

**Certification Scheme for**  
**Competence Assessment of**  
**Cathodic Protection Personnel**  
**in accordance with BS EN ISO 15257**

**Including Training, Examination, Competence and Experience Assessment**  
**and Certification**



**On land metallic structures**

**Marine metallic structures**



**Reinforced concrete structures**

## **Certification Scheme for Cathodic Protection Personnel**

**NOTE: The ICorr Training, Competence Assessment and Certification Scheme in accordance with BS EN ISO 15257: 2017 will be in place in late 2018. The existing Certification Scheme operated by the Institute of Corrosion is to BS EN 15257:2006. Certificates issued in accordance with EN 15257 will remain valid also as ISO 15257 equivalents until recertification. The EN 15257 scheme has 3 Levels which will equate as follows to the ISO Standard Levels:**

Existing BS EN 15257:2006	New BS EN ISO 15257:2019
None	Level 1 Cathodic Protection Tester/Data Collector
Level 1 Cathodic Protection Technician	Level 2 Cathodic Protection Technician
Level 2 Senior Cathodic Protection Technician	Level 3 Senior Cathodic Protection Technician
Level 3 Cathodic Protection Specialist	Level 4 Cathodic Protection Specialist
None	Level 5 Cathodic Protection Expert

The courses, as detailed above for BS EN 15257:2006, are presented by our Course Provider, IMechE Engineering Training Solutions at their Sheffield Training Facility or at other locations where specified. See their website <http://trainingsolutions.imeche.org> for further details and Course schedules.

The existing courses and controlling documentation are currently being upgraded to meet the requirements of the ISO Standard and will be available later this year.

Existing certificated personnel certificates provided according to EN 15257 within a maximum of two years after publication of the ISO Standard remain valid also as ISO 15257 equivalents as above until the next mandatory step in the ISO 15257 certification process, i.e. recertification. At that time, individuals desiring certification according to ISO 15257 will be required to meet the requirements of this Standard.

## Certification Scheme for Cathodic Protection Personnel

### Introduction

The Institute of Corrosion (ICorr) Competence Assessment and Certification Scheme for Cathodic Protection Personnel is set up to provide training courses and the certification of personnel working in the field of cathodic protection

The existing EN 15257: 2007 compliant ICorr Certification Scheme is being revised to be in compliance with ISO 15257:2017 – “Cathodic protection — Competence levels of cathodic protection persons — Basis for a certification scheme” and enables the competence of cathodic protection (CP) persons carrying out cathodic protection survey, design, installation, testing and maintenance work to be defined and verified through training, examination and assessment.

### What is Certification?

Certification of Competence of cathodic protection personnel is a requirement for the cathodic protection industry throughout the world in accordance with ISO 15257:2017. The **ICorr Certification Scheme** is the UK National Certification Scheme set up to provide training, to evaluate the competence levels of personnel by examination and assessment of experience and issue Certification in accordance with ISO 15257:2017.

### Who needs this Certification?

All personnel i.e. Data Collectors, Technicians, Senior Technicians/Junior Engineers, Field Engineers, Designers and Consultants carrying out cathodic protection duties such as survey, design, installation, testing, monitoring and maintenance.

### What Levels of Certification are there?

- **Level 1 Cathodic Protection Tester/Data Collector**
- **Level 2 Cathodic Protection Technician**
- **Level 3 Senior Cathodic Protection Technician**
- **Level 4 Cathodic Protection Specialist**
- **Level 5 Cathodic Protection Expert**

### What are the four application Sectors?

- **On-land metallic structures,**
- **Marine metallic structures,**
- **Reinforced concrete structures,**
- **Inner surfaces of metallic container structures.**

### How do I obtain Certification?

Certification is given to those personnel that meet the criteria of training and experience within the relevant application sector, following assessment of competence in accordance with ISO 15257.

**Level 1 Cathodic Protection Tester/Data Collector.** This course is under preparation in the on-land metallic structures Sector and will be available soon.

**A Level 2 Cathodic Protection Technician** is required to take and pass the Level 2 Course run by the Institute, or approved equivalent, and complete a minimum of one year’s reviewed experience in cathodic protection.

