



**PAINTING INSPECTOR**

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**RSA**

## **1.0 PURPOSE**

The purpose of this International Personnel Certification Schemes (IPCS) is to define RSA minimum qualification and certification requirements of Painting Inspector in accordance with The American Society for Testing and Materials (ASTM) Standard Guide D4537.

## **2.0 SCOPE**

- 2.1 This IPCS has been developed to assist in meeting the minimum requirements for qualification and certification of personnel seeking for Painting Inspector certification in accordance with ASTM's Standard Guide D4537-12, Re-approved 2018.
- 2.2 The Levels of Painting Inspectors covered by this IPCS are listed in Section 6.0 as used in accordance with the applicable codes, standards, specifications and regulations referenced below.
- 2.3 Certification to this IPCS provides an attestation of general competence of the Plant Inspector. It does not represent an authorization to operate, since this remains the responsibility of the employer, and the certified personnel may require additional specialized knowledge of parameters such as equipment, procedures, materials and products specific for the employer.
- 2.4 Authorization to operate shall be given in writing by the employer in accordance with a quality procedure that defines any employer-required job-specific training and examinations designed to verify the certificate holder's knowledge of relevant industry code(s), standard(s), procedures, equipment, and acceptance criteria for the inspected products.

## **3.0 REFERENCES**

- a. ASTM D4537-12 (Re-approved 2018), Standard Guide for Establishing Procedures to Qualify and Certify Personnel Performing Coating and Lining Work Inspection in Nuclear Facilities.
- b. ASTM D5498-12 (Re-approved 2018) Standard Guide for Developing a Training Program for Personnel Performing Coating and Lining Work Inspection for Nuclear Facilities
- c. RSA-QM-1001 Revision 0, Quality Manual - RSA Certification Body Quality Management System.

## **4.0 ABBREVIATIONS, TERMS AND DEFINITIONS**

For the purposes of this document, the abbreviations, terms and definitions given in the reference documents listed in 3.0 above shall apply.

## 5.0 JOB AND TASK DESCRIPTION

- 5.1 Painting inspection is a quality control phase that, by means of examination, observation, or measurement, determines the conformance of safety-related coating or lining system applications to predetermined quality requirements.
- 5.2 The Painting Inspectors are responsible to the owner/user to assure coating and lining work meet the specifications and codes requirement during:
  - a. fabrication,
  - b. receipt of items at the construction site,
  - c. construction,
  - d. pre-operational and startup testing, and
  - e. operational phases.
- 5.3 All physical coating work inspection activities shall be performed by Painting Inspectors certified as qualified to perform coating and lining work inspection as Level 1, Level 2, or Level 3 status as described in Section 6.0 below.
- 5.4 The Painting Inspectors shall be directly involved in the inspection activities, especially visual inspections, which in most cases will require field activities to ensure that procedures and inspection plans are followed in accordance with the technical objectives of the project, the codes and standards that are to be used, and the quality assurance elements that are to be employed.
- 5.5 The Painting Inspectors shall review, evaluate and accept all surface preparation and coating works conducted and visual inspection reports.
- 5.6 The Painting Inspectors shall make appropriate recommendations for acceptance, repairs and replacements of coating and lining works.

## 6.0 LEVEL OF CERTIFICATION

### 6.1 Level 1

Personnel certified as having attained Painting Inspector Level 1 status shall be capable of the following:

- a. Implementing and recording all inspections required by the applicable procedures.
- b. Verifying instrument calibration.
- c. Performing hold point inspections in accordance with the applicable procedures.

### 6.2 Level 2

Personnel certified as having attained Painting Inspector Level 2 status shall be capable of the following:

- a. Performing all of the duties and responsibilities of Level 1 status personnel.
- b. Planning and supervising inspections, initiating and reviewing inspection procedures, and evaluating the adequacy of inspection activities performed.
- c. Reviewing, organizing, and approving results of inspections.
- d. Monitoring the performance of and supervising the work of Level 1 status personnel.
- e. Training and verifying, for certification, the qualifications of candidates for Level 1 status personnel.
- f. Initiating changes to quality procedures.
- g. Implementing the Quality Assurance Program if assigned that authority by the employer policy or the Quality Assurance Program.
- h. Reviewing and, to the extent permitted under project/plant procedures, documenting approval of quality related aspects of safety-related coating and lining specifications.

