



**ISO/IEC
17024:2012
CERTIFICATION
SCHEME
FOR BLASTING
AND
PAINTING**

CIDB-CS-03

1 MARCH 2022

INTRODUCTION

Construction Industry Development Board or better known as CIDB Malaysia is a statutory body under the Ministry of Works, Malaysia established under the Construction Industry Development Board Act 1994 (Act 520) to regulate, develop and facilitate the construction industry towards achieving global competitiveness.

One of the functions of CIDB is to register, accredit and certify construction personnel which includes skilled construction workers as specified under the Third Schedule of this Act.

CIDB is establishing a Certification Scheme for Construction Personnel which provides guidance for assessment and certification of individuals seeking to demonstrate their knowledge and/or competency in their field of operation. In order to ensure the accreditation and certification process is at par with international standards, CIDB is committed to uphold objectivity and impartiality in carrying out all activities under this Certification Scheme in accordance with ISO/IEC 17024:2012.

The scope of this Certification Scheme covers Blaster Level 2 and Painter Level 2.

Access to certification

Access to certification is not improperly restricted. The sole criteria for certification are given in the document (and any subsequent amendments) and no other criteria will be applied. Certification is not conditional on the candidate applying for other services with CIDB, or any other groups or associations.

1. GENERAL

This document prescribes procedures by which personnel may be examined, and, if successful, certified for SKKP Blaster Level 2 and SKKP Painter Level 2. The certification will be executed in accordance with NOSS Standard F433-004-2 (latest version).

The assessment procedure is designed to test the candidate's knowledge of the methods and techniques relevant to the discipline in which they are being examined, and their understanding of the operations they perform. The assessment procedure involves both theoretical (written and/or oral interview) and practical elements.

1.1 Requirements prior to taking a certification test

Job responsibilities and experience criteria for assessment eligibility as given below are strictly adhered to and enforced.

Candidate shall have minimum six (6) months working experience or follows as stated in Clause 1.2.

1.2 Training

All candidates must attend a CIDB approved training course prior to assessment.

1.3 Vision Requirements

Apart the requirement stated in 1.1 and 1.2, candidates need to be in a satisfactory physical condition, and the person completing the application form will be required to signify that the candidate's health is adequate to enable them to carry out their duties. The candidate shall provide documented evidence of satisfactory vision in accordance with the following requirement:

- a) Near vision acuity shall permit reading a minimum of Jaeger number 1 or Times Roman N 4.5 or equivalent letters (having a height of 1,6 mm) at not less than 30 cm with one or both eyes, either corrected or uncorrected.

With all the above eligibility requirements, the onus is on the candidate to provide the necessary evidence prior to assessment. An assessment appointment will not be confirmed until the evidence has been received. Subsequent to certification, tests of visual acuity shall be carried out annually.

2. TERMINOLOGY

a) Abrasive blasting

A surface preparation method by cleaning surfaces under high pressure streams to remove contaminants or paint before applying a protective coating on the surface.

b) Assessor

Person competent appointed by CIDB to conduct and score an assessment, where the assessment requires professional judgement.

c) Candidate

Person who has fulfilled specified prerequisites and has been admitted to the certification process.

d) Certificate

Document issued by CIDB under specified provisions, indicating that the named person has demonstrated the competence(s) defined on the document.

e) Fusion bonded epoxy coating

A method to coat the surface using epoxy-based powder which are set thermally and sprayed onto surfaces to form a coating. It is an environmentally safe thermosetting coating method since it forms a hard barrier right after it melts and fuses on metal surface.

f) High pressure water jet blasting

A method to coat the surface using epoxy-based powder which are set thermally and sprayed onto surfaces to form a coating. It is an environmentally safe thermosetting coating method since it forms a hard barrier right after it melts and fuses on metal surface.

g) Passive fire protection coating

A method to coat the surface using fire protection and fire resistance properties.

h) Protective coating and painting

A method to paint and coat the surface to give a fine appearance for longer protection against corrosion.

i) Renewal

To demonstrate “Compliance through Competence”, candidate must renew Certification on a periodic basis. A renewal application can be received up to six (6) months prior to the expiry of certificate.

j) Recertification

Procedure for revalidation of a certificate by assessment or by otherwise satisfying CIDB that the published criteria for recertification are satisfied.

k) Stripe coat

Additional coats of paint that are applied locally to welds, fasteners and external corners. Their function is to build a satisfactory coating thickness at edges and corners where paint has a tendency to contract and thin upon drying.

l) Thermal metal spray coating

A method to coat the surface using metallic materials being deposited in molten condition onto surfaces by heat application to form a coating. This is to enhance the corrosion resistance of a surface, thus giving protection of structures in the most hostile environment such as sea water.

m) Wet film thickness / Dry film thickness

A method to measure coating thickness after coating is applied to steel surfaces, which have been previously cleaned with abrasive blasting.

