WebCorr
CORROSION CONSULTING
SERVICES

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• Consulting • Training • Expert Witness • Failure Analysis • Design Review • Corrosion Test • Modeling • Coatings • Materials • Cathodic Protection

WebCorr Corrosion Consulting Services Presents

Concrete Corrosion: Causes and Prevention

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

Course Overview

The corrosion of reinforcing steel in concrete structures such as buildings, car parks, concrete marine structures, road beds, bridge decks and bridge substructures is a world-wide problem and leads to cracking, staining, spalling from the surface and ultimately structural weakness. Repairs to badly deteriorated areas are costly and there is no guarantee that the problem has been solved as the conditions for continuing corrosion may have been built into the structure. This corrosion short course systematically and thoroughly covers the causes of corrosion in buildings and other concrete structures, and the practical prevention methods ranging from coatings and corrosion inhibitors to cathodic protection. This corrosion short course can be taken as in-house training course, online course and distance learning course 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 corrosion 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 & Society
- 1.1 The economic, social, political and environmental impacts
- 1.2 Liabilities due to corrosion

2 Basic Concepts in Concrete Corrosion
- 2.1 Why do metals corrode
- 2.2 How do metals corrode
- 2.3 Terminologies and conventions
  - 2.3.1 Corrosion, pH, potential, reference electrode, potential-pH diagram, passivation, anode, cathode, cathodic protection, galvanizing, etc
  - 2.3.2 Effect of Moisture
  - 2.3.3 Effect of chloride
  - 2.3.4 Effect of carbonation

3 Processes in Concrete Corrosion
- 3.1 Corrosion of steel in aqueous environment
- 3.2 The nature of concrete environment
- 3.3 Corrosion of steel in concrete
- 3.4 Actions from aggressive species chloride, carbon dioxide, sulphate, and soft water action
- 3.5 Potential difference
- 3.6 Corrosion reactions
- 3.7 Ionic flow
- 3.8 Autocatalytic process

4 How to Control & Prevent Concrete Corrosion
- 4.1 Concrete quality porosity, permeability, depth of cover, water/cement ratio,and chloride content
- 4.2 Patching practices
- 4.3 Membranes and sealers
- 4.4 Corrosion inhibitors
- 4.4 Epoxy coating
- 4.5 Galvanizing (zinc coating)
- 4.6 Cathodic protection

5 Testing and Monitoring Concrete Corrosion
- 5.1 Half-cell potential survey
- 5.2 pH measurement
- 5.3 Corrosion rate measurement
- 5.4 Corrosion sensors for concrete structures

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: $2,500 **Discount**: $2,250

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.

WebCorr has NACE certified Corrosion Specialist (#5047) providing customized in-house training, online and distance learning corrosion courses, corrosion seminars and workshops on corrosion, materials, metallurgy, paints and metallic coatings. Our corrosion courses are developed and taught by NACE certified Corrosion Specialist with over 30 years of practical experience in the field. Our training success is measured by your learning outcome.