



# **Rules for the Certification of Cathodic Protection Personnel**

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Technical Rules

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## CHAPTER 1 - PURPOSE

These Rules describe the additional and/or substitutive procedures applied by RINA for the certification of cathodic protection personnel and the modalities to be observed by Organizations to apply for, obtain and maintain said certification, in addition to the requirements of the General Rules for the certification of Persons RC/C 85.

The paragraphs of these Rules refer to (and keep the same numbering of) the corresponding paragraphs of the General Rules for the Certification of Persons which have been subject to changes and/or integrations.

## CHAPTER 2 - DEFINITIONS

In addition to the definitions listed below, these Rules also refer to the definitions contained in the UNI EN ISO 15257:2017 standard.

**Application sector:** the competence levels are applied 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.

**Certification Body:** Accredited Body in accordance with the UNI CEI EN ISO/IEC 17024:2012 standard which manages certification procedures and issues certificates for cathodic protection personnel in conformity with the requirements of these Rules and which meets the technical requirements of the UNI EN ISO 15257:2017 standard.

**Examination Center:** a center approved by the Certification Body where exams relating to qualification of cathodic protection personnel are held. The Center is provided with test equipment capable of simulating the electric conditions that usually occur in the actual cathodic protection of industrial structures, for a specific application sector.

**Experience in industrial cathodic protection:** experience in the applicable cathodic protection techniques and in the relevant application sector, which enables the acquisition of the required ability and knowledge.

**Level (1, 2, 3, 4 or 5):** qualification level of cathodic protection personnel as specified in the UNI EN ISO 15257:2017 standard for a specific application sector. The responsibilities, functions, competences and limitations of each level are specified in the reference standard.

## CHAPTER 3 – REFERENCE DOCUMENTS

The applicable standard is **UNI EN ISO 15257:2017** - Cathodic protection - Competence levels of cathodic protection persons - Basis for certification scheme.

In the presence of a request by the applicant Organization, RINA will have the right to perform the same personnel qualification activities in accordance with other national or international recognized standards.

## CHAPTER 4 – REQUIREMENTS FOR ADMISSION TO EXAMINATION

As per these Rules, RINA is responsible for the entire assessment and certification process of personnel of level 1, 2, 3, 4 and 5 for the above standards.

Candidates can be employed, self-employed or not-employed persons.

### 4.1

Any Organizations that wish to obtain the above certification for their own personnel, like the applicants listed in the previous paragraph, shall send an appropriate request, by fax, mail or e-mail, with at least the following information:

- a) Organization's name;
- b) reference standard;
- c) number of persons to qualify;
- d) application sector and requested levels;
- e) evidences of the training courses attended by the persons to be qualified in the requested application sector and level (in conformity with p. A.3.1 of the UNI EN ISO 15257:2017 standard);
- f) a declaration of the minimum required experience in the sector for which certification is requested (in conformity with p. A.2 of the UNI EN ISO 15257:2017 standard – see Annex 1 to these Rules).

A self-training declaration, which contains the program of the training provided in conformity with the tables under paragraph 6 of the UNI EN ISO 15257:2017 standard, must be confirmed by a person with level 3 or higher. Declarations shall contain the following sentence: "the content of this declaration is responsive to truth in accordance with art. 46 and with the awareness of the sanctions referred to in art. 76 of DPR 445/2000". Based on this information and after a preliminary check of the completeness of the supplied information, RINA will prepare a service proposal that will be sent together with these Rules. If the above documentation is not received by RINA at least 2 working days before the established examination date, the candidate won't be admitted to said examination.

#### 4.2

Upon receiving the acceptance of the above service proposal, RINA will send a written confirmation to the Organization for the acceptance of the application.

The Organization's application and relevant acceptance by RINA are the formal contract regulating RINA operations carried out in accordance with these Rules.

RINA reserves the right to request, at its discretion, other documents that it deems to be important for this certification as an integration and support to the information previously received from the applicant Organization.

RINA will previously inform the Organization about the names of the qualified technicians appointed as examiners for certification of operators; the Organization may object to the appointment of these technicians, justifying the reasons.

RINA will previously provide the examiners with the names of the candidates in order to check the presence/absence of conflicts of interest.