3. ELIGIBILITY FOR ASSESSMENT

- 3.1** Candidate shall have minimum six (6) months working experience or valid training from CIDB recognized training provider.
- 3.2** Candidate shall pass the vision test as per clause 1.3 (Vision Requirements).
- 3.3** The decision to accept candidates shall be decided by CIDB.

4. JOB AND TASK DESCRIPTION

Blaster/Painter shall be competent for performing a Blasting and Painting process of which he/she is certified, in accordance with a set of written instructions contained in the National Occupational Skills Standard (NOSS) F433-004-2:2018 and other related standard as per clause 7.0 to produce acceptable surface coating result. In order to achieve this quality level, the following tasks shall be accomplished:

4.1 Blaster (Level 2) and Painter (Level 2)

a) Risk Assessments, Health, safety and environmental requirements:

Implementation of guidance and obligations to protect self, others and the environment from the processes and materials or equipment being used.

b) Equipment checks:

Carry out pre-checks on all equipment including compressors, air supplies, blast pots, hose connections, whiplash restraints, nozzles, air-breathing filters, dead man's handles, spray guns, spray pumps etc.

c) Materials/Consumables:

Carry out checks on abrasives for signs of contamination, expiry dates of paints etc.

d) Personal Protective Equipment:

Carrying out pre-use checks and routine care and maintenance of all PPE (blasting helmets, blasting overalls, dust and chemical respirators, eye/ear protection, safety boots, microporous coveralls) and ensuring correct use.

e) Set-Up of Equipment:

Ensuring correct set up of dry abrasive blasting and spray-painting equipment.

f) Techniques:

- i. Preparing surfaces to the required standard in accordance with the relevant specification prior to blasting.
- ii. Preparing surfaces to the required standard in accordance with the relevant specifications prior to the application of paints and related products.
- iii. Painting and coating surfaces with brushes or spray application in accordance with the manufacturers' recommendations and relevant specification requirements.
- iv. Considering potential impacts on the environment and other personnel when handling, using and disposing of materials associated with blasting and painting operations.

g) Surface preparation:

Assess surface conditions and select the preparation technique appropriate to the degree of corrosion and surface cleanliness to achieve the specified result.

5. ASSESSMENT METHOD FOR INITIAL CERTIFICATION AND RECERTIFICATION

The assessment aims to test and certify the competency of candidate seeking certification of their Blaster level 2 and Painter level 2 skills as per clause 3.0 (Eligibility for Assessment). The candidates shall be assessed through two (2) parts:

5.1 Part 1 (theoretical assessment through written and/or oral interview):

A theoretical assessment through written and/or oral interview shall consist of 20 questions of multiple choice of the following item:

a) Blaster

- i. Abrasive equipment preparation (6 Questions)
 - Preparation of work area
 - Blasting equipment setup
- ii. Abrasive blasting operation (14 Questions)
 - Safety and health
 - Abrasive
 - Blasting standards
 - Surface imperfection

b) Painter

- i. i.Painting equipment preparation (6 Questions)
 - Prepare work area
 - Setup painting equipment
- ii. Protective painting operation (14 Questions)
 - Safety and health
 - Climatic condition
 - Paint technologies
 - Paint application
 - Paint defect

Time allowed : 40 minutes

Passing marks : 70%

5.2. Part 2 (Practical assessment):

A practical assessment shall consist of:

a) Blaster Level 2

No	Assesstment	Weightage (%)	Output/Result
1	Blasting preparation	20	<p>Able to:</p> <ul style="list-style-type: none"> • Carry out work area preparation for blasting according to standard requirements. • Demonstrate the application of safety working procedure and PPE for blasting.
2	Abrasive blasting operation	60	<p>Able to:</p> <ul style="list-style-type: none"> • Determine the quality level of abrasive media. • Set up the blasting equipment according to the specification. • Perform blasting activities. • Perform blasting finishing and small repairs. • Identify incomplete blasting activities. • Demonstrate the application of safety working procedure and PPE for blasting.
3	Material and Equipment Storage Handling	20	<p>Able to:</p> <ul style="list-style-type: none"> • Identify blasting material and equipment storage requirements at workplace • Execute blasting material transfer plan • Perform blasting equipment labelling • Execute blasting equipment transfer plan • Perform blasting equipment labelling