### 6.3 Level 3

Personnel certified as having attained Painting Inspector Level 3 status, shall have verifiable experience in painting industry. The personnel shall have the following capabilities;

- a. Carrying out all of the duties and responsibilities of Level 2 status personnel.
- b. Training and verifying, for certification, the qualifications of candidates for Level 1, Level 2 and Level 3 status personnel.
- c. Evaluating the adequacy of programs used to train and certify personnel who will perform coating and lining work inspection.
- d. Verifying the qualification of personnel to be certified to Level 2 status personnel.
- e. Carrying out training and examination duties.
- f. Approving safety-related coating and lining work inspection procedures.

## 7.0 PRE-REQUISITE

7.1 Painting Inspector applicant shall, as a minimum, meet one or more of the requirements applicable to Level 1, Level 2 or Level 3 as listed in Table 1.

7.2 Applicant seeking direct access certification to Painting Inspector Level 2 without Painting Inspector Level 1 qualification shall meet both Level 1 and Level 2 experience requirements.

- 7.3 The applicant documents required include a listing of all educations, relevant work and employment. The documents shall include:
- an education background with relevant supporting documents,
  - a listing of all relevant employers and their contact information when available,
  - the nature of the work performed, the dates of employment, and
  - a letter of verification from the employer or client.
- 7.4 The educations, relevant work and employment documentation is subject to verification by Certification Department and false information is caused to reject the application and can disqualify the applicant from testing to become a Painting Inspector.

**Table 1: Painting Inspector Pre-requisite**

No.	Education	Experience			
		Activities	Level 1	Level 2	Level 3
1	High school graduation or equivalent	Equivalent inspection	6 months	3 years	10 years
		Level 1 inspection		1 year	
		Level 2 inspection			6 years
2	Completion of college level work leading to an Associate Degree or higher	Equivalent inspection	3 months	1 year	7 years
3	Four-year college graduation	Equivalent inspection		6 months	5 years

## 8.0 TRAINING REQUIREMENTS

- 8.1 The applicant shall provide documentary evidence, acceptable to RSA, that he has satisfactorily completed training in the subjects and level for which the certification is sought.
- 8.2 The training may include instructor-led training, personalized instruction, virtual instructor-led training, computer-based training, or web-based training.
- 8.3 Painting Inspector applicant shall satisfactorily complete a training program in the subjects applicable to Level 1, Level 2 or Level 3 as listed in Table 2.

**Table 2: Training Requirements**

No.	Subjects	Required Training Hours
<b>Level 1</b>		
1	Basic Corrosion Theory	16
2	Coating and Lining Technology	
3	Coating and Lining Work Procedures	
4	Materials Receiving, Storage and Handling	
5	Safety	
6	Pre-Surface Preparation Inspection	
7	Surface Preparation Inspection	
8	Calibration and Proper Use of Inspection Instruments	
9	Environmental Measurements	
10	Application Inspection	
11	Coating and Lining Defects	
<b>Level 2</b>		
1	Inspection Plan Preparation	24
2	Inspection Plans/Procedures	
3	Quality Assurance	
4	Engineering Specifications	
5	Codes and Standards	
6	Pre-Job and Job Conferences	
7	Surface Preparation Methods/Equipment	
8	Mixing Methods/Equipment	
9	Application Methods/Equipment	
10	Remedial Action	
11	Documentation	
<b>Level 3</b>		
1	All Level 1 and Level 2 topics	40
2	Procedure for Implementation of QA Programs	
3	Training Program Evaluation	
4	Verification of Credentials of Personnel Who Perform Inspections	

8.4 As a minimum, training shall include sufficient information to ensure that the applicant understands each of the subjects.

8.5 Applicant seeking direct access certification to Painting Inspector Level 2 without Painting Inspector Level 1 qualification shall complete both Level 1 and Level 2 trainings.

## 9.0 INDUSTRIAL EXPERIENCE

9.1 For all levels, experience may be sought following successful examination, the results of the examination shall remain valid for three (3) years after examination.

9.2 Documentary evidence of experience shall be confirmed by the employer and submitted to RSA.

9.3 Applicants shall have experience in an occupational function with a direct relationship to painting and coating to national or international standards and directly involved in one or more of the following:

- a. development of procedures, inspection requirements, acceptance criteria, and specifications for coating and lining works,



- b. planning, control and application of surface preparation and coating/lining in the preparation and completion of production coating and lining works, and
- c. as a blaster, painter, or paint/coating examiner in fabrication, manufacturing, or construction.