**A Level 3 Senior Cathodic Protection Technician** is required to take the Level 3 Course run by the Institute or approved equivalent and complete a minimum of four years’ reviewed experience in cathodic protection. This period is reduced if applicants have higher level education

**A Level 4 Cathodic Protection Specialist** is required to complete the application forms and submit samples of his design work and career details for evaluation and complete a minimum of twelve years’ experience in cathodic protection. This period is reduced if applicants have taken related higher level education. Within the ISO compliant Scheme, there will be an examination. The applicant may be required to attend an interview.

## **Certification Scheme for Cathodic Protection Personnel**

**At present ICorr does not provide assessment and Certification for Level 5.**

Full details are given in the “Requirements for the Certification of Cathodic Protection Personnel” (ICorr Qualification Procedure Document (CP)) document available from ICorr.

Application forms are to be available in the ICorr Website:<http://www.icorr.org>

The training courses have been designed to cover the all the competence requirements for the relevant Levels and Sectors as detailed in the Standard.

ICorr has established the Certification scheme in accordance with ISO/IEC 17024.

ISO 15257:2017 (formerly BS EN 15257:2006) constitutes a suitable method of assessing competence of cathodic protection personnel. Competence of cathodic protection personnel to the appropriate level for tasks undertaken can be demonstrated by certification in accordance with this Standard.

Personnel who undertake the design, supervision of installation, commissioning, supervision of operation, measurements, monitoring inspection, and supervision of maintenance of cathodic protection systems shall have the appropriate level of competence for the tasks undertaken. Design activity, except the most simple schemes, requires Certification to Levels 4 or 5 within the ISO compliant Scheme.

The relevant application sectors cover:

- on-land metallic structures,
- marine metallic structures,
- reinforced concrete structures
- the inner surfaces of metallic container structures.

**ISO 15257:2017 is now a requirement for the cathodic protection industry throughout the World and should be recognised and specified by all Companies involved in the application of cathodic protection.**

It is therefore incumbent upon all Companies operating cathodic protection systems to ensure that the personnel working on these systems are Certificated to the Level appropriate for the work being carried out and the industry Sector into which the application falls. This includes Cathodic Protection Contractors, Designers and Consultants and all Companies owning or operating facilities with installed cathodic protection systems. Where specialist cathodic protection services have been contracted out, it is essential for the operating companies to ensure that the personnel employed by them or provided by Consultants/Designers/Contractors/Sub-contractors hold the necessary Certification of Competence Levels appropriate for the work. The success of the Scheme and the reputation of the cathodic protection personnel and industry, as a whole, will depend on the commitment to and ownership of the requirements of this Standard by the cathodic protection industry and the Clients it serves. Proof of Competence by Certification is an important aspect of Risk and Asset Management.

### **What is ISO 15257?**

ISO 15257:2017 - Cathodic protection — Competence levels of cathodic protection persons — Basis for a certification scheme. This Standard is aimed at enabling the competence of personnel carrying out cathodic protection studies, designs, execution work, inspections and maintenance work to be defined, verified and certificated.

The Standard defines the Competence Levels of personnel within a given application Sector and a framework for the training and Certification of the personnel to reach and demonstrate the required competence levels. Certification is required separately for each application sector.

## **Certification Scheme for Cathodic Protection Personnel**

The following is an abstract from the Scope of ISO 15257:

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### **Scope**

*This International Standard defines five levels of competence (detailed in section 4) for persons acting in the field of cathodic protection (CP), including survey, design, installation, testing, maintenance, research and development, and technical advancement. It specifies a framework for establishing these competence levels and their minimum requirements.*

*Competence levels apply to each of the following application sectors:*

- *on-land metallic structures;*
- *marine metallic structures;*
- *reinforced concrete structures;*
- *inner surfaces of metallic structures containing an electrolyte.*

*These application sectors are detailed in section 5.*

*This International Standard defines the requirements to be used for establishing a certification scheme as defined in ISO/IEC 17024. It is not mandatory to apply all of the levels and/or application sectors. This certification scheme is detailed in normative Annexes A, B and C.*