### CHAPTER 5 – ASSESSMENT AND CERTIFICATION PROCESS

Qualification examinations shall be performed by RINA at its own structures or at the applicant Organizations' premises; in the latter case RINA shall previously check the suitability of the proposed places for the examination center activity (structure, equipment, instruments, organization).

Practical examinations are held at a test site the suitability of which is verified by RINA or, as an alternative, due to force majeure or bad weather, in a classroom, one at a time, using hardcopy supports.

Before the examination starts, RINA qualified technicians will proceed with the identification of the candidates by their valid identity documents.

Candidates sign a written statement undertaking neither to divulge the examination material nor to commit fraudulent acts relevant to the subtraction of examination material.

The maximum time allowed to candidates is equal to 3 minutes for each question.

The general and specific written examination shall include questions selected by RINA from its own collection of questions.

If the applicant Organization requests the qualification of a candidate for more than one application sector (e.g. on-land metallic structures and marine metallic structures), the number of practical tests will be proportionally increased in order to verify the candidate's competence in each of the selected sectors.

Written tests based on multiple-choice questions are evaluated as hundredths, as a percentage of correct answers over the total number of questions.

The written tests and the practical test are evaluated separately.

### Level 1 examination

The qualification examination consists of:

- a written test on basic knowledge (general written test – part A);
- a written test on the application sector (specific written test – part B);
- a practical test on structures or simulated structures on the application sector (practical test – part C).

#### Part A – General written test

The general written test consists of 25 multiple-choice questions aimed at verifying the general knowledge relating to the basic principles of electrical engineering, corrosion and coatings, cathodic protection, safety and to the standards concerning cathodic protection in accordance with paragraph 6.2 of UNI EN ISO 15257:2017. If this test is passed, it must not be repeated in case of extension to another sector.

#### Part B – Specific written test

The specific written test must consist of 15 multiple-choice questions for each requested application sector. These questions are aimed at checking the knowledge and competence about the implementation, measurement techniques, controls and basic maintenance of cathodic protection systems.

#### Part C – Practical test

The number of practical tests is 3 for each application sector. Each test consists of:

- installation of devices and components of cathodic protection systems;
- conduction of measurements and adjustment of operating parameters;
- conduction of checks and basic maintenance of cathodic protection instruments and devices

During the test the candidate will be interviewed with the aim of clarifying details and situations concerning any problems found during the tests.

The tests to which level 1 candidate has been subject will be assessed as follows:

$$N = 0.2 NA + 0.2 NB + 0.6 NC$$

### Level 2 examination

The qualification examination consists of:

- a written test on basic knowledge (general written test – part A);
- a written test on the application sector (specific written test – part B);
- a practical test on structures or simulated structures on the application sector (practical test – part C).

#### Part A – General written test

The general written test consists of 30 multiple-choice questions aimed at verifying the general knowledge relating to the basic principles of electrical engineering, corrosion and protection

phenomena, regulatory and safety aspects applicable to cathodic protection. If this test is passed, it must not be repeated in case of extension to another sector.

#### Part B – Specific written test

The specific written test must consist of 20 multiple-choice questions for each requested application sector. These questions are aimed at checking the competence about measurement techniques, controls and management of protection systems as well as protection methods, electric interference and test procedures.

#### Part C – Practical test

The number of practical tests is 4 for each application sector. Each test consists of:

- setting up the electrical parameters of cathodic protection systems;
- conduction of electrical measurements;
- drafting of measurement and verification reports;
- classification of measurement results

During the practical test the candidate will be interviewed with the aim of clarifying details and situations concerning any problems found during the tests.

The tests to which level 2 candidate has been subject will be assessed as follows:

$$N = 0.2 NA + 0.3 NB + 0.50 NC$$

### Level 3 examination

The qualification examination consists of:

- a written test on basic knowledge (general written test – part A);
- a written test on the application sector (specific written test – part B);
- a practical test on structures or simulated structures on the application sector (practical test – part C).

#### Part A – General written test

The general written test consists of 30 multiple-choice questions aimed at verifying the knowledge of the basic principles of electrical engineering, corrosion and protection phenomena, regulatory and safety aspects applicable to cathodic protection. If this test is passed, it must not be repeated in case of extension to another sector.

#### Part B – Specific written test

The specific written test shall consist of 20 multiple-choice questions for each requested application sector. These questions are aimed at checking the competence about measurements, checks and management of protection systems as well as protection methods, electric interference and test procedures.

