IMM TRAINING & CERTIFICATION SCHEMES 2023/2024

Training & Certification Needs for Industrial Skillsets

EDITED BY

TAY CHIA CHAY & BRIAN LIM SIONG CHUN

CERTIFICATION BY

INSTITUTE OF MATERIALS, MALAYSIA

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IMM TRAINING AND CERTIFICATION SERVICES

The Institute of Materials, Malaysia has been associated with the training and certification of technical workers for more than 30 years. A major part of these schemes involves the certification of engineers and technicians in the oil and gas industry. IMM is currently making inroads into the construction, power, and transport industries.

The job of personnel in these industries requires individuals to be competent and IMM has built a reputation over the years as a reliable training and certification body. To-date IMM has certified more than 9000 skilled workers through its competency development and certification programs for skilled workers. Most of them are required to carry out tasks that demand special skills while a significant number are also involved in making important technical judgements or decisions. Such judgements/decisions carry a significant impact on the work being carried out and any errors or shortcomings could result in serious consequences such as structural failures, corrosion, vibrations, loss of products, economic loss and injuries or even loss of lives.

Benefits of IMM Certification

IMM-approved training courses and the related certification programs are designed to equip workers with the skills and knowledge for entry into the industrial sector. The IMM certification provides proof and assurance to prospective employers that the certified persons have reached a given level of proficiency in a particular field. The focus is not only on developing competencies and skills from raw talent but also on upskilling their existing competencies to complement their work experience as it provides a jumping-off point for career advancements in the industry. Such skills enhancement through formal certification programs will expose the workforce to related and new technologies for improved efficiency. This in turn leads the existing workforce towards enhancing national productivity and making our industries more competitive.

IMM certification also increases the value of the competency tested worker to their respective organizations. IMM certification opens more doors as many positions work out better with a certified hire in place as industry work specifications increasingly demand certified personnel for contract jobs. Employers are more inclined, towards the certified candidate over the uncertified one. In addition, IMM's certification programs give certified persons access to additional resources and better networking opportunities with peers and industry leaders, providing various opportunities for business and career advancements.

Figure 1 summarizes the benefits of IMM training and certification programs.

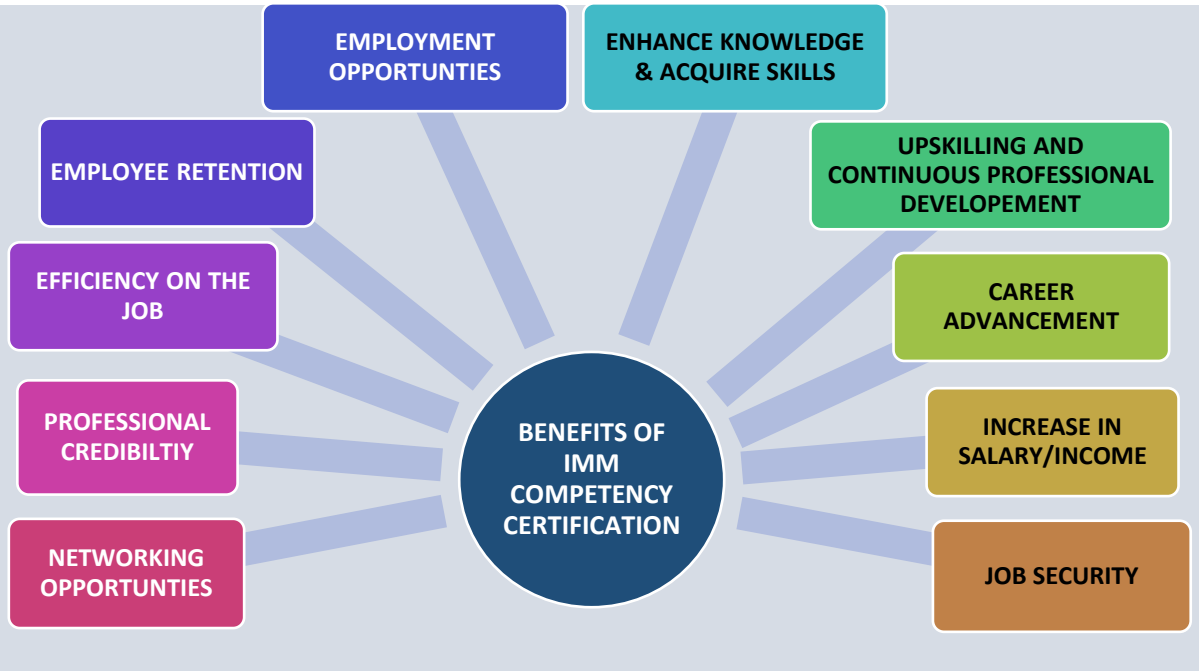


Figure 1: Benefits for Persons Certified to IMM Certification Schemes

Development of Certification Schemes

As one of the nation's recognized certification body for skilled workers in the materials science and technology fields, IMM has the capability to assess and certify that a person is competent to standards established and required by the industry in various sub-fields. Competence-based certification means that IMM is expected to examine a candidate's knowledge, skills, personal attributes, and qualifications specific to the program and/or scope of certification.

IMM's certification schemes have been developed over the years along with the competence criteria. The Technical Committees comprising subject matter experts continue to play a crucial role in developing new certification schemes or upgrading existing schemes and ensuring standards of competence meet the industry requirements. The development or review of the certification schemes is coordinated by Program Custodians nominated by the respective Technical Committees. The Program Custodian acts as the liaison between the Technical Committee and the IMM Secretariat which works closely with the Examination and Certification Panel.

The Examination and Certification Panel is the approving authority for all matters relating to examination and certification and includes examination sets, examiners, examination results, certification schemes and details, quality manuals and SOP, and other documents.

IMM's certification schemes for each category of competency cover the following elements in line with ISO requirements:

- Scope – job and certification title
- Job and task description – description of the tasks required to perform the audit
- Required competence – knowledge and skills
- Prerequisites – qualifications, work experience and training
- Assessment methods – written, oral, practical and observations
- Examination structure and duration
- Criteria for certification – assessments/examination pass scores
- Criteria for recertification – confirmation of continuing satisfactory work, work experience, examination/interview, continuous professional development

Figure 2 shows a list of the more popular IMM certification schemes including newly introduced schemes such as Mechanical Joint integrity, Thermit Welding and Coating Fingerprinting.