### **Certification Levels**

The scheme covers five levels of personnel:

- Level 1 Cathodic Protection Data Collector (or Tester)
- Level 2 Cathodic Protection Technician
- Level 3 Senior Cathodic Protection Technician
- Level 4 Cathodic Protection Specialist
- Level 5 Cathodic Protection Expert;

#### **Level 1, Cathodic Protection Data Collector (or Tester)**

Level 1 CP persons shall be competent to collect simple CP performance data and perform other basic CP tasks in accordance with technical instructions and procedures produced by Level 3 or higher persons and record the data to a format produced by Level 3, or higher persons and under their responsibility.

Level 1 persons shall not be responsible for analysing the data. Level 1 persons shall understand the fundamentals of the measurements that they are required to undertake, the common causes of errors in these measurements and the related safety issues. The measurements shall include routine system function measurements, as well as a limited number of specific measurements to determine the performance effectiveness of CP systems.

**Level 1 is not currently assessed by ICorr, but this is anticipated to be introduced in 2019**

#### **Level 2, Cathodic Protection Technician**

In addition to the competencies for Level 1 CP persons, Level 2 CP persons shall be competent to undertake a range of CP measurement, inspection and supervisory activities in accordance with technical instructions and procedures produced by Level 3 or higher persons, and collate and classify the data under their responsibility.

Level 2 persons shall have knowledge of the fundamentals of electricity, corrosion, coatings, CP and measurement techniques, safety issues and applicable Standards related to CP.

Level 2 persons shall be competent to check the calibration validity of the CP measuring and testing equipment, supervise and perform inspection and testing during installation of CP systems and carry out routine maintenance work on CP systems.

Level 2 persons shall not be responsible for the choice of test method, the technique to be used, preparing the technical instructions or the interpretation of test results.



## **Certification Scheme for Cathodic Protection Personnel**

### **Level 3, Cathodic Protection Senior Technician**

In addition to the competencies for Level 2 persons, Level 3 persons shall have knowledge of the general principles of corrosion and CP, the principles of electricity, the significance of coatings and their influence on CP and a detailed knowledge of CP test procedures and safety issues.

Level 3 persons shall understand and be competent to perform CP tasks according to established or recognized procedures. They shall be competent to carry out and supervise all Level 1 and Level 2 duties, provide guidance for persons at Level 1 and Level 2. They shall be competent to prepare technical instructions for all CP persons of lower-level competence and assess all data collected from these tasks.

### **Level 4, Cathodic Protection Specialist**

In addition to the competences for Level 3 persons, Level 4 persons shall have detailed knowledge of corrosion theory, principles of electricity, CP design, installation, commissioning, testing and performance evaluation, including systems affected by interfering conditions. They shall have competence in establishing testing and performance criteria where none are otherwise available.

They shall have a general familiarity with CP in all application sectors.

They shall be competent to design CP systems including those where no pre-set parameters or procedural steps exist. They shall be competent to define the guidelines for specifying, designing and monitoring CP systems. They shall be competent to consider technical and safety aspects.

They shall be competent to prepare technical instructions for all CP persons of lower-level competence and assess all data collected from these tasks.

In all of these activities, Level 4 persons are not required to be supervised by Level 5 or other persons.

### **Level 5, Cathodic Protection Expert**

In addition to the competencies for Level 4 persons, Level 5 CP persons shall have advanced the state of the art of CP by scientific work and peer-reviewed publications and shall have made a marked and original contribution to the science or practice of corrosion control by CP.

Level 5 persons shall have all the competences required in Clause 6 of ISO 15257:2017 for Level 4 persons in at least one sector and shall have detailed knowledge of CP and a range of competences in all sectors.

They shall have, in at least one of the sectors, an established and mature reputation as a CP specialist at the highest level.

Level 5 persons shall undertake a range of high-level activities such as management of R&D projects, publications in technical or scientific journals or books, lectures at congresses or training courses, participation in Standardization or technical committees, lead in the development of new technology or new applications, editing scientific journals.

