



WebCorr Corrosion Consulting Services Presents

Corrosion Control by Materials Selection and Design

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

Course Overview

Proper selection of materials and design are most effective in cutting the cost of corrosion and achieving low cost reliability as corrosion can be designed out of the system. It is always easier and cheaper to erase lines on a drawing than to repair or replace failed equipment or components in service. The theme throughout the course is how to put the right material in the right place in the right way. Practical rules in selection of materials and design guidelines against many different types of corrosion will be presented. Numerous case histories of real-life problems and practical solutions will be discussed. This 5-day corrosion short course is available for in-house training, online and distance learning worldwide. It can also be customized to meet the specific needs of your organization.

Who Should Attend

This 5-day corrosion short course provides an excellent avenue for corrosion practitioners, researchers, designers, technical managers, inspection and maintenance engineers, quality control personnel and those involved in failure analysis to update their appreciation of corrosion prevention through materials selection and design.

Course Outline

- 1.1 Introduction to corrosion control
- 1.2 Importance of design in corrosion prevention
 - 1.2.1 Materials selection
 - 1.2.2 Process parameters
 - 1.2.3 Construction parameters
 - 1.2.4 Geometry for drainage
 - 1.2.5 Dissimilar metals
 - 1.2.6 Crevices
 - 1.2.7 Corrosion allowance
 - 1.2.8 Operating lifetime
 - 1.2.9 Maintenance and inspection requirements



- 1.3 Effects of design and material selection
 - 1.3.1 Designer's role in controlling corrosion
 - 1.3.2 Equipment Service Life Factors
 - 1.3.3 Frequency of Corrosion Failures
 - 1.3.4 Corrosion Rate Derivation and Calculation
- 2.1 Practical corrosion cells encountered in design
 - 2.1.1 Galvanic cell
 - 2.1.2 Concentration cell & differential aeration cell
 - 2.1.3 Active/Passive Cell
 - 2.1.4 Thermogalvanic Cell and temperature cell
 - 2.1.5 Stress cell
- 2.2 Basic metallurgy for materials selection
- 3.1 Materials selection for corrosion control
 - Metals and Alloys
 - 3.1.1 Cast irons
 - 3.1.2 Carbon steels
 - 3.1.3 Low alloy steels
 - 3.1.4 Stainless steels
 - 3.1.5 Duplex stainless steels
 - 3.1.6 Nickel and nickel-base alloys
 - 3.1.7 Copper and copper alloys
 - 3.1.8 Aluminium and aluminium alloys
 - 3.1.9 Titanium and titanium alloys
- 4.1 Materials selection for corrosion control
 - Non-metals
 - 4.1.1 Concrete
 - 4.1.2 Plastics

Course Outline

- 4.1.3 Elastomers
- 4.1.4 Ceramic materials
- 4.2 Compatibility of materials and environments
 - 4.2.1 The effects of environment on corrosion
 - 4.2.2 Materials for high temperature corrosion
 - 4.2.3 Matching materials performance to environ.
- 5.1 Design solutions to corrosion problems based on types of corrosion
- 5.2 Design solutions to corrosion problems based on fabrication techniques & environmental conditions

- 5.2 Specifications and guidelines
 - 5.2.1 Specification writing for max corr resistance
 - 5.2.2 International standards relevant to materials selection and design
 - 5.2.3 What the designer should remember when writing specifications
- 5.3 Design against corrosion: the DOs and DON'Ts
- 5.4 Exercise and practical session
- 5.5 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.
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.



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.