To ensure continued competency of the certified personnel, IMM has stipulated re-certification requirements which require renewal of certification at the end of 3 years or 5 years depending on the individual scheme. The process of re-certification involves assessment of the manager- or supervisor-endorsed work experience during the certification cycle, compliance to continuous professional development requirements and may include the need for a refresher course followed by an examination.

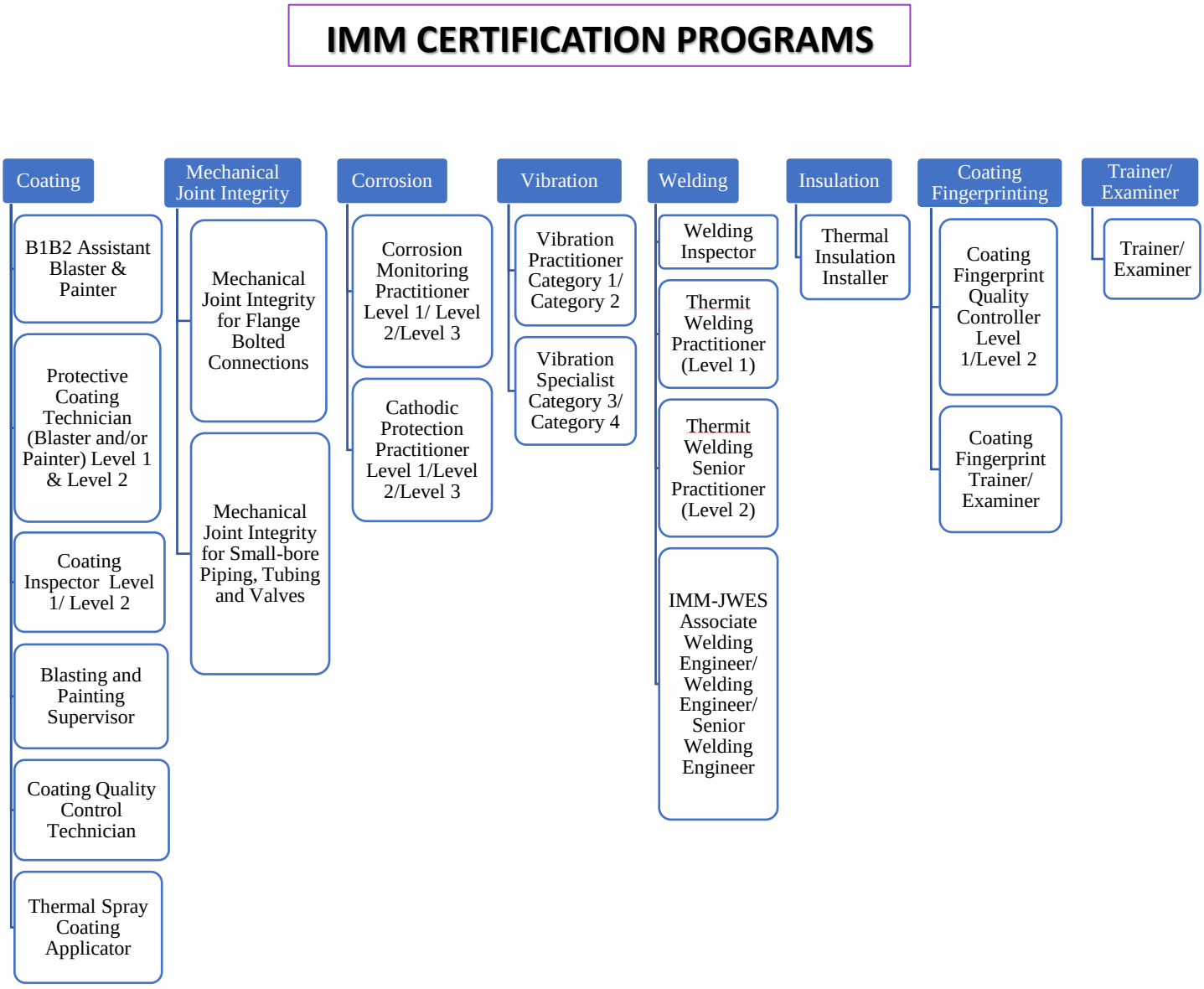


Figure 2: List of IMM Certification Schemes

Maintaining the Standards, Impartiality and Credibility of IMM Certification Schemes

To add further credence to its certification operations, IMM has received Certification of Accreditation to ISO/IEC 17024, *Conformity assessment – General requirements for bodies operating certification of persons* with the accreditation number ACB PS 0006 on 29th March 2021 from Standards Malaysia. The schemes covered are the Mechanical Joint Integrity (MJI) and Coating Inspector (CI) certification schemes.