It is not precluded for Level 4 persons to perform any of the tasks attributed to Level 5.

It is not a requirement that certification bodies, examination centres or training centres utilize Level 5 CP persons in the operation and management of their activities.”

**At present ICorr are only providing Certification at Levels 2, 3 and 4, (Levels 1, 2 and 3 in BS EN 15257: 2006).**

“In order to verify that these competences can be met it is essential that the training and experience of applicants’ meet the following requirements

#### **Training Requirements**

A formal and documented programme of training is required. This may be through training by the employer, a recognised course at a training centre or by self-study.

## Certification Scheme for Cathodic Protection Personnel

### Level 1, Level 2 and Level 3

- a) The applicant shall provide documentary proof that he has completed a period of training, in the application sector and level for which the certification is sought.
- b) The minimum duration of training that shall be undertaken is as follows:
  - Level 1: Two days of formal or documented on-the-job training in each particular application sector.
  - Level 2 and Level 3: Five days of formal or documented on-the-job or documented moderated self-study training in each particular application sector and for each level.
  - CP persons without Level 2 competences shall undertake a minimum of 10 days training for Level 3.

At all levels, training days shall include both practical and theory components.

### Level 4

Preparation for certification at level 4 may be by, for example:

- completing a relevant engineering or scientific degree or period of post graduate education at a reputable school of higher education.
- attending training courses, conferences or seminars (such as those organised by established industrial or independent associations including in-house courses).
- studying scientific or engineering text books, periodicals, and other specialised materials.

The applicant shall take an exam, submit documentary evidence of training, experience, theoretical knowledge and practical skills in cathodic protection and attend a professional review interview to enable assessment to be made.

### Industrial Experience

Industrial practical experience in cathodic protection is essential and shall be acquired prior to certification. Documentary evidence of industrial experience shall be confirmed by the employer and/or independent referees.

The minimum requirements for duration of cathodic protection experience to be gained prior to certification shall be as defined in Table 1 (for applicants without previous cathodic protection certification) and Table 2 (for applicants with previous cathodic protection certification).

Level 4 competence requires knowledge beyond the technical scope of any one application sector. This broad knowledge may be acquired through a variety of combinations of education, training and experience.

All candidates for level 4 certification in any application sector shall demonstrate by documentary evidence that they are competent in both practical and theory to level 3 in the appropriate application sector or they shall have successfully completed the level 3 examination.

## Certification Scheme for Cathodic Protection Personnel

**Table 1 — Minimum experience requirements for applicants without previous certification.**

Target level	Operator's educational qualification in relevant scientific or engineering disciplines	Min. total number of years of experience in cathodic protection
1	All cases	0
2	All cases	1
3	Specialised education in corrosion field*	2
	Technical Education	3
	All other cases(requires basic mathematical skills)	4
4	Specialised education in corrosion field	5
	Technical Education	8
	All other cases(requires basic mathematical skills)	12

\*Relevant engineering or scientific discipline degree (BSc, BEng or equivalent) and specialized education in the corrosion field (significant corrosion content at BSc or BEng level or significant post graduate corrosion study or research)

**Table 2 — Minimum experience requirements for applicants with previous certification.**

Starting level	Target level	Operator's educational qualification in relevant scientific or engineering disciplines	Min. number of years of experience at the previous certification level
1	2	All cases	1
1	3	Specialised education in corrosion field	2
		Technical Education	3
		All other cases(requires basic mathematical skills)	4
2	3	Specialised education in corrosion field	1
		Technical Education	2
		All other cases	3
2	4	Specialised education in corrosion field	4
		Technical Education	7
		All other cases(requires basic mathematical skills)	11
3	4	Specialised education in corrosion field	3
		Technical Education	5
		All other cases(requires basic mathematical skills)	8

Where personnel are working in more than one sector, separate certification is required for each sector although some of the training is common to all sectors and need not be repeated

Levels 1, 2 and 3 Competence will be assessed on the basis of training, education and experience with suitable training and examinations.

