

WebCorr Corrosion Consulting Services Presents

Cathodic Protection of Reinforced Concrete Structures

Date: As published on website Venue: As published on website

Course Overview

Development in anode materials for cathodic protection has made CP the most cost-effective technology in corrosion control and prevention for reinforced concrete structures. National and international standards on the cathodic protection of steel in reinforced concrete have been available for over a decade. This 5-day corrosion short course focuses on the design, installation, commissioning, operation and maintenance of cathodic protection systems for reinforced concrete structures. Application examples and real-life case studies will be presented to demonstrate the effectiveness of this proven technique.

This corrosion short course is available for on-site or in-house training, course-on-demand, online and distance learning worldwide. It can also be customized to meet the specific needs of your organization.

Who Should Attend

- Engineers, architects and designer who are concerned with the durability and cathodic protection of reinforced concrete structures;
- Building inspectors and surveyors who are interested in corrosion damages in concrete structures;
- Technicians and maintenance personnel who deal with repair and rehab of reinforced concrete structures;
- Facility owners and users who are concerned with corrosion and method of mitigation

Course Outline

1. Corrosion Basics
2. Causes of Corrosion in Reinforced Concrete Structures
3. Cathodic Protection of Reinforced Concrete Structures
 - 3.1 Principles of cathodic protection and its application to steel in concrete
 - 3.2 Cathodic protection system components
 - 3.3 Anode systems
 - 3.3.1 Galvanic anodes
 - 3.3.2 Impressed current anode



- 3.4 Monitoring sensors
- 3.5 Monitoring instrumentation
- 3.6 Data management system
- 3.7 D.C. cables
- 3.8 Junction boxes
- 3.9 Power supplies
- 3.10 Transformer-rectifiers
4. Design Process
 - 4.1 Conceptual design
 - 4.2 Reinforcement electrical continuity
 - 4.3 Anode system type and rating
 - 4.4 Cathodic protection zones
 - 4.5 Cathodic protection current density requirements
 - 4.6 Design issues for buried/immersed concrete structures
5. Protection Criteria
 - 5.1 Understanding BS EN ISO 12696:2012 -Cathodic Protection of Steel in Concrete
 - 5.2 Understanding NACE SP 0290: Cathodic Protection of Reinforcing Steel in Atmospherically Exposed Concrete Structure
 - 5.3 Understanding NACE SP 0187: Design Considerations for Corrosion Control of Reinforcing Steel in Concrete
 - 5.4 Understanding Australian Standard AS 2832-5 Cathodic protection of metals - Part 5: Steel in concrete structures

Course Outline

- 5.5 Innovative Cathodic Protection systems for various concrete structures
- 5.6 Sacrificial anode cathodic protection systems
- 5.7 Anodes selection for impressed current Cathodic Protection systems
- 5.8 Effectiveness of Cathodic Protection in concrete structures
- 5.9 Optimization of Cathodic Protection systems for concrete structures
- 6. Installation procedures
 - 6.1 Electrical continuity
 - 6.2 Performance monitoring system
 - 6.3 Connections to steel in concrete
 - 6.4 Concrete repairs associated with the cathodic protection components
 - 6.5 Surface preparation for anode installation
 - 6.6 Anode installation
 - 6.7 Connections to the anode system
- 6.8 Anode overlay, surface sealant or decorative coating application
- 6.9 Electrical installation
- 6.10 Testing during installation
- 7. Commissioning
 - 7.1 Visual inspection
 - 7.2 Pre-energizing measurements
 - 7.3 Initial energizing of impressed current systems
 - 7.4 Initial adjustment of impressed current systems
 - 7.5 Initial performance assessment
 - 7.6 Criteria of protection: Interpretation of performance assessment data
 - 7.7 Adjustment of protection current for impressed current systems
- 8. Operation and maintenance
- 9. Design Exercises
- 10. End-of-Course Examination

Course Registration

Please register online at www.corrosionclinic.com
Or use the form below (photocopies of this form may be used for multiple bookings).

Dr/Mr/Ms _____

Organization _____

Contact Person _____

Contact Dept _____

Telephone _____ Fax _____

Email _____

Payment should be made by TT or online banking. Currencies in Australian Dollar, Canadian Dollar, US Dollar, Euro and Sterling Pound can be transferred directly without conversion. Our bank details can be found at the link below:

<https://www.corrosionclinic.com/payment.html>

Course Fee and Discount

Standard: \$4,950 **Discount:** \$4,455

The fee includes a hardcopy of course note, certificate, light lunch, coffee breaks each day during the course.

Discount applies to a group of 3 or more persons from the same organization registering at the same time, or early-birds making payment at least 8 weeks before the course commencing date.

Cancellation and Refunds

Cancellation or replacement should be conveyed to WebCorr in writing (email or fax). An administration charge of 50% of the course fee will be levied if the cancellation notice is received from 14 to 7 days before the course commencing date. No refund will be made for cancellation notice received 6 days and less. No refunds will be given for no-shows. Should WebCorr find it necessary to cancel a course, paid registrants will receive full refund. Refund of fees is the full extent of WebCorr's liability in these circumstances.