S/N: 1842

STANDARDS MALAYSIA

Certificate of Accreditation

Accreditation No.: ACB PS 0006

Accredited since: 29 March 2021

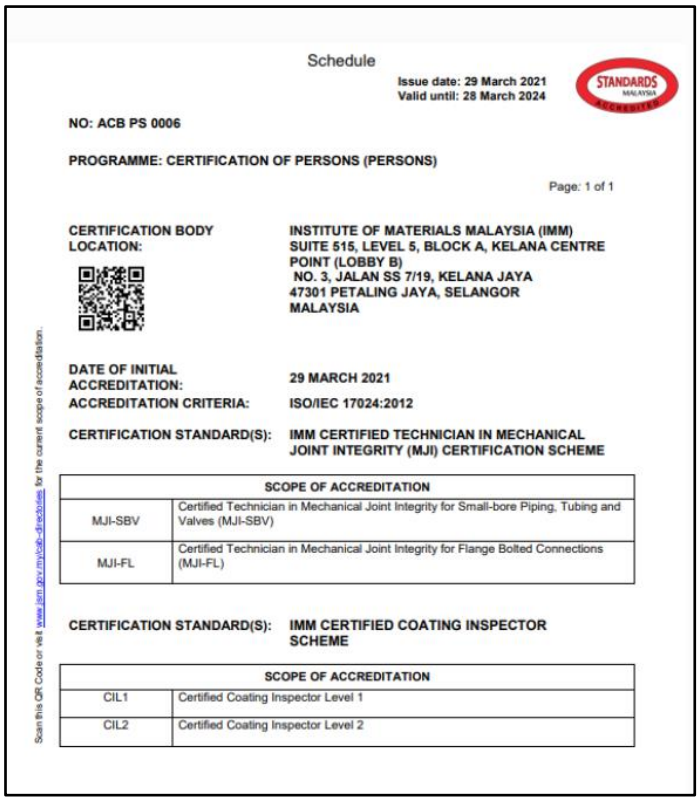
INSTITUTE OF MATERIALS MALAYSIA (IMM)
PETALING JAYA, SELANGOR
MALAYSIA

has been accredited as a Persons Certification Body for the scope of accreditation detailed in the *SCHEDULE* listed on Standards Malaysia website, www.jsm.gov.my/cab-directories, subject to the terms and conditions governing the Scheme for the Accreditation of Certification Bodies.

(SHAHARUL SADRI BIN ALWI)
Director General
Department of Standards Malaysia

Date of issue: 29 March 2021

Issuance of this Certificate is governed by Section 16 Subsections (2) and (3) of Standards of Malaysia Act 1996 (Act 549)



Schedule

Issue date: 29 March 2021
Valid until: 28 March 2024

NO: ACB PS 0006

PROGRAMME: CERTIFICATION OF PERSONS (PERSONS)

Page: 1 of 1

CERTIFICATION BODY LOCATION: INSTITUTE OF MATERIALS MALAYSIA (IMM)
SUITE 515, LEVEL 5, BLOCK A, KELANA CENTRE POINT (LOBBY B)
NO. 3, JALAN SS 7/19, KELANA JAYA
47301 PETALING JAYA, SELANGOR
MALAYSIA

DATE OF INITIAL ACCREDITATION: 29 MARCH 2021

ACCREDITATION CRITERIA: ISO/IEC 17024:2012

CERTIFICATION STANDARD(S): IMM CERTIFIED TECHNICIAN IN MECHANICAL JOINT INTEGRITY (MJI) CERTIFICATION SCHEME

SCOPE OF ACCREDITATION	
MJI-SBV	Certified Technician in Mechanical Joint Integrity for Small-bore Piping, Tubing and Valves (MJI-SBV)
MJI-FL	Certified Technician in Mechanical Joint Integrity for Flange Bolted Connections (MJI-FL)

CERTIFICATION STANDARD(S): IMM CERTIFIED COATING INSPECTOR SCHEME

SCOPE OF ACCREDITATION	
CIL1	Certified Coating Inspector Level 1
CIL2	Certified Coating Inspector Level 2

Scan this QR Code or visit www.jsm.gov.my/cab-directories for the current scope of accreditation.

The structure in place at IMM ensures impartiality which is a major requirement under ISO/IEC 17024 as training and certification activities are segregated. Pre-requisite training is outsourced to Associate Training Partner (ATP) and Authorised Training Bodies (ATBs) who manage the training while IMM takes responsibility for the conduct of the certification examinations, independent of the training. However, generally, for the convenience of the candidates, the examinations are scheduled back-to-back with the training while ensuring that the examiner assigned is not the trainer. Meanwhile, Authorised Testing Centre (ATC) offers IMM examinations and assessments only.

The synergy between the industry and academia puts IMM in a strong position as a leading certification body and enables IMM to not only develop the training and certification programs but also to assess and certify if a candidate complies with the skill sets required to work in the industry according to established requirements/specifications. Thus, IMM certification programs developed jointly by the industry and academia have been proven to improve confidence on the job to both employer and employee and the user of services of the certified persons.

Conclusion

Being backed by technical resources, IMM's competency training and certification programs are well recognized by multi-national companies, small and medium enterprises and by authorities and clients in Malaysia as well as beyond its borders. With reviews and further improvements initiated in 2022, the year 2023 shall continue to see the dawning of a new era for IMMs' certification programs.

AREA OF ASSESSMENT FOR CERTIFICATION PROGRAMS

Competency	**A**	**Knowledge and understanding** Apply fundamental knowledge and understanding existing and emerging technology
	B	**Application to practice/analysis** Apply appropriate theoretical and practical methods to the analysis
	C	**Leadership/management/supervision skill** Committed to provide technical leadership/management/supervision
Commitment	**D**	**Interpersonal skill** Effective communication/social skills
	E	**Professional conduct** Social responsibilities and committed to professional standards

IMM TRAINING AND CERTIFICATION PROGRAM OVERVIEW

The Institute of Materials, Malaysia (IMM) offers engineering & technical professionals and practitioners a range of Certification Schemes and technical training courses to meet the requirements of the oil & gas, refining, petrochemical, transport, construction and other industries. Our programs have been developed together with the industry, academia and relevant stakeholders to ensure that the technical training and certification provided meet the relevant industry standards and requirements.

PROGRAM: COATING

IMM Certification Schemes and Courses	Technical Training Courses (Non-certification)
• Certified Protective Coating Technician (Blaster and/or Painter) Level 1 and Level 2 • Certified B1B2 Assistant Blaster & Painter • Certified Coating Inspector Level 1** • Certified Coating Inspector Level 2** • Certified Blasting and Painting Supervisor • Certified Thermal Spray Coating Applicator • Certified Coating Quality Control Technician ** Accredited to ISO/IEC 17024	• Refresher Course of Certified Protective Coating Technician • Refresher Course of Certified Coating Inspector • Basic Knowledge on Corrosion Protection for Technicians and Engineers • Corrosion Control by Protective Coating • Corrosion Control by Protective Paints