Level 4 Competence will be assessed on the basis of training, education, examination and proof of design experience together with an interview if necessary by the Cathodic Protection Sub-committee of the ICorr Professional Assessment Committee

Full details of the minimum education, training and experience levels and competences are provided in ISO 15257:2017, the details of these as applied in the UK are in the Institute of Corrosion Cathodic Protection Qualification Procedure Document.



## **Certification Scheme for Cathodic Protection Personnel**

In addition to these requirements, it is also essential that cathodic protection personnel have access to the other published Standards relevant to a specific application sector. These are listed below as a reminder to those who have not yet obtained their copies of the Standards.

The level of working knowledge, e.g. awareness, working knowledge or detailed knowledge, of these Standards is dependent upon the Certification Level and application Sector as detailed in ISO 15257.

Number	Title
BS EN 12473:2014	General principles of cathodic protection in seawater
BS EN 12474:2001	Cathodic protection for submarine pipelines
BS EN 12495:2000	Cathodic protection for fixed steel offshore structures
BS EN 12496:2013	Galvanic anodes for cathodic protection in seawater and saline mud
BS EN 12499:2003	Internal cathodic protection of metallic structures
BS EN 12954:2001	Cathodic protection of buried or immersed metallic structures. General principles and application for pipelines
BS EN 13173:2001	Cathodic protection for steel offshore floating structures
BS EN 13509:2003	Cathodic protection measurement techniques
BS EN 13636:2004	Cathodic protection of buried metallic tanks and related piping
BS EN 14038-1:2016	Electrochemical realkalization and chloride extraction treatments for reinforced concrete. Realkalization
BS EN 14505:2005	Cathodic protection of complex structures
BS EN 15112:2006	External cathodic protection of well casing
BS EN 15280:2013	Evaluation of a.c. corrosion likelihood of buried pipelines applicable to cathodically protected pipelines
BS EN 16222:2012	Cathodic protection of ship hulls
BS EN 16299:2013	Cathodic protection of external surfaces of above ground storage tankbases in contact with soil or foundations
BS EN ISO 12696:2016	Cathodic protection of steel in concrete
BS EN ISO 13174:2012	Cathodic protection of harbour installations
BS EN ISO 15257:2017	Cathodic protection. Competence levels and certification of cathodic protection personnel
DD CEN/TS 14038-2:2011	Electrochemical re-alkalization and chloride extraction treatments for reinforced concrete. Chloride extraction

The Certification Scheme is operated by the Institute of Corrosion who are the National Certification Body in the UK and administer and oversee the operation of the Scheme.

Full details of the scheme and its requirements are given in *Institute of Corrosion: Cathodic Protection Qualification Procedure Document* along with the necessary application forms and further information which is available at [www.icorr.org/education\\_training/cp\\_certification](http://www.icorr.org/education_training/cp_certification).

### **Institute of Corrosion Training Courses**

Knowledge required for all application sectors and all levels is given in ISO 15257, Clause 6.2, and detailed in Table 1. This constitutes a common core for all application sectors and all levels.

Tasks to be fulfilled in all application sectors and Levels 1 to 4 are given in ISO 15257, Clause 6.3 and detailed in Table 2. This details the tasks for each level of competence from 1 to 4 whatever the application sector. Persons shall be competent in these tasks for their particular application sector.

## **Certification Scheme for Cathodic Protection Personnel**

Specific tasks for on-land metallic structures application sector for Levels 1 to 4 are given in ISO 15257, Clause 6.4 and detailed in Table 3. This details the specific tasks for each competence level from 1 to 4 in the on-land metallic structures application sector.

Specific tasks for marine metallic structures application sector for Levels 1 to 4 are given in ISO 15257, Clause 6.5 and detailed in Table 4. This details the specific tasks for each competence level from 1 to 4 in the marine metallic structures application sector.

Specific tasks for reinforced concrete structures application sector for Levels 1 to 4 are given in ISO 15257, Clause 6.6 and detailed in Table 5. This details the specific tasks for each competence level from 1 to 4 in the reinforced concrete structures application sector.