#### Part C – Practical test

The number of practical tests is 5 for each application sector. Each test consists of:

- setting up the electrical parameters of cathodic protection systems;
- conduction of electrical measurements;
- drafting of measurement and verification reports;
- drafting of control and verification instructions;
- analysis of the electrical status of structures

During the practical test the candidate will be interviewed with the aim of clarifying details and situations concerning any problems found during the tests.

The tests to which level 3 candidate has been subject will be assessed as follows:

$$N = 0.3 NA + 0.3 NB + 0.40 NC$$

#### Level 4 examination

The qualification examination consists of:

- a written test on basic knowledge (general written test – part A);
- a written test on the application sector (specific written test – part B);
- a practical test on structures or simulated structures on the application sector (practical test – part C).

#### Part A – General written test

The general written test shall consist of 30 multiple-choice questions aimed at verifying the knowledge of the basic principles of electrical engineering, corrosion and protection phenomena, regulatory and safety aspects applicable to cathodic protection. The questions will be calibrated for the cultural level and experience requested to level 4 candidates. If this test is passed, it must not be repeated in case of extension to another sector.

#### Part B – Specific written test

The specific written test must consist of 20 multiple-choice questions for each requested application sector. These questions are aimed at checking the competence about the measurements, checks and management of protection systems as well as protection methods, electric interference and test procedures.

#### Part C – Practical test

The number of practical tests is 5 for each application sector. Each test consists of:

- setting up the electrical parameters of cathodic protection systems;
- conduction of electrical measurements;
- drafting of measurement and verification reports;
- drafting of control instruction and technical reports;
- analysis of the electrical status of structures

During the practical test the candidate will be interviewed with the aim of clarifying details and situations concerning any problems found during the tests.

The tests to which level 4 candidate has been subject will be assessed as follows:

$$N = 0.3 NA + 0.3 NB + 0.40 NC$$

The competence of level 4 candidate, in accordance with the requirements of paragraph 6 of the UNI EN ISO 15257:2017 standard, must be assessed by the examination board on the basis of documents attesting:

- the qualifications obtained in the training, scientific and engineering sectors;
- the duration of the experience as person responsible in the requested specific application sector;
- examples of projects, technical reports and publications prepared by the candidate;
- additional information provided by the candidate to demonstrate and document his/her own competence.

The above documentation must include technical instructions for a minimum of two independent cathodic protection persons with a competence not lower than level 4 to attest the truthfulness and accuracy of the file.

#### Level 5 examination

The qualification exam is structured in accordance with paragraph B.4 of the UNI EN ISO 15257:2017 standard and requests that the candidate has been certified to level 4 for at least 3 years in the same sector.

The competence of level 5 candidates, in accordance with all the aspects referred to in p. 6.8 of the UNI EN ISO 15257:2017 standard, is evaluated by the examination board on the basis of an interview and a file that describes and documents compliance with the requirements of p. B.4. This evaluation must be performed in compliance with said paragraph.

RINA examination board consists of at least 3 members in conformity with p. C.4.1 of the UNI EN ISO 15257:2017 standard selected among:

- two experts coming from academia or industry with experience in the training, metallic material corrosion and protection sectors;
- two level 4 experts certified for cathodic protection appointed by RINA;
- a certification and qualification expert appointed by RINA.

The members of the examination board must attest their independence in the evaluation of candidates and confidentiality in treating the information received during the examination.

#### 5.1

Examinations are conducted under the responsibility of a RINA qualified technician who may have one or more assistants.

The appointed examiner shall perform both correction and grading of written tests, in conformity with the operating procedure applied by RINA.

In order to successfully complete level 1, 2, 3 and 4 examination tests, the candidate shall obtain the 70% minimum pass grade foreseen for each part of the written test (general and specific), as well as the 80% minimum pass grade foreseen for the examination test as a whole.

A candidate can attend the examination tests without any barriers preventing him/her from accessing the next examination; for the successful completion of the examination the above requirements apply.

A candidate who fails to achieve the pass grade shall wait 30 days before applying for a new examination. The candidate may repeat only once any part of the examination, provided that he/she completes a further training course recognized by the certification body and provided that the examination repetition date does not exceed twelve months from the initial examination, otherwise the candidate shall repeat the entire examination.