PROGRAM: COATING FINGERPRINTING

IMM Certification Schemes and Courses	Technical Training Courses (Non-certification)
• Certified Coating Fingerprint Quality Controller Level 1 • Certified Coating Fingerprint Quality Controller Level 2 • Certified Coating Fingerprint Trainer/Examiner	• Coating Fingerprint Foundation Course • Refresher Course of Certified Coating Fingerprint Quality Controller

PROGRAM: CORROSION

IMM Certification Schemes and Courses	Technical Training Courses (Non-certification)
• Certified Corrosion Monitoring Practitioner Level 1 • Certified Corrosion Monitoring Practitioner Level 2 • Certified Corrosion Monitoring Practitioner Level 3 • Certified Cathodic Protection Practitioner Level 1 • Certified Cathodic Protection Practitioner Level 2	• Corrosion Control by Cathodic Protection

• Certified Cathodic Protection Practitioner Level 3	

PROGRAM: VIBRATION

IMM Certification Schemes and Courses	Technical Training Courses (Non-certification)
• Certified Vibration Practitioner Category 1 • Certified Vibration Practitioner Category 2 • Certified Vibration Specialist Category 3 • Certified Vibration Specialist Category 4	-

PROGRAM: MECHANICAL JOINT INTEGRITY (MJI)

IMM Certification Schemes and Courses	Technical Training Courses (Non-certification)
• Certified Technician in Mechanical Joint Integrity (MJI) for Flange Bolted Connection** • Certified Technician in Mechanical Joint Integrity (MJI) for Small Bore – Piping, Tubing and Valves** ** Accredited to ISO/IEC 17024	• Valve Operations, Maintenance and Inspection Including Flange Breaking

PROGRAM: THERMAL INSULATION

IMM Certification Schemes and Courses	Technical Training Courses (Non-certification)
• Certified Thermal Insulation Installer	• Introduction to Thermal Insulation

PROGRAM: WELDING

IMM Certification Schemes and Courses	Technical Training Courses (Non-certification)
• Certified Welding Inspector • IMM-JWES Certified Associate Welding Engineer • IMM-JWES Certified Welding Engineer • IMM-JWES Certified Senior Welding Engineer • Certified Thermit Welding Practitioner (Level 1) • Certified Thermit Welding Senior Practitioner (Level 2)	• Repair Welding of Pressure Equipment in Refineries & Chemical Plants • Welding & Joining Technology for Non-Welding Personnel • Steel Technology for Non-Technical Personnel

PROGRAM: TRAINER/EXAMINER

IMM Certification Schemes and Courses	Technical Training Courses (Non-certification)
• Certified Trainer/Examiner	-

MISCELLANEOUS MATERIALS SCIENCE AND TECHNOLOGY (NON-CERTIFICATION) COURSES

Technical Training Courses	Technical Training Courses
• Materials Selection & Corrosion • Metallurgical Failure Investigation • Basic Course on Operation of Mobile Air Compressor • Competent Mobile Industrial Compressor Operator • Competent Mobile Industrial Equipment Inspector • Practical Approach to Inspection and Maintenance of Steam Turbine	• Practical Approach to Precision Alignment Methods • Practical Approach to Precision Balancing Methods • Reciprocating Compressors: Operations, Maintenance, Inspection and Troubleshooting • Troubleshooting Techniques for Rotating Equipment

NOTE: A certificate of attendance will be issued to all participants of non-certification professional development training courses while candidates who pass the assessment/examination of IMM-certification schemes will be certified with the issue of IMM competency certificate and IMM certification ID card in addition to the certificate of attendance.

More information on training and certification is available on IMM's website at www.iomm.org.my.

For further enquiries:
Email : secretariat@iomm.org.my
Call/WhatsApp : +6018 911 3480

INSTITUTE OF MATERIALS, MALAYSIA
Suite 1006, Level 10, Block A, Kelana Centre Point,
No. 3, Jalan SS 7/19, Kelana Jaya, 47301 Petaling Jaya, Selangor

LIST OF AUTHORISED TRAINING BODIES (ATBs), AUTHORISED TESTING CENTRE (ATC) AND ASSOCIATE TRAINING PARTNER (ATP)

AUTHORISED TRAINING BODIES (ATBs)

(Offer IMM Certification Training Programs and Courses)

ATBs	Training Programs & Courses
• **Seacademy Sdn. Bhd.** (Sarawak) • **Topfields Borneo Sdn. Bhd.** (Sarawak) • **Sabah Skills & Technology Centre** (Sabah) • **SRC Global Resources Sdn. Bhd.** (Peninsular Malaysia) • **Advance Multiskills Training Centre Sdn. Bhd.** [Excludes courses marked with *] (Sarawak) • **Mui Lee Enterprise Sdn. Bhd.** [Excludes courses marked with *] (Sarawak)	**Coating** • Certified B1B2 Assistant Blaster & Painter Level 1 & Level 2 • Certified Protective Coating Technician (Blaster and/or Painter) Level 1 & Level 2 • Certified Blasting and Painting Supervisor • Certified Coating Inspector Level 1 & Level 2 • Certified Quality Control Technician* • Certified Thermal Spray Coating Applicator* • Basic Knowledge on Corrosion Protection for Technicians and Engineers* • Corrosion Control by Protective Paints* • Corrosion Control by Protective Coating*
• **Sabah Skills & Technology Center** (Sabah) • **SRC Global Resources Sdn. Bhd.** (Peninsular Malaysia) • **Mui Lee Enterprise Sdn. Bhd.** (Sarawak)	**Mechanical Joint Integrity** • Certified Mechanical Joint Integrity for Small-bore Piping, Tubing and Valves • Certified Mechanical Joint Integrity for Flange Bolted Connections
• **Prasarana Malaysia Berhad** (Malaysia)	**Thermit Welding** • Certified Thermit Welding Practitioner (Level 1) • Certified Thermit Welding Senior Practitioner (Level 2)

NOTE: The respective coverage area is indicated in brackets.