Specific tasks for inner surfaces of metallic structures application sector for Levels 1 to 4 are given in ISO 15257, Clause 6.7 and detailed in Table 6. This details the specific tasks for each competence level from 1 to 4 in the inner surfaces of metallic structures application sector. (Note this sector is not currently offered by ICorr due to lack of demand)

ICorr offer the following training courses in 3 of the sectors at Levels 2 and 3. The courses have been developed by ICorr Senior Cathodic Protection Specialists to incorporate all the requirements set out in ISO 15257:2017 as detailed above.

The rules governing training, examination and certification are set out in ICorr REQ DOC (CP) for the EN 15257 compliant Scheme and in the ICorr CP Qualification Procedure Document for the ISO 15257 compliant Scheme. For more information regarding both of these, contact <https://www.icorr.org>. For course bookings, contact <https://trainingsolutions.imeche.org> or <http://www.corrosionprevention.org.uk>.

## **Certification Scheme for Cathodic Protection Personnel**

### **CATHODIC PROTECTION TECHNICIAN: ON-LAND METALLIC STRUCTURES ISO LEVEL 2**



#### **Why attend this course?**

The course and examination are in compliance with EN 15257: 2006 (soon to be in compliance with ISO 15257:2017) and are suitable for candidates with or without experience in cathodic protection. Please note that full certification to the level requires a minimum duration of 1 year's assessed and approved experience. The course is also suitable for those who merely require an appreciation of Cathodic Protection of Buried Applications (underground and immersed metallic structures) without pursuing certification.

#### **Course content**

The following topics are relevant to this application sector:

- CP general principles and specific applications in soils and waters;
- CP measurement techniques;
- protection against corrosion by stray current from direct current systems;
- interference alternating current and direct current;
- touch potentials.

This application sector includes, for example, the following:

- buried onshore pipelines;
- sections of onshore pipelines crossing rivers, lakes or short lengths of sea;
- landfalls of offshore pipelines protected by an onshore CP system;
- buried tanks;
- bottoms (external side) of above-ground tanks;
- complex structures
- well casings;
- buried plant modules.

The topics of this course are fully set out and described in ISO 15257 Clause 6. **Course details**

**Duration:** 5 days

## **Certification Scheme for Cathodic Protection Personnel**

### **SENIOR CATHODIC PROTECTION SENIOR TECHNICIAN: ON-LAND METALLIC STRUCTURES ISO LEVEL 3**



#### **Why attend this course?**

The course and examination are in compliance with EN 15257: 2006 (soon to be in compliance with ISO 15257:2017) and are suitable for candidates with the requisite qualifying experience. The course is suitable for those already Certificated to ISO Level 2 and those who merely require an appreciation of the cathodic protection of On-land Metallic Structures (Underground and Immersed Metallic Structures) at this higher level without pursuing Certification.

#### **Course content**

The following topics are relevant to this application sector:

- CP general principles and specific applications in soils and waters;
- CP measurement techniques;
- protection against corrosion by stray current from direct current systems;
- interference alternating current and direct current;
- touch potentials.

This application sector includes, for example, the following:

- buried onshore pipelines;
- sections of onshore pipelines crossing rivers, lakes or short lengths of sea;
- landfalls of offshore pipelines protected by an onshore CP system;
- buried tanks;
- bottoms (external side) of above-ground tanks;
- complex structures
- well casings;
- buried plant modules.

The topics of this course are fully set out and described in ISO 15257 Clause 6.

#### **Course details**

**Duration:** 5 days

**Special note:** Applicants must hold either ICorr Level 2 Cathodic Protection Technician - Buried Applications (Underground and Immersed Metallic Structures) Competence Certification or, where the applicant does not hold this Certification, have at least 1 year approved experience and attended the Level 2 training course or satisfies the educational and experience requirements set out in ICorr regulations.



## Certification Scheme for Cathodic Protection Personnel

### CATHODIC PROTECTION TECHNICIAN: REINFORCED CONCRETE STRUCTURES ISO LEVEL 2



#### Why attend this course?

The course and examination are in compliance with EN 15257: 2006 (soon to be in compliance with ISO 15257:2017) and are suitable for candidates with or without experience in cathodic protection, but note that full certification to this level requires a minimum duration of one year's approved experience. The course is also suitable for those who merely require an appreciation of the protection of reinforced concrete structures without pursuing certification.