The minimum experience requirements for cathodic protection personnel to be achieved before certification cannot be lower than the ones specified in Table A.1, Table A.2 and Table A.3. The time specified in these tables refers to a minimum 20% activity of cathodic protection.

### CHAPTER 6 – ISSUE OF CERTIFICATES

At the end of the examination, the examination board performs an overall evaluation of the results obtained by the candidates writing a test report with the relevant results and documents.

The original test report, the evaluation of the examination board relating to the tests together with the entire documentation submitted by the candidate are sent to RINA for an independent check and the decision about certificate issue.



If the evaluation result is positive, RINA issues, for each examined candidate, a specific certificate that attests that the candidate has successfully passed the examination.

#### CHAPTER 7 – CERTIFICATION VALIDITY

The period of validity of the certificate issued by RINA is five years starting from the check of the compliance with all certification requirements.

The validity of the certificate is subject to the correct professional behavior of the qualified personnel; the certificate is no longer valid in the presence of a significant interruption in the operating sector for which certification has been obtained, i.e.:

- possible interruptions exceeding 548 consecutive days,  
or
- two or more periods with a total duration greater than 3 years during the period of validity of the certificate.

#### CHAPTER 8 – CERTIFICATION MAINTENANCE

##### 8.1 – Renewal

Upon expiry of the first validity period and then every 10 years, the certificate can be renewed by RINA for five more years, without any examinations, provided that the certified person meets the following requirements:

- continued work activity in the cathodic protection sector without any significant interruption in the certified operating sector, as explained in p. 6.1 above (any absence due to holidays or sickness or training courses must not be considered);
- no certificate revocations

To obtain a renewal, the certified person shall send a request to RINA three months before the expiry date of the certificate, filling in the entire application form with the following data:

- candidate's name and surname;
- place and date of birth;
- place of residence and telephone number;
- level;
- application sectors;
- certificate number and expiry date

The following documents shall be attached to the application form:

- documented evidence of the uninterrupted work activity and updated technical knowledge in the application sector;
- expiring certificate and/or badge.

If the renewal requirements are not complied with, the certified person shall attend a recertification exam. If he/she fails to pass this exam, the certified person shall be considered as an initial candidate to certification for the selected application sector and level.

If above examinations are successfully completed, RINA allows the validity to be extended by directly issuing a new qualification certificate for the reference standard.

##### 8.2 – Certification extension

A candidate already certified to level 1, 2, 3 or 4 who asks to change his/her application sector, shall only attend the theoretical (part B) and practical (part C) examinations concerning the new application sector.

The two tests to which the candidate has been subject will be assessed as follows

$$N = 0.4 \text{ NB} + 0.6 \text{ NC}$$

In order to pass the examination tests, a candidate of any level (1, 2, 3 or 4) shall obtain the 70% minimum pass grade foreseen for each part of the written test (specific), as well as the 80% minimum pass grade foreseen for the examination test as a whole.

It is possible to perform extensions from a lower to an upper level meeting the requirements listed in Table A.2 and successfully completing the examination tests foreseen for the requested level.

## CHAPTER 9 - RECERTIFICATION

Upon expiry of the second validity period (every 10 years), the certificate shall be renewed by RINA Examination Center for five more years, in accordance with the requirements of the UNI EN ISO 15257:2017 standard, § C.3, as explained below:

### 9.1 Level 1, 2 and 3

The person who asks for recertification shall meet the requirements foreseen for renewal and must successfully pass a practical test at an examination center approved and managed by RINA.

The practical examination includes tasks relating to the certification to be renewed and, for level 3, the drafting of a written instruction to be used by level 1 and level 2 personnel.

A candidate who fails to achieve the pass grade shall attend a new examination about the entire recertification program not before 7 days and within 6 months. If the candidate fails to pass this single recertification exam, RINA won't renew the certificate and the candidate shall repeat the recertification procedure for the same level and application sector, without being granted any privilege or extension.

### 9.2 Level 4 and 5

The level 4 and 5 candidate who requests recertification shall submit a file that details the continuing professional development modalities of the person, his/her continuous activity as person responsible for the fulfilment of the tasks specified under p. 6 of the UNI EN ISO 15257:2017 standard in the sector(s) concerned and the evidence of his/her continuous attitudes.

RINA may request the confirmation of this file to the candidate's employer and/or independent third parties.