ASSOCIATE TRAINING PARTNER (ATP)

(Offers IMM Certification Training Programs and Courses)

Materials Technology Education Sdn. Bhd.
(Malaysia and Overseas)

IMM Training Programs & Courses

Coating

- Certified Protective Coating Technician (Blaster and/or Painter) Level 1 & Level 2
- Refresher Course for Certified Protective Coating Technician (Blaster and/or Painter) Level 1 & Level 2
- Certified B1B2 Assistant Blaster & Painter
- Certified Blasting and Painting Supervisor
- Certified Coating Inspector Level 1 & Level 2
- Refresher Course for Certified Coating Inspector Level 1 & Level 2
- Certified Coating Quality Control Technician
- Certified Thermal Spray Coating Applicator
- Basic Knowledge on Corrosion Protection for Technicians and Engineers
- Corrosion Control by Protective Paints
- Corrosion Control by Protective Coating

Corrosion

- Certified Corrosion Monitoring Practitioner Level 1
- Certified Corrosion Monitoring Practitioner Level 2
- Certified Corrosion Monitoring Practitioner Level 3
- Certified Cathodic Protection Practitioner Level 1
- Certified Cathodic Protection Practitioner Level 2
- Certified Cathodic Protection Practitioner Level 3
- Corrosion Control by Cathodic Protection

Thermal Insulation

- Introduction to Thermal Insulation
- Certified Thermal Insulation Installer

Vibration

- Certified Vibration Practitioner Category 1
- Certified Vibration Practitioner Category 2
- Certified Vibration Specialist Category 3
- Certified Vibration Specialist Category 4

Mechanical Joint Integrity

- Certified Mechanical Joint Integrity for Small-bore Piping, Tubing and Valves
- Certified Mechanical Joint Integrity for Flange Bolted Connections
- Valve Operations, Maintenance & Inspection Including Flange Breaking

Loss of Primary Containment

- Mechanical Joint Integrity
- Pressure Safety Valve
- Small Bore Tubing

Rotating Equipment

- Competent Mobile Industrial Compressor Operator
- Competent Mobile Industrial Equipment Inspector
- Inspection & Maintenance of Pumps
- Practical Approach to Inspection and Maintenance of Stream Turbine
- Practical Approach to Precision Alignment Methods
- Practical Approach to Precision Balancing Methods
- Reciprocating Compressors: Operations, Maintenance, Inspection & Troubleshooting
- Troubleshooting Techniques

IMM TRAINING & CERTIFICATION SCHEMES 2023/2024

Coating Fingerprinting

- Coating Fingerprint Foundation Course
- Certified Coating Fingerprint Quality Controller Level 1
- Certified Coating Quality Controller Level 2
- Refresher Course of Certified Coating Fingerprint Quality Controller Level 1/ Level 2

Train-the-Trainer

- Certified Trainer/Examiner

Welding

- Certified Welding Inspector
- Repair Welding of Pressure Equipment in Refineries & Chemical Plants
- Welding & Joining Technology for Non-Welding Personnel
- Steel Technology for Non-Technical Personnel

IMM-JWES Courses

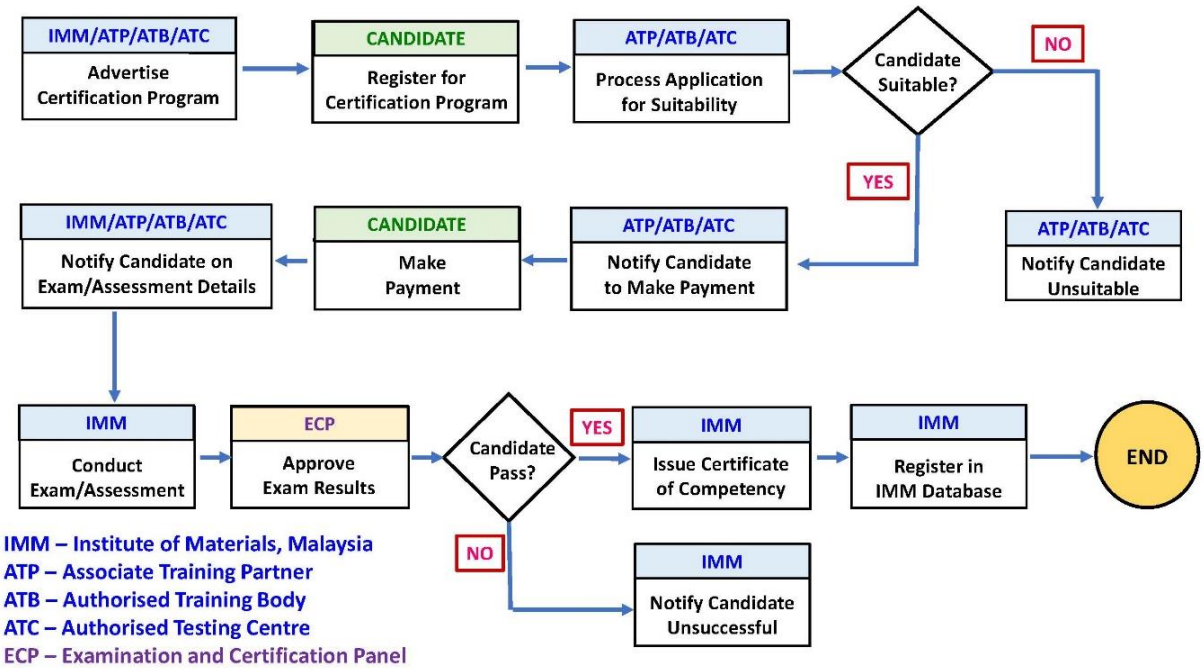
- Certified Associate Welding Engineer (AWE)
- Certified Welding Engineer (WE)
- Certified Senior Welding Engineer (SWE)

for Rotating Equipment

Other Materials Courses

- Materials Selection & Corrosion
- Metallurgical Failure Investigation
- Basic Course on Operation of Mobile Air Compressor

FLOW CHART FOR THE CERTIFICATION PROCESS



IMM – Institute of Materials, Malaysia
ATP – Associate Training Partner
ATB – Authorised Training Body
ATC – Authorised Testing Centre
ECP – Examination and Certification Panel

INTRODUCTION OF IMM'S CONTINUING PROFESSIONAL DEVELOPMENT (CPD) SCHEME FOR CERTIFIED PERSONNEL

With effect from 1st January 2023, all IMM Certified Personnel will be required to submit their yearly Continuing Professional Development (CPD) report to qualify for renewal of their certification upon expiry. The objective of CPD is to encourage Certified Personnel to regularly improve themselves and keep themselves updated with the latest developments in their industry. As such, IMM certified personnel must commence collecting CPD Points during the year 2021 to meet the required one-year CPD Points by January 2023.