## **10.0 VISION REQUIREMENTS**

### **10.1 Requirements**

The applicant shall provide documentary evidence of satisfactory vision in accordance with the requirements described in Sections 10.2 through 10.4 below.

### **10.2 Administration**

The vision examinations shall be administered by an optometrist or a qualified person authorized by the employer. The tests of near visual acuity shall be carried out at initial certification and subsequent annually and verified by the employer.

### **10.3 Near-Vision Acuity**

The examination shall ensure natural or corrected near-distance acuity in at least one eye such that the applicant is capable of reading a minimum of Jaeger Number 1 or Times Roman N4.5 or equivalent letters (having a height of 1.6mm) at the distance not less than 30.5cm.

### **10.4 Color Contrast Differentiation**

The examination shall demonstrate the capability of distinguishing and differentiating contrast among colors or shades of gray used in the method, as specified by the employer.

## **11.0 CONDUCT OF EXAMINATION**

- 11.1 The applicant shall fulfil the minimum requirements of Training and Vision prior to the qualification examination.
- 11.2 All examinations shall be conducted in examination centers established, approved, and monitored by Certification Department.
- 11.3 At the examination, the applicant shall have in his possession valid proof of identification and an official notification of the examination, which shall be shown to the examiner or invigilator upon demand.
- 11.4 Any applicant who, during the course of the examination, does not abide by the examination rules or who perpetrates, or is an accessory to, fraudulent conduct shall be excluded from all further qualification examinations for a period of at least one (1) year.

- 11.5 Applicant shall not be permitted to bring into the examination area personal items, unless specifically authorized to do so by the examiner.
- 11.6 During the examination, applicants will be expected to choose the best answer from the options provided.
- 11.7 The Examination Department shall be responsible for the administration and initial grading of examinations. However, practical examination shall be invigilated by a person certified as Painting Inspector Level 2 or Level 3.
- 11.8 All qualification examination questions shall be approved by the Certification Department. The examination shall include only questions selected in an unpredictable way from RSA collection of questions valid at the date of examination.
- 11.9 Written examination (whether e-assessment or conventional) shall be invigilated by an examiner or by one or more trained invigilators placed under an examiner's responsibility.
- 11.10 An examiner shall not be permitted to examine any applicant:
- a. that he has trained for the examination for a period of two years from the date of the conclusion of the training activities.
  - b. who is working (permanently or temporarily) in the same facility as the examiner
- 11.11 Final grading shall be the responsibility of Certification Department.

## **12.0 EXAMINATION**

### **12.1 General Examination**

12.1.1 The General portion of the examination shall cover the basic principles of quality assurance and coating and lining work inspection.

12.1.2 The applicant shall be required, as a minimum, to give answers to multiple choice questions and closed-book examination in accordance with Table 3.

12.1.3 The General Examination shall be completed within the time listed in Table 4.

### **12.2 Specific Examination**

12.2.1 The Specific portion of the examination shall cover specific coating and lining work requirements, inspection procedures, codes, standards and specifications.

**Table 3: Painting Inspector Examination**

No.	Examination	Number of Questions/Samples		
		Level 1	Level 2	Level 3
<b>A</b>	<b>General</b>			
1	Basic principles of quality assurance and coating and lining work inspection	40	40	80
<b>B</b>	<b>Specific</b>			
1	Coating and lining work requirements, inspection procedures, codes, standards and specifications	20	20	50
<b>C</b>	<b>Practical</b>			
1	Inspection of surface preparation sample	2	2	2
2	Inspection of coating and lining sample	2	2	2
3	Environmental measurement	1	1	1
4	Writing inspection report	1	1	1
5	Writing work instruction		1	
6	Writing procedure			1

**Table 4: Examination Duration**

Examination	Duration (minutes)		
	Level 1	Level 2	Level 3
General	90	90	180
Specific	60	60	120
Practical	90	150	210

12.2.2 The applicant shall be required, as a minimum, to give answers to multiple choice questions and opened-book examination in accordance with Table 3.

12.2.3 The require procedures, codes, standards and specifications will be provided by the examiner.

12.2.4 The Specific Examination shall be completed within the time listed in Table 4.

### 12.3 Practical Examination

12.3.1 The Practical portion of the examination shall cover the use of coating and lining work inspection equipment and inspection procedures.