Time allowed : 120 minutes

Passing marks : 70%

b) Painter Level 2

No	Assesstment	Weightage (%)	Output/Result
1	Painting preparation	20	<p>Able to:</p> <ul style="list-style-type: none"> • Carry out work area preparation for painting according to standard requirements. • Demonstrate the application of safety working procedure and PPE for painting.
2	Protective coating and painting	60	<p>Able to:</p> <ul style="list-style-type: none"> • Determine the quality level of the protective coating and painting material • Set up the protective coating and painting equipment according to the specification • Perform the protective coating and painting activities • Identify incomplete the protective coating and painting activities • Demonstrate the application of safety working procedure and PPE for painting
3	Material and Equipment Storage Handling	20	<p>Able to:</p> <ul style="list-style-type: none"> • Identify painting material and equipment storage requirements at workplace • Execute painting material transfer plan • Perform painting equipment labelling • Execute painting equipment transfer plan • Perform painting equipment labelling

Time allowed : 120 minutes

Passing marks : 70%

6. REQUIRED COMPETENCE

The qualification of candidate to be a certified Blaster and Painter shall be based on essential variables. For each essential variables, a range of qualification is defined in the standard NOSS, F433-004-2:2018.

For level 2, the certified blaster and painter shall be competent in performing a significant range of varied work activities, perform in variety of context. Some of the activities are non- routine and required individual responsibility and autonomy.

The blasters and painters are required adhered strictly to legislative requirement particularly to the use of Personal Protective Equipment (PPE) as per Health, Safety and Environment (HSE) requirement.

6.1 Blaster Level 2 shall be competent to:

- a) Prepare blasting work area, ensure functionality of blasting equipment and perform blasting work area housekeeping.
- b) Interpret blasting Job Safety Analysis (JSA) or Permit to Work (PTW), inspect blasting media, set up blasting equipment, carry out blasting equipment servicing,
- c) Perform blasting activity, blasting finishing and small repairs.
- d) Identify blasting material and equipment storage requirements, execute blasting material transfer plan, perform blasting material labelling, execute blasting equipment transfer plan and perform blasting equipment labelling.
- e) Interpret applicable standards/ codes of practice/ specification/ regulatory requirements to related blasting activities.

6.2 Painter Level 2 shall be competent to:

- a) Prepare painting work area, ensure functionality of coating and painting equipment and perform painting area housekeeping.
- b) Interpret blasting Job Safety Analysis (JSA) or Permit to Work (PTW), inspect painting materials, set up painting equipment and carry out painting equipment servicing.
- c) Perform panting activity, painting finishing and small repairs.
- d) Identify painting material and equipment storage requirements, execute painting material transfer plan, perform painting material labelling, execute painting equipment transfer plan and perform painting equipment labelling.
- e) Interpret applicable standards/ codes of practice/ specification/ regulatory requirements related to painting activities.

7. STANDARDS

This document makes reference to the standards and specifications listed below. Unless otherwise specified the latest editions of these documents, including all addenda and revisions, shall apply.

7.1. Standards for Blasting and Painting

NOSS F433-004-2:2018	Blasting and Painting Operation (Oil and Gas) Level 2
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a) Reference for Blasting

ISO 8501 – 1 :2007	Preparation of steel substrates before application of paints and related Products Visual assessment of surface cleanliness Part 1: - Rust grades and preparation of uncoated steel substrates and steel substrates after overall removal of previous coatings.
ISO 8501 – 3 :2006	Preparation of steel substrates before application of paints and related Products Visual assessment of surface cleanliness Part 3: - Preparation grades of welds, edges and other areas with surface imperfections.
SSPC-SP/NACE	Surface Preparation Standards
ISO 8502 – 3: 2017	Preparation of steel substrates before application of paints and related products-Test for the assessment of surface cleanliness Part 3: - Assessment of dust on steel surface prepared for painting (pressure sensitive tape method).
ISO 8503 – 5: 2017	Preparation of steel substrates before application of paints and related products - Surface Roughness characteristics of blast-cleaned steel substrates Part 5: Replica tape method for the determination of surface profile.
ISO 8504 – 2: 2001	Preparation of steel substrates before application of paints and related product-Surface preparation methods. Part 2: Abrasive blast-cleaning