CONTINUING PROFESSIONAL DEVELOPMENT (CPD) LOG TEMPLATE

(Supporting documents to be submitted wherever applicable)

Date or Period	Professional Development Activity Code & Description	Role	No. of Activity Hours	Weightage	No. of CPD Points

The CPD points calculation shall be based on the weightage factor shown below for each Activity Code.

Professional Development Activity Code	Professional Development Activity Scope	Weightage Factor
A	Attending Online or Physical Training Courses/Workshops	4
B	Online or Physical Course Trainer/Facilitator/Examiner/Conference Presenter	3
C	Attend Online or Physical Seminar/Conference/Webinar	2
D	Paper Author Main Author (max 30 hours/year) Co-author (max 10 hours/year)	2
E	Attend Online or Physical Committee Meeting	1
F	Fieldwork (max claimable 480 hours per year) **	0.1

** 1. Need to submit an endorsement from the superior/supervisor as evidence.
2. Calculated based on the assumption that the minimum project duration of 3 months and 8 hours per day for 20 days.
3. The minimum number of CPD Points accumulated for 5 consecutive years shall be 100 points.

The minimum number of CPD Points per year shall be **10 points**.
The minimum number of CPD Points per 5 year for re-certification shall be **100 points**.

COATING PROGRAMS

IMM Coating Certification Scheme

Certified B1B2 Assistant Blaster & Painter

Code: ABP *HRDF claimable*

This program is designed to fulfill the requirements for the Oil & Gas Industry and other industries with similar requirements to have certified Assistant (Helper) for Blasters & Painters. Candidates are certified after attending a 2 days classroom and training on the industrial fundamental of Blasting and Painting.

The assessment to obtain the certification is a written examination with multiple choice questions and a hands-on examination to verify that the candidates are ready to work as an Assistant Blaster or Painter.

Reference standards (reference used shall refer to the latest published document):

- ISO 8501-1: Preparation of Steel Substrates Before Application of Paints and Related Products - Visual Assessment of Surface Cleanliness - Part 1: Rust Grades and Preparation Grades of Uncoated Steel Substrates and of Steel Substrates After Overall Removal of Previous Coatings
- SSPC PA-1: Shop, Field, and Maintenance Coating of Metals

Who should apply

Existing helpers who are without any certification, other trades interested in Blasting and Painting and fresh entry into the oil & gas industry including school leavers are eligible to enroll for the program.

Objectives

For every topic covered, candidates shall be explained and briefed on the basic concepts, standard approaches and guidance commonly used and practiced by industries. This program is conducted both in a classroom and workshop consisting of 60% lecture and 40% hands-on exercises.

Examination topics

- Introduction to blasting & painting – Theory & practical (Blasting work/painting application)
- Surface preparation & blasting
- Blasting & painting equipment
- Paint & thinner
- Painting application methods
- Common painting system
- Coatings defects and remedy
- Quality inspection checks and tools
- Safety precaution in blasting & painting
- Safety in blasting and painting

The formal assessment includes the following:

- Familiar with safety aspects, rules and regulations in blasting & painting
- Basic knowledge of inspection tools usage and methods
- To be able to read and understand basic usage of technical data
- Understanding the methods of surface preparation, the difference between those methods and the properties of each method.
- Familiar with all drying types and drying factors.
- Able to understand the use of volume solid in paint materials
- Understanding of meaning of drying time, pot life and shelf life
- Knowing the type of application using different application equipment
- Clear understanding of defect, cause and remedy

Examination format

1. Written examination – 25 multiple choice questions – 1 hour
2. Practical assessment
   i. Set up of equipment's blasting & painting
   ii. Safety requirement check
   iii. Application methods blasting & painting

Examination duration

1 Day

Examination fee

As specified on the IMM website.

Candidate's criteria

Candidate should have

- Complete Primary School and
- Able to read and write in English or Bahasa Malaysia

Pre-requisite training

A candidate without experience is required to attend IMM approved/recognized training course which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

A candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification

Written examination – Achieve above 70% marks
Practical Assessment – Obtain Pass in the assessment (Pass/Fail)

Certificate awarded

IMM Certified B1B2 Assistant Blaster & Painter

Validity period of certificate

5 years

Re-sit of examination

A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification

6 months prior to the expiry of certification (at the end of the 5th year of certification), the candidate can apply for re-certification for another 5 years by providing proof to IMM that he/she has been employed in a related profession.

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), the candidate can continue to be certified for a further 5-year period by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

IMM Coating Certification Scheme

Certified Protective Coating Technician (Blaster and/or Painter) Level 1 & Level 2

Code: PCT *HRDF claimable*

This certification scheme will assess the candidate on capabilities and competency in abrasive blasting and protective coating painting skills, mainly in the oil & gas and heavy engineering industries. The candidate will be assessed both in the theory and practical aspects of Blasting and/or Painting which will determine their competency in accordance to the terms and conditions of the IMM Coating Certification Scheme. The candidate has a choice to sit for only the Blaster or Painter examinations or both.

Reference standards (reference used shall refer to the latest published document):

- ISO 8501-1: Preparation of Steel Substrates Before Application of Paints and Related Products - Visual Assessment of Surface Cleanliness - Part 1: Rust Grades and Preparation Grades of Uncoated Steel Substrates and of Steel Substrates After Overall Removal of Previous Coatings
- SSPC PA-1: Shop, Field, and Maintenance Coating of Metals

Who should apply

This certification scheme is suitable for new workers as well as those with experience in painting and/or blasting who want to be certified.

