phethaline test
- Chloride test

Successful steps for repairing R.C. structure

- Define the method of repair
- Precaution during repair
- Selecting the materials repair
- Step by step repair procedure
- Corrosion and protection of steel structure in concrete
- Methods of protection
- Cathodic protection
- Comparison between different type of protection.

Properties of protective coating.

- Evaluate the current protective coating
- Types of protective coating
- Properties of each type
- Precautions in using the coating
- Types of cracks in R. C. structures
- Comparison between different cracks
- Reasons for each type
- Methods of repair and prevent for each type.

Methods of repair the cracked structure Corrosion.

- Materials using to repair corroded structure
- Methods of repair
- Using polymer bonding materials
- Types of polymer
- Properties of these materials
- Case Study: Repair of ring beam for oil storage tank
- Case Study: Repair of foundation under equipment

Maintenance strategy

- Likelihood of building failure
- Define consequences of failure
- Provide risk matrix
- Risk based inspection (RBI)
- Maintenance plan and strategy
- Maintenance plan based economic cost
- Preparing priority lists
- Software for maintenance strategy
- Case study