12.3.2 The applicant shall be required, as a minimum, to give answers to practical questions in accordance with Table 3.

12.3.3 The require procedures, codes, standards and specifications will be provided by the examiner.

12.3.4 The Practical Examination shall be completed within the time listed in Table 4.

## 13.0 GRADING

- 13.1 Each examinations shall be graded separately. When conventional pre-prepared paper-based examinations are used, an examiner shall be responsible for the grading of the examinations by comparison with model answers. E-assessment systems that automatically score applicant responses against stored data and grade the completed written examination according to prepared algorithms may be used.
- 13.2 To be eligible for certification, the applicant shall obtain a minimum grade of 70% in each portion of examinations (General, Specific and Practical). In addition, the composite grade of all three (3) portions for each Level shall be minimum 80%.
- 13.3 The examination are graded by comparing the replies given by the applicant against answer keys approved by RSA. Each correct reply scores 1 point and the mark attributed to the tests is the sum of the points obtained. For the final calculation, the mark of each test is expressed as a percentage.

## 14.0 RE-EXAMINATION

- 14.1 Applicant failing for reasons of unethical behaviour shall wait at least twelve (12) months before reapplying.
- 14.2 Applicant who fails to obtain the pass grade for any examination part, may be re-examined three (3) times in the failed part(s), provided that the re-examination takes place not sooner than thirty (30) days, unless further training acceptable to RSA is satisfactorily completed, nor later than three (3) years after the original examination.
- 14.3 Applicants may take the first retest(s) of the failed parts(s) without additional training. Only one retest without documented evidence of additional training is permitted.
- 14.4 Applicant failing all permitted re-examination shall apply for and take the examination in accordance with the procedure established for new personnel.
- 14.5 Painting Inspector applicant taking 2nd or 3rd retests shall require documented evidence of additional training as applicable to Level 1, Level 2 or Level 3 in accordance with Table 5.

**Table 5: Training Requirements for 2<sup>nd</sup> and 3<sup>rd</sup> Retest**

No.	Retest	Required Training Hours		
		Level 1	Level 2	Level 3
1	Full three (3) parts	16	24	40
2	Two (2) parts	12	16	24
3	One (1) part	8	8	16

## **15.0 QUALIFICATION ASSESSMENT**

- 15.1 The applicant shall fulfil the minimum requirements of education, training, experience, examinations and vision prior to certification.
- 15.2 The applicant shall provide documentary evidence, acceptable to RSA, the following:
  - a. education,
  - b. experience,
  - c. satisfactorily completed training, and
  - d. recent vision test.
- 15.3 Certification Department shall verify the examination grades given by the Examination Department.

## **16.0 IPCS CERTIFICATION**

- 16.1 Certification of IPCS Painting Inspectors shall be based on demonstration of satisfactory qualification in accordance with Section 15.0 on a serialized (unique number) certificate and a wallet card stating that the applicant has met the IPCS certification requirements.
- 16.2 Certification certificates and wallet cards shall contain the following:
  - a. the family name and forename of the certified inspector,
  - b. the date of issue of the certification,
  - c. the date upon which certification expires,
  - d. a reference to ASTM reference document and year of revision,
  - e. the level of certification,
  - f. the name of RSA,
  - g. if applicable, the scope of limitations to the certifications and the special applications,
  - h. a unique inspector identification number,
  - i. the signature of the certified inspector,
  - j. a photograph of the certified inspector in the case of the wallet card,
  - k. a device to prevent falsification of the wallet card, e.g. use of a cold seal, welding into plastic, and
  - l. the signature of Certification Manager.
- 16.3 Qualification certificates shall be fully completed at the time of signing by the Certification Manager. No fill-in-the-blank data remains to be completed by others.

## **17.0 CERTIFICATION VALIDITY**

Certification becomes effective from the date of completion of the initial examination and shall be valid for three (3) years unless revoked for reasons defined in Sections 18.0 and 20.0.

## **18.0 CONDITION OF CERTIFICATION**

The period of validity shall commence (date of issue of the certification) when all of the requirements for certification (education, training, experience, satisfactory vision test, success in examination) are fulfilled. Certification becomes invalid:

- a. at the discretion of RSA, e.g. after reviewing evidence of behaviour incompatible with the certification procedures or failure to abide by a code of ethics,
- b. if the inspector becomes physically incapable of performing his duties based upon failure of the visual acuity examination taken annually under the responsibility of his employer,
- c. if the inspector has not been actively engaged in the performance or supervision of coating and lining work inspection for a period of one (1) year or more during the certification period, and
- d. if the inspector fails recertification, until such time he/she meets the requirements for recertification or initial certification.
- e. if examination or certification fees are not paid when due.