#### Course content

The following topics are relevant to this application sector:

- CP general principles;
- CP measurement techniques;
- specific applications of steel in concrete;
- other electrochemical techniques that are also aimed at mitigating corrosion of steel embedded in concrete, such as electrochemical re-alkalization and chloride extraction treatments for reinforced concrete.

This application sector includes, for example, the following:

- atmospherically exposed steel-reinforced (both post-tensioned and pre-stressed) concrete, onshore structures (bridges, walls, piles, buildings etc.);
- buried steel-reinforced (both post-tensioned and pre-stressed) concrete structures (pipelines, tunnels, foundations, etc.);
- steel-reinforced (both post-tensioned and pre-stressed) concrete structures immersed in fresh water (pipe lines, foundations, swimming-pools, water tanks);
- steel-reinforced (both post-tensioned and pre-stressed) concrete structures immersed in seawater (harbour facilities, piers, jetties, offshore platforms).

The topics of this course are fully set out and described in ISO 15257 Clause 6.

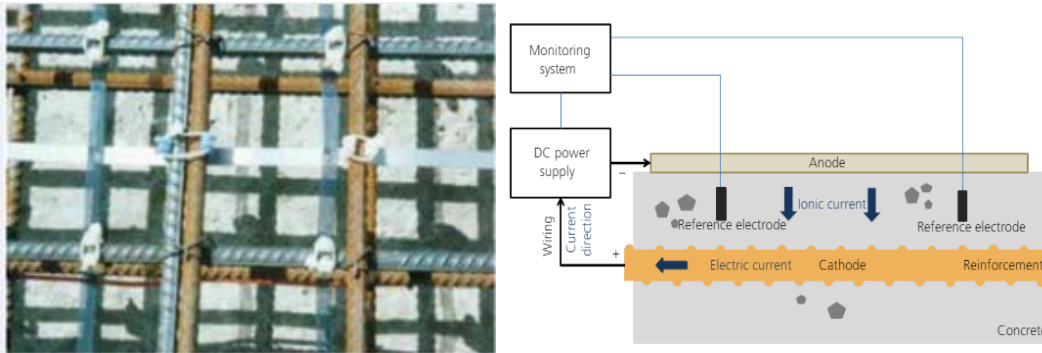
#### Course details

**Duration:** 5 days Mon–Fri, or 1 day over 5 weeks



## Certification Scheme for Cathodic Protection Personnel

### CATHODIC PROTECTION SENIOR TECHNICIAN: REINFORCED CONCRETE STRUCTURES ISO LEVEL 3



#### Why attend this course?

The course and examination are in compliance with EN 15257: 2006 (soon to be in compliance with ISO 15257:2017) and are suitable for candidates with the requisite qualifying experience. The course is suitable for those who took the Level 2 training course and those who merely require an appreciation of the cathodic protection of reinforced concrete structures at this higher level without pursuing certification.

#### Course content

The following topics are relevant to this application sector:

- CP general principles;
- CP measurement techniques;
- specific applications of steel in concrete;
- other electrochemical techniques that are also aimed at mitigating corrosion of steel embedded in concrete, such as electrochemical re-alkalization and chloride extraction treatments for reinforced concrete.

This application sector includes, for example, the following:

- atmospherically exposed steel-reinforced (both post-tensioned and pre-stressed) concrete, onshore structures (bridges, walls, piles, buildings etc.);
- buried steel-reinforced (both post-tensioned and pre-stressed) concrete structures (pipelines, tunnels, foundations, etc.);
- steel-reinforced (both post-tensioned and pre-stressed) concrete structures immersed in fresh water (pipe lines, foundations, swimming-pools, water tanks);
- steel-reinforced (both post-tensioned and pre-stressed) concrete structures immersed in seawater (harbour facilities, piers, jetties, offshore platforms).

The topics of this course are fully set out and described in ISO 15257 Clause 6.

