Construction Quality Control On Site

INTRODUCTION

- Structural engineers are encountering many problems due to the hot climate and the other environmental conditions. Quality control in construction of the reinforced concrete structure is a complete function which involves management, statistics and engineering. In a hot climate, it needs more precaution in concrete industry and on the construction of the building to match with the requirement to this weather. All the examples and real case studies for oil and gas projects.
- In this Construction Quality Control on Site training course will focus on using the statistics as a tool to control all the activities of the construction projects, especially the concrete product. The quality control of the concrete is illustrated in scope of the different codes and specifications.
- This Civil & Construction Engineering training course will deliver a state-of-art methodology to control the concrete quality, introduces ways to control the specification recommendations in detail, and all the new modern the techniques and methodology used in concrete industry to enhance the concrete quality. This training course on Construction Quality Control on Site will cover the main QC concept for shell specs and other international oil and gas companies.

This training course will feature:

- Different codes and standards for Quality control
- Quality control test (video presentation)
- Effects of quality in project sustainability
- Main skills and required knowledge for QC On Site
- QC procedure for concrete in a hot climate
- QC for steel structure activities

OBJECTIVES

By the end of this training course, participants will:

- Familiarise all quality management techniques and procedures
- Learn available non-destructive testing for concrete and steel structure projects
- Understand the practical tools to control the concrete and the whole project that includes field-testing and the required laboratory facilities
- Familiarise various techniques for evaluating the structures under construction
- Learn modern field measurements such as concrete strength
- Familiarise with all quality control techniques in hot climate

TRAINING METHODOLOGY

- This Construction Quality Control on Site training seminar will utilize a variety of proven adult learning techniques to ensure maximum understanding, comprehension and retention of the information presented. The daily workshops will be highly interactive and participative. Videos and photos will be used for illustration.

ORGANISATIONAL IMPACT

- Improve the organization projects output by enhancing the quality of engineering review
- Reduce the organization expenses by new idea for maintenance scheme
- Improve the organization investment by knowing the Up to date technology in QC and its practically in real project
- Improve the projects investment by define the way to have a durable structure by better design, construction or maintenance

PERSONAL IMPACT

- Enhance the design capability of the trainee
- Increase knowledge of up to date of execution phase
- Increase the skill for maintenance approach
- Increase the skill to enhance quality of all phases of the oil and gas projects

WHO SHOULD ATTEND?

- This training course is intended for professionals responsible for the Quality Control and Quality Assurance, with the most recent non-destructive testing for concrete and steel structure.

This training course on Construction Quality Control on Site is also beneficial for:

- Structural and Civil Engineers
- Construction Engineers
- Project Managers
- Construction Managers
- Quality Assurance and Quality Control Professionals

Course Outline

Introduction Total Quality Management (TQM) of Concrete

- Total Quality Management System
- Quality Assurance & Quality Control
- Who will perform the quality control?
- Quality Management constrain in Oil and Gas Projects

- Pareto Chart
- How to control the concrete from ready mix plant?

Components of Concrete Material

- Codes Recommendation for the Quality Control
- Codes and Specifications Limitations as ACI and EN
- Comparison on Different Non-destructive Testing
- The Nature of Concrete Variability
- Preparation before Concreting
- Concrete Materials Properties such as Aggregate and Cement
- Check the Corrosion in Steel Bars
- Example of QC of Concrete Foundations Construction under Vibrating Machine

Properties of Fresh Concrete

- Basic Statistics
- Collecting a Data for Evaluations
- Statistics for the Quality Control Data
- Evaluating the Grade of the Quality
- Concrete Design Mix
- Precaution in Design Mix in Hot Climate for Remote Area
- QC for Fresh Concrete
- Quality Control for Concrete Formwork
- Pouring Concrete in Hot Weather Problems
- Workability Test for Concrete
- Cube and Cylinder Test
- The Replacement of the Steel Bars
- The Permissible Deviation in Erection Steel Structure
- Applied Load on the Steel Structure of Pipe Rack in Construction Activities

Comparison between Different Non-destructive Tests

- Comparison between Different Fresh Concrete Tests
- Core Test
- Rebound Hammer
- Lok Test
- Load Test for Floor Deck under Machine
- Ultrasonic Test
- Corrosion Phenomena Affect Quality
- Different Corrosion Protection System
- QC for Corrosion Protection System for Oil and Gas Plant
- Applying QC on Wood Formwork and Steel
- Steel Reinforcing QC
- Procedure of QC Onsite

- QA/QC Case Study for Foundation in Gas Plant

Integrity Management

- Materials Used in Welding Steel Structure
- QC for Equipment Preservation and Installation for Static Equipment
- QC for Tank Construction
- QC for Foundation Construction and Machine Installation
- The Precaution in Welding Process
- Anchor Bolts QC
- The Reasons of Welding Defects
- Overview of the 5 Methods (PT,MP,RT,UT,VI)
- Integrity Management System for Oil and Gas Plants