b) Reference for Painting

ISO 29601:2011	Paint and varnishes - Corrosion protection of steel structures by protective paint systems-Assessment of porosity in a dry film.
ISO 2808-2007	Paints and varnishes-Determination of film thickness.
ISO 19840-2012	Paints and varnishes - Corrosion protection of steel structures by protective paint systems Measurement of, and acceptance criteria for the thickness of dry films on rough surfaces.

8. CERTIFICATES

The certificates shall contain, as a minimum, the following information:

- a) The name of the certified person
- b) A unique identification
- c) The name of the certification body
- d) A reference to the certification scheme, standard or other relevant documents, including issue date, if relevant
- e) The scope of the certification including, if applicable, validity conditions and limitations
- f) The effective date of certification and date of expiry.

9. CODE OF CONDUCT

Certified person of all level and methods shall:

- a) Always abide by the Health, Safety and Environment (HSE) requirements.
- b) Always wear PPEs as required such as gloves, goggles, helmet and ear mug or ear plug, mask, flame / heat resistant long shirt and safety shoes as applicable.
- c) Ensure that all tools and equipment's are in working condition and kept at designated location.
- d) Ensure inspection and measuring equipment are calibrated.
- e) Be aware of the presence of an explosive gas in the working area.
- f) Be aware of all related procedures and process.
- g) Not involve in any type of gambling and other associated activities
- h) Not consume any alcohol and impairing drug while on duty.
- i) Not associate with or participate in a fraudulent or dishonest venture or activity.

10. APPLICATION FOR ASSESSMENT

- 10.1 Candidates will be required to submit an application through Centralized Information Management System (CIMS). Document considered accepted for processing upon received of complete documents.
- 10.2 In the event of a false statement being discovered in any form, assessment undertaken will be declared null and void.
- 10.3 A certificate is automatically invalidated if there are any outstanding assessment fees in respect of that certificate.
- 10.4 Candidates proved to have cheated or found to have attempted to remove or found to have removed assessment material in a CIDB assessment will not be accepted as a candidate for any CIDB assessment for a minimum period of two (2) years from the date of the assessment where cheating, attempt to remove or remove all of assessment material, was established to have taken place.

11. VALIDITY

11.1 General

The maximum period of validity of the certificate is five (5) years. The period of validity shall commence (date of issue of the certification) when all of the requirements for certification (training, experience, satisfactory vision test, success in assessment) are fulfilled.

11.2 Certification becomes invalid:

- a) At the discretion of CIDB, e.g., after reviewing evidence of behaviour incompatible with the certification procedures or failure to abide by a certification agreement;
- b) If a significant interruption takes place in the method for which the individual is certified; or submission of a documentary evidence (form or log book etc) at least once a year.
- c) If the individual fails recertification, until such time as the individual meets the requirements for recertification or initial certification.
- d) If the individual becomes physically incapable of performing his duties based upon failure of the visual acuity assessment taken annually under the responsibility of his employer.

11.3 Re-assessment

- a) A candidate failing for reason of unethical behaviour shall wait at least 12 months before reapplying
- b) A candidate who fails to obtain the pass grade from any assessment part, may be re-examined twice in the failed part(s), provided that the re-assessment takes place not sooner than one (1) month, unless, further training acceptable to the CIDB is satisfactorily completed, nor later than two (2) years after the original assessment. Note: *“Examination parts” in this context refers to: for Level 1 and 2, the general, theory, and practical examinations.*
- c) A candidate failing all permitted re-assessment shall apply for and take the assessment in accordance with the procedure established for new candidates.

11.4 Revalidation

- a) CIDB shall define the conditions for revalidation in the case of 12.1(a) & 12.1(b), shall conduct practical assessment.
- b) CIDB shall define the conditions for revalidation in the case of 11.2(d) for vision test according to clause 1.3.
- c) For revalidation of the certification after a significant interruption, the individual shall pass a recertification assessment. The certification is revalidated for a new period of validity of five (5) years from the date of the revalidation.