## CHAPTER 10 – TRANSFER OF CERTIFICATES

Following an application for transfer of a certificate issued by an accredited CB, for a specific scheme, in accordance with the ISO 17024 standard, by a CB signatory of the IAF/MLA agreements, RINA can proceed with transferring this certificate provided that:

- the certificate is currently valid
- the certificate is not suspended
- the Certification Body that issued the certificate is not suspended by the accreditation Body
- the certified activities are covered by RINA's scope of accreditation

A certificate can be transferred only during a renewal or recertification audit; in case of doubts, RINA reserves the right to perform all the actions foreseen for recertification also on occasion of a renewal.

The newly issued certificate will keep the same expiry date of the transferred certificate and the same audit program defined by the CB that issued the previous certificate.

If the transfer requirements are not met, the transfer procedure cannot be applied and a complete audit shall be carried out.

CHAPTER 11 - SUSPENSION, REINSTATEMENT, REDUCTION AND REVOCATION OF A CERTIFICATE

The requirements set out in the General Rules for the Certification of Persons RC/C 85 apply.

CHAPTER 12 - ENROLLMENT IN THE REGISTER OF CERTIFIED PERSONS

The requirements set out in the General Rules for the Certification of Persons RC/C 85 apply.

CHAPTER 13 - USE OF CERTIFICATION LOGOTYPES

The requirements set out in the General Rules for the Certification of Persons RC/C 85 apply.

CHAPTER 14 - MANAGEMENT OF CLAIMS

The requirements set out in the General Rules for the Certification of Persons RC/C 85 apply.

CHAPTER 15 - CONTRACTUAL TERMS AND CONDITIONS

The requirements set out in the General Rules for the Certification of Persons RC/C 85 apply.

ANNEX 1 – INDUSTRIAL EXPERIENCE

The minimum experience requirements for cathodic protection personnel to be achieved before certification cannot be lower than the ones specified in Table A.1 from Table A.3. The time specified in these tables refers to a minimum 20% activity for cathodic protection.

Table A.1 refers to candidates without any previous cathodic protection certification for the knowledge and activities specified in clause 6.

Table A.2 refers to candidates with a previous cathodic protection certificate in the same application sector relating to knowledge and activities specified in clause 6.

Table A.3 refers to candidates with a certificate of knowledge and tasks as per Clause 6 in one (or more) application sectors who ask for the certification of the same level in another application sector.

**Table A.1 — Minimum education and work experience requirements for each level for candidates without any previous certification for the specific application sector**

Target level	Education	Minimum cathodic protection experience (years)
1	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)	0
	Technical education	0
	All other cases (requires basic mathematical skills)	0
2	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)	1
	Technical education	1
	All other cases (requires basic mathematical skills)	1
3	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)	2
	Technical education	3
	All other cases (requires basic mathematical skills)	4
4	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)	5
	Technical education	8
	All other cases (requires basic mathematical skills)	12

“All other cases” include candidates who may not have received a formal post-educational training course or whose post-educational training does not include any significant scientific or engineering subjects.

**Table A.2 — Minimum education and additional work experience requirements for each level for candidates with previous certification in the same application sector**

Starting level	Target level	Education	Minimum additional cathodic protection experience at the previous certification level in the same sector (years)
1	2	All education levels	1
1	3	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)	2
		Technical education	3
		All other cases (requires basic mathematical skills)	4
2	3	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)	1
		Technical education	2
		All other cases (requires basic mathematical skills)	3
2	4	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)	4
		Technical education	7
		All other cases (requires basic mathematical skills)	11
3	4	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)	3
		Technical education	5
		All other cases (requires basic mathematical skills)	8

**Table A.3 — Minimum education and additional work experience requirements for each level for candidates with previous certification in a different application sector of the same level**

Target level	Education	Minimum additional cathodic protection experience at the previous certification level in the same sector (years)
1	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)	0
	Technical education	0
	All other cases (requires basic mathematical skills)	0
2	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)	0.5
	Technical education	0.5
	All other cases (requires basic mathematical skills)	0.5
3	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)	1.5
	Technical education	2
	All other cases (requires basic mathematical skills)	3
4	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)	1.5
	Technical education	2
	All other cases (requires basic mathematical skills)	3

Candidates with a higher level in one sector can apply for a lower level in another sector and must comply with the minimum requirements listed in Table A.3 for the new sector.

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