## **19.0 CERTIFICATION VERIFICATION**

- 19.1 RSA shall release certification test results only to the applicant, or to a person or agency designated by the applicant upon written request, and with notarized and witnessed release.
- 19.2 Requests for verification of status and certification number of Painting Inspectors shall be provided to the requestors. Only the certification number, date certified, expiration date, photo, current status (current, revoked, etc.), and certification limitations (corrected vision, etc.) shall be provided by the RSA staff members without the express written approval of the inspector or certificate holder.

## **20.0 SUSPENSION AND WITHDRAWAL**

- 20.1 The Certification Committee shall have the power to suspend, refuse renewal, revoke, place on probation, or reprimand the Painting Inspector certification for misrepresentation of facts regarding personal qualifications, status, assignments, etc., relating to personnel certifications whether such misrepresentation was made at the time of application or on subsequent applications (renewal, etc.).
- 20.2 The Certification Committee may suspend, refuse renewal, revoke, place on probation, or reprimand a certificate holder, if found guilty of any unauthorized practice as outlined in Code of Ethics, Rules of Conduct, and Practice.
- 20.3 Reinstatement of a revoked certificate shall be allowed with no penalty or prejudice to the individual provided the reason for such revocation has been rectified to the Certification Committee's satisfaction.

## **21.0 CERTIFICATION RENEWAL**

- 21.1 The renewal application shall be presented within six (6) months before the date of expiration of the certification. Application presented within twelve (12) months after the date of expiration shall require recertification in accordance with Section 22.0 below. Over this period, no exception is admitted and the inspector shall take full examination in accordance with the procedure established for new applicant.
- 21.2 Certification may be renewed for a new period of three (3) years on production of:
- a. documentary evidence of a satisfactory visual acuity examination taken within the preceding 12 months.
  - b. actively engaged as Painting Inspector within the most recent three-year certification period.
  - c. taken a twenty (20) multiple choice questions Quiz relating to the latest revision of procedures, standards and codes, and shall pass minimum 70%.
- 21.3 “Actively engaged as a painting inspector” shall be defined as “no time period the inspector not performing or supervising of coating and lining work inspection for a period of one (1) or more years during the certification period”.
- 21.4 The Inspectors are allowed to attempt two (2) Quiz re-tests and shall not beyond the expiry of the certificate. Inspectors failing all permitted Quiz re-tests shall be recertified in accordance with Section 22.0 below.

## **22.0 RECERTIFICATION**

- 22.1 Recertification by written examination is required for any one of the following factors:
- a. Inspectors who satisfy requirement 21.2a but have not satisfy requirements 21.2b and/or 21.2c, and
  - b. Every nine (9) years renewal from the date of initial certification, and satisfy requirements 21.2a.
- 22.2 The Inspectors are allowed to attempt two (2) re-tests and shall not exceed one (1) year after the expiry of the certificate.
- 22.3 Inspectors failing all permitted recertification examination re-tests shall apply for and take full examination in accordance with the procedure established for new applicant.
- 22.4 All Painting Inspectors shall be given Quiz in accordance with Section 21.2c and Practical Examination in accordance with Section 12.4 and shall pass minimum 70% for both Quiz and Practical Examination.

## **23.0 CERTIFICATION LEVEL UPGRADE**

- 23.1 IPCS Painting Inspector Level 1 may upgrade to Level 2 by satisfying the Level 2 requirements for education, training, experience, vision test and examination.
- 23.2 IPCS Painting Inspector Level 2 may upgrade to Level 3 by satisfying the Level 3 requirements for education, training, experience, vision test and examination.

## 24.0 RECORDS

Personnel certification records shall be maintained and updated for the duration of 10 years after expiry and shall include the following:

- a. Name of certified individual.
- b. Level of certification and limitations (if any), as applicable.
- c. Educational background and experience of certified individuals.
- d. Records indicating satisfactory completion of training.
- e. Results of the vision examinations for the current certification period.
- f. Current examination copy(ies) or evidence of successful completion of examinations.
- g. Composite grade(s) or suitable evidence of grades.
- h. Dates of certification and/or recertification.
- i. Certification expiration date.

