

Certificate of Competence in Cathodic Protection of Reinforced Concrete

By Distance Learning

BS EN ISO 15257 Level 2*



*Successful completion of this course prepares and allows student to sit the BS EN ISO 15257 Level 2 reinforced concrete cathodic protection examination with the Institute of Corrosion as part of certification.

Introduction

Corrosion of steel in concrete is a major threat to infrastructure the world over. Cathodic protection is recognised as an economical method of repairing concrete subject to the commonest cause of corrosion. In order to address the levels of technical competence required to carry out a successful installation a British, European and International Standard has been produced (BS EN ISO 15257) that outlines the levels of training and education required for personnel. There are 5 levels of personnel described in the standard. On a simple basis, Level 4 personnel produce designs and specifications for cathodic protection systems and interpret results, Level 3 personnel are senior technicians and produce method statements that Level 2 personnel (Technicians) follow. The standard also outlines the four sectors that cathodic protection is employed, i.e. reinforced concrete, buried and submerged structures, immersed structures and tank internals.

In response to this the Institute of Corrosion and the Corrosion Prevention Association have combined to produce a syllabus, course notes and examination that achieve the requirements of BS EN ISO 15257. This course relates to Level 2 certification for cathodic protection personnel in reinforced concrete.

Distance Learning Training Modules For the award of the Certificate of Competence

All five modules must be completed, together with coursework (short report/analysis). A certificate of achievement will be awarded upon satisfactory completion of each module. Start dates are flexible. A number of practical experiments are described. In order to undertake these experiments a digital voltmeter will be required along with some common metals, specifically iron, stainless steel, galvanised steel, copper and carbon (pencil leads).

The course has been prepared in conjunction with the Institute of Corrosion Professional Development and Training Committee and the Corrosion Prevention Association.

The certificate will demonstrate the required level of training has been achieved in accordance with BS EN ISO 15257 Level 2 cathodic protection technician for reinforced concrete. In order to become a certificated level 2 cp technician in reinforced concrete an exam must be sat. The exam is provided by the Institute of Corrosion's course provider. Currently this is I Mech E Training Solutions, based on Rotherham, UK. The exam must be sat at their examination centre in Rotherham. Individual modules may be undertaken for CPD purposes.

Modules 1 to 3 represent the core subjects for cathodic protection. Modules 4 and 5 represent the sector specific items.

Each module will involve approximately at least 10 hours of study.

The formal assessment will form part of the 10 hours of study including coursework. An external examiner will review the coursework.

Start dates are flexible, with modules due for completion within 30 working days of receiving the course materials.

Module 1

Module 1 comprises a brief introduction to corrosion and corrosion protection methods in common usage, explaining the benefits and uses of cathodic protection. This is followed by a short description of Quality Assurance and Control, and the documentation likely to be encountered when working on cathodic protection, including method statements, risk assessments, specifications and relevant international standards.

This is followed by an introduction to basic chemistry and corrosion, discussing the relevant terminology likely to be encountered in corrosion and cathodic protection. It provides an introduction to corrosion explaining the key terms in common usage and the role of current and potentials in corrosion, measurement of potentials, the galvanic series, the common types of corrosion and factors influencing the rates of corrosion.

It includes a description of an experiment to produce a galvanic series of some common materials in a number of electrolytes.

Module 2

Module 2 provides the basic relevant items of electrical theory relevant to corrosion, including series and parallel circuits, current flow, voltage and resistance and the relationship between them, including the measurement of current and voltage in a circuit. A number of simple experiments are described to investigate these laws.

This is followed by a review of the types of records normally required during cathodic protection installation that are relevant to the Level 2 CP technician.

Module 3

Module 3 provides a more detailed introduction to corrosion protection methods and cathodic protection and the types of structure that normally receive cathodic protection. In addition problems associated with cathodic protection, such as interference and interaction are also introduced.

Module 4

Module 4 provides an introduction to concrete, explaining the requirement for reinforcement, the reasons that corrosion occurs and the consequences of corrosion. It then moves on to discuss cathodic protection and the systems in common usage. These include galvanic and impressed current anodes, surface applied systems such as mesh and overlay systems and coatings, and embedded systems such as discrete anodes.

Module 5

Module 5 discusses the types of equipment used for testing and the monitoring normally required for corrosion of concrete and cathodic protection systems. Included are cover surveys, dust sampling, carbonation tests, delamination surveys, half-cell potential surveys, continuity testing and interaction testing.

CONTACT

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Please enrol me on the following components of the 'Cathodic Protection of Reinforced Concrete' course, (Subject to terms & conditions)

Module # 1 @ £255 Module # 2 @ £255 Module # 3 @ £255

Module # 4 @ £255 Module # 5 @ £255

All modules@: £1150.00

Please send all correspondence to:

Aston CPD Centre, Aston House, 6 Greville Drive, University, Birmingham, B15 2UU

Please reserve place(s) at the 'Cathodic Protection of Reinforced Concrete' course – as indicated above.

Delegate Name(s).....

Company

Address

.....

Tel No: Fax No:

Email Address:.....

Do you wish to be invoiced? YES/NO.....

Purchase Order No:

Invoice address if different from above.....

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Total Cost £.....being for Module 1 2 3 4 5

All five modules @ £1150.00

(Cheques should be made payable to Aston CPD)