12. RENEWAL

- 12.1** Prior to the completion of the first period of validity and every ten (10) years thereafter, certification may be renewed by CIDB for a new period of five (5) years on production of:
 - a) Verifiable documentary evidence of continued satisfactory work activity without significant interruption in the method and sector for which certificate renewal is sought.
 - b) If the criterion for renewal is not met, the individual shall follow the same rules as for recertification (see Clause 13).
- 12.2** It is the responsibility of the certificate holder to initiate the procedure required for renewal. The renewal files shall be presented within six (6) months before the date of expiration of the certification. As an exception, and based upon decision of CIDB, files presented within twelve (12) months after the date of expiration may be considered. Over this period, no exception is admitted, and the candidate shall be permitted to attempt a recertification assessment.

13. RECERTIFICATION

13.1 General

- a) Prior to the completion of each second period of validity every ten (10) years, the certified individual may be recertified by CIDB for a new period of five (5) years or less, provided the individual meets the criterion for renewal specified in 12.0 and meet the applicable conditions described in the following:
 - i. Regulatory requirements;
 - ii. Changes to normative documents;
 - iii. Changes in the relevant scheme requirements;
 - iv. The nature and maturity of the industry or field in which the certified person is working.
 - v. The risks resulting from an incompetent person;
 - vi. Ongoing changes in technology, and requirements for certified persons;
 - viii. Requirements of interested parties;
The frequency and content of surveillance activities, if required by the scheme.
- b) It is the responsibility of certificate holders to initiate the procedures required to obtain recertification. If the recertification is applied for more than twelve (12) months after expiry of the period of validity, he/she shall need to attend course and complete assessment (theory and practical) for Level 2.

13.2 Unsuccessful Candidates

- a) Candidates will be required to submit an application Centralized Information Management System (CIMS). One retest, within six (6) months of the ten (10) years recertification assessment, will be allowed for all categories.
- b) Candidates who fail the retest, will return to initial status and shall be required to sit the full initial assessment, it is recommended that refresher training be undertaken prior to the assessment.

13.3 Complaints and appeals

- a) An aggrieved party in a dispute which considers itself to have reasonable grounds for questioning the competency of a CIDB qualified person may petition to the *Jawatankuasa Rayuan Pentauliahah, Penilaian & Pensijilan CIDB* for invalidation of the certificate. Such a petition must be accompanied by all relevant facts, and if in the opinion of the committee an adequate case has been presented, a full investigation of the circumstances under dispute will be initiated.
- b) Appeals against failure to certify or against the invalidation of the certificate may be made by the holder upon application in writing to the *Jawatankuasa Rayuan Pentauliahah, Penilaian & Pensijilan CIDB*.

14. SUSPENDING FOR INVALIDITY AND WITHDRAWING OF CERTIFICATION

- 14.1** The certification shall be immediately placed under suspension, if CIDB does not receive an application for renewal from the certificate holder after the date of expiration. The suspension period shall be (3) three months maximum from the date of certification decision. The person will be required to submit a new application for certification exceeding 3 months after expiry date.
- 14.2** Failure to submit an application for renewal together with satisfactory documentary evidence, the certification shall be presented to the certification panel committee for withdrawal. CIDB shall communicate such certification decisions to the certificate holder within 15 days from the certification decision date.
- 14.3** The certificate holder may lodge an appeal for reconsideration of certification decision withdrawal made by CIDB Certification Panel related to withdraw the certificate.
- 14.4** A fresh application shall be applied for new certification in order to regain certification for that level and method. No assessment exemptions shall be permitted by virtue of the previous certification of similar scope held.

15. RECORDS

- 15.1** CIDB shall maintain records. The records shall include a means to confirm the status of a certified person. The records shall demonstrate that the certification or recertification process has been effectively fulfilled, particularly with respect to application forms, assessment reports (which include assessment records) and other documents relating to granting, maintaining, recertifying, expanding and reducing the scope and suspending or withdrawing certification.
- 15.2** The records shall be identified, managed and disposed of in such a way as to ensure the integrity of the process and the confidentiality the information. The records shall be kept for an appropriate period of time, for a minimum of one full certification cycle, or as required by recognition arrangements, contractual, legal or other obligations.

16. ADDRESS

For further general information about the approval schemes covered in this document, contact:

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