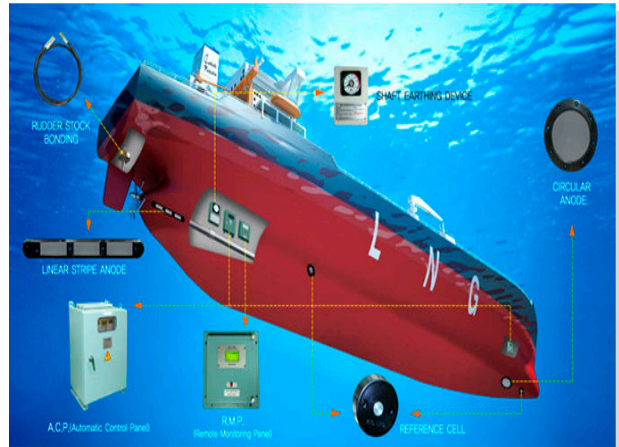
#### Course details

**Duration:** 5 days Mon–Fri, or 1 day per week over 5 weeks

**Special note:** Applicants must either hold ICorr Level 2 Cathodic Protection Technician - Reinforced Concrete Structures Competence Certification or, where the applicant does not hold this certification, have at least 1 year's approved experience and attended the Level 2 training course or satisfies the educational and experience requirements set out in ICorr REQ DOC (CP).

## Certification Scheme for Cathodic Protection Personnel

### CATHODIC PROTECTION TECHNICIAN: MARINE METALLIC STRUCTURES ISO LEVEL 2



#### Why attend this course?

The course and examination are in compliance with EN 15257: 2006 (soon to be in compliance with ISO 15257:2017) and are suitable for candidates with or without experience in cathodic protection but note that full certification to the level requires a minimum duration of approval experience. The course is also suitable for those who merely require an appreciation of the protection of Marine Metallic Structures without pursuing certification.

#### Content

The following topics are relevant to this application sector:

- CP general principles
- CP measurement techniques
- specific applications in seawater and marine sediments.

This application sector includes, for example, the following:

- ships (external hulls and ballast tanks)
- CP measurement techniques
- fixed offshore structures (platforms, jackets, monopiles, offshore windfarms, tension leg platforms, etc.)
- floating structures (buoys, semi-submersible platforms, floating production storage and offloading structures (FPSO))
- underwater structures (well heads, manifolds, piping)
- coastal and offshore pipelines, risers
- landfall of offshore pipelines protected by an offshore CP system
- harbour facilities, piers, jetties and lock gates.

The topics of this course are fully set out and described in ISO 15257 Clause 6

#### Course Details

**Duration** 5 days

## Certification Scheme for Cathodic Protection Personnel

### CATHODIC PROTECTION SENIOR TECHNICIAN: MARINE METALLIC STRUCTURES ISO LEVEL 3



#### Why attend this course?

The course and examination are in compliance with EN 15257: 2006 (soon to be in compliance with ISO 15257:2017) and are suitable for candidates with the requisite qualifying experience. The course is suitable for those who took the Level 2 training course and those who merely require an appreciation of the cathodic protection of marine structures at this higher level without pursuing certification.

#### Content

The following topics are relevant to this application sector:

- CP general principles
- CP measurement techniques
- specific applications in seawater and marine sediments.

This application sector includes, for example, the following:

- ships (external hulls and ballast tanks)
- CP measurement techniques
- fixed offshore structures (platforms, jackets, monopiles, offshore windfarms, tension leg platforms, etc.)
- floating structures (buoys, semi-submersible platforms, floating production storage and offloading structures (FPSO))
- underwater structures (well heads, manifolds, piping)
- coastal and offshore pipelines, risers
- landfall of offshore pipelines protected by an offshore CP system
- harbour facilities, piers, jetties and lock gates.

The topics of this course are fully set out and described in ISO 15257 Clause 6.

#### Course Details

**Duration** 5 days

**Special note:** Applicants must hold either ICorr Level 2 Cathodic Protection Technician – Marine Metallic Structures Certificate or, where the applicant does not hold this certification, have at least 1 year approved experience and attended the Level 2 training course or satisfies the educational and experience requirements set out in ICorr REQ DOC (CP).