Objectives

To access the following knowledge and skills in:

- Specifying protective paint/coating system to a variety of substrates (Level 1 – Blaster; Level 1 – Painter; Level 2 – Multi-skill)
- The preparation of substrates prior to painting (Level 1 – Blaster; Level 2 – Multi-skill)
- The application of paint coatings (Level 1 – Painter; Level 2 – Multi-skill)
- The diagnosis and rectification of faults in paint coatings and communication in written form (Level 1 – Blaster; Level 1 – Painter; Level 2 – Multi-skill)

Examination topics

- Understanding corrosion types, factors affecting corrosion and effects of corrosion (Level 1 – Blaster; Level 1 – Painter; Level 2 – Multi-skill)
- Standards and paint materials data sheets (Level 1 – Blaster; Level 1 – Painter; Level 2 – Multi-skill)
- Composition and important types of paints (Level 1 – Blaster; Level 1 – Painter; Level 2 – Multi-skill)
- Surface preparation and related techniques (Level 1 – Blaster; Level 2 – Multi-skill)
- Application of paints (Level 1 – Painter; Level 2 – Multi-skill)
- Paint faults and coating defects (Level 1 – Blaster; Level 1 – Painter; Level 2 – Multi-skill)
- Quality assurance checks (Level 1 – Blaster; Level 1 – Painter; Level 2 – Multi-skill)
- Health, safety and environment – hazards, safety features and preventive measures (Level 1 – Blaster; Level 1 – Painter; Level 2 – Multi-skill)
- About coating fingerprinting (Level 1 – Blaster; Level 1 – Painter; Level 2 – Multi-skill)

The examination/assessment shall be preceded by a 2-hour pre-assessment briefing for Level 2 – Multi-skill OR
The examination/assessment shall be preceded by a 1-hour pre-assessment briefing for Level 1 – Blaster OR
The examination/assessment shall be preceded by a 1-hour pre-assessment briefing for Level 1 – Painter

Examination format

The examination comprises both theory and practical assessments, as follows:

- Theory

  IMM PCT Level 2 (Multi-skill)
  Paper 1 - Surface preparation, 23 multiple choice questions
  Paper 2 - Painting, 23 multiple choice questions

  IMM PCT Level 1 (Blaster or Painter)
  Paper 1 - Surface preparation, 23 multiple choice questions
  OR
  Paper 2 – Painting, 23 multiple choice questions

- Practical assessment

  IMM PCT Level 2 (Multi-skill)
  Part 1- Surface preparation
  - » Identify the main parts of a setup blasting equipment.
  - » Identify the safety features of blasting equipment and explain its function.
  - » To carry out blasting on a test panel to SA 2½ standard.

  Part 2 - Painting
  - » Identify the main parts of airless spray equipment.
  - » Identify and explain the safety features of an airless spray gun.
  - » Show how to check that the one or two-pack paint is the correct one with reference to the paint technical datasheets.
  - » Explain how the mixing of one or two-pack paint is to be carried out.
  - » To carry out spraying of paint on a test panel.

  IMM PCT Level 1 (Blaster or Painter)
  For Blaster only: Part 1- Surface preparation
  - » Identify the main parts of a setup blasting equipment.
  - » Identify the safety features of blasting equipment and explain its function.
  - » To carry out blasting on a test panel to SA 2½ standard.

  OR

  For Painter only: Part 2 – Painting
  - » Identify the main parts of airless spray equipment.
  - » Identify and explain the safety features of an airless spray gun.
  - » Show how to check that the one or two-pack paint is the correct one with reference to the paint technical datasheets.
  - » Explain how the mixing of one or two-pack paint is to be carried out.
  - » To carry out spraying of paint on a test panel.

Examination duration

Theory: 1 hour for both Parts 1 and 2 OR ½ hour for Part 1 or Part 2
Practical: 5 hours for both Parts 1 and 2 OR 2 ½ hours for Part 1 or Part 2

Examination fee

As specified on the IMM website.

Candidate's criteria

Candidate should have

- Minimum academic qualification - SPM or equivalent* OR
- 2 years of blasting and/or painting experience. Candidate with less than 2 years' experience must submit a testimonial from an employer or client to demonstrate their eligibility OR

- IMM Certified B1B2 Assistant Blaster and/or Painter with a minimum of 1 year experience in blasting and/or painting OR
- IMM Certified Blaster (L1) who has acquired coating skills and wishes to sit for the Painter assessment must submit a record (a testimonial from employer or client) prior to the examination showing proof of his/her experience over a twelve (12)-month period. The same procedure applies to IMM Certified Painter (L1) who wishes to sit for the Blaster assessment.

*Candidate who fulfills the minimum academic qualification but without blasting and/or painting experience is considered as a candidate without experience.

Pre-requisite training

A candidate without experience is required to attend IMM approved/recognized training course which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

A candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification

The candidate must be successful in each of the following:

- Minimum pass mark of 70% each of Part 1 and/or Part 2 in the theory examination.
- Minimum pass mark of 70% each of Part 1 and/or Part 2 in the practical assessment.

Certificate awarded

- **IMM Certified Protective Coating Technician Level 2 (Multi-skill)**
  [If the candidate is successful in all parts of the Blaster and Painter examination]
- **IMM Certified Protective Coating Technician Level 1 (Blaster)** OR
  IMM Certified Protective Coating Technician Level 1 (Painter)
  [If the candidate is successful in either Surface Preparation (Blaster) or Painter Assessment only]

Validity period of certificate

5 years

Re-sit of examination

A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification

6 months prior to the expiry of certification (at the end of the 5th year of certification), the candidate can apply for re-certification for another 5 years by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), the candidate can continue to be certified for a further 5-year period by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

IMM Coating Training Course

Certified Protective Coating Technician Refresher Course

Code: PCTR *HRDF claimable*

Protective Coating Technician Level 1 and/or Level 2 has a 5-year certification validity followed by another 5-year re-certification period. As a result, after 10 years, the certification needs to be renewed. Hence, the Refresher Course of IMM Certified Protective Coating Technician Level 1/Level 2 is designed to ensure that the certified technicians keep their knowledge up-to-date when applying for re-certification. This refresher course is designed to update blasters and painters on surface preparation and paint application.

Reference standards (reference used shall refer to the latest published document):

- ISO 8501-1: Preparation of Steel Substrates Before Application of Paints and Related Products - Visual Assessment of Surface Cleanliness - Part 1: Rust Grades and Preparation Grades of Uncoated Steel Substrates and of Steel Substrates After Overall Removal of Previous Coatings
- SSPC PA-1: Shop, Field, and Maintenance Coating of Metals

Who should apply

The program is suitable for certified blasters and/or painters whose certification is about to expire.

Objective

This program aims to serve as a useful refresher course for the experienced blasters and/or sprayers who want to be re-certified.

Course topics

- Understanding corrosion types, factors affecting corrosion and effects of corrosion (Level 1 – Blaster; Level 1 – Painter; Level 2 – Multi-skill)
- Standards and paint materials data sheets (Level 1 – Blaster; Level 1 – Painter; Level 2 – Multi-skill)
- Composition and important types of paints (Level 1 – Blaster; Level 1 – Painter; Level 2 – Multi-skill)
- Surface preparation and related techniques (Level 1 – Blaster; Level 2 – Multi-skill)
- Application of paints (Level 1 – Painter; Level 2 – Multi-skill)
- Paint faults and coating defects (Level 1 – Blaster; Level 1 – Painter; Level 2 – Multi-skill)
- Quality assurance checks (Level 1 – Blaster; Level 1 – Painter; Level 2 – Multi-skill)
- Health, safety and environment – hazards, safety features and preventive measures (Level 1 – Blaster; Level 1 – Painter; Level 2 – Multi-skill)
- About coating fingerprinting (Level 1 – Blaster; Level 1 – Painter; Level 2 – Multi-skill)

Course duration and mode

Half-day and may be conducted online.

Candidate's criteria

Candidate shall possess IMM Protective Coating Technician Level 1/ Level 2. While this course is not mandatory for those who are being re-certified for the first time, the certified individual is encouraged to attend.

However, this course is mandatory at the expiry of the re-certification period (at the end of the 10th year of certification), for all certified individuals as a pre-requisite for re-certification by IMM.

Certificate awarded

Certificate of attendance

Validity period of certificate

1 year

Information on re-certification

The candidate is eligible for re-certification within 1 year of attendance subject to the following conditions being met:

- providing proof to IMM that he/she has been employed in a related profession; and
- providing proof of attendance to the refresher course.

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the certification/re-certification period.

IMM Coating Certification Scheme

Certified Blasting and Painting Supervisor

Code: BPS *HRDF claimable*

There is an increasing demand for trained blasters and painters qualified to undertake the additional responsibilities of supervisor in blasting and painting. This course is to upgrade these blasters and painters who wish to gain advanced skills in surface preparation and paint application quality for the Blasting and Painting Supervisor

Reference standards (reference used shall refer to the latest published document):

- TBA

Who should apply

Blasting and Painting supervisor and; Blasters and Painters who wish to upgrade their knowledge and skills to another level of competency.

Objectives

To assess the following knowledge and skills:

- To understand how protective coating can effectively control corrosion
- To ensure surface preparation is properly carried out
- To ensure proper application of paints and awareness of coating defects
- Understanding the role of the Blasting and Painting Supervisor

Examination topics

- Fundamentals of protective coating for corrosion protection
- Surface preparation good practice control, coating handling and application
- Coating degradation, defects and failures
- Conversion and calculation
- Health, safety and environment issue
- Role and responsibilities
- Human relations

Examination format

Written examination – 25 multiple choice questions

Examination duration

1 hour

Examination fee

As specified on the IMM website.

Candidate's criteria

Candidate should have Certified Protective Coatings Technician Level 2 (Multi-Skill) with working experience

Pre-requisite training

A candidate without experience is required to attend IMM approved/recognized training course which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

A candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification

Pass in the written examination with a minimum 70%

Certificate awarded

IMM Certified Blasting and Painting Supervisor

Validity period of certificate

5 years

Re-sit of examination

A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification

6 months prior to the expiry of certification (at the end of the 5th year of certification), the candidate can apply for re-certification for another 5 years by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), the candidate can continue to be certified for a further 5-year period by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

IMM Coating Certification Scheme

Certified Coating Inspector Level 1

Code: CIL1 *HRDF claimable*

This program covers the technical and practical fundamentals of coating inspection work. The Coating Inspector Level 1 certification program is established to certify the competency of individuals equipped with the knowledge and skills in coating inspection.

Reference standards (reference used shall refer to the latest published document):

- ASTM D 1186-87: Non Destructive Measurement of Dry Film Thickness of Non Magnetic Coatings Applied to a Ferrous Base
- ASTM D 610: Evaluation Degree of Rusting on Painted Steel Surfaces
- ISO 8501-1: Preparation of Steel Substrates Before Application of Paint and Related Products – Visual Assessment of Surface Cleanliness
- ISO 8509: Tests for the Assessment of Surface Cleanliness
- MS 2736 (previously known as IMM FP01): Coating Fingerprinting Overall Procedures for Paints Using FTIR and Other Related Methods

Who should apply

The program is suitable for candidates with or without experience in industrial painting or inspection and will also be applicable to those who require knowledge of painting inspection such as painting inspector, painting supervisor, technicians, specifiers, and engineers who have been trained and/or have experience in coatings inspection and desire to be certified for career advancement.

Objectives

To assess the following knowledge and skills:

- Specify protective paint/coating system to a variety of substrates
- Supervise the preparation of substrates prior to painting
- Supervise the application of paint coatings
- Conduct inspections to satisfy clients/industry & government standards
- Diagnose and rectify faults in paint coatings and communicate in written form

Examination topics

- Introduction to corrosion
- Composition & manufacture of paints; and paint fingerprinting
- Types of paint and their use
- Surface preparation
- Application and storage of paint
- Paint faults and coating defects
- Test and measurement instrumentation
- Safety and health
- The role of the coating inspector
- Coating project specifications
- Codes and standards

Examination format

The examination consists of 110 multiple choice questions.
The questions are based on the above examination topics and include the assessment of understanding the practical aspects of the use of inspection tools and visual inspection.

Examination duration

2 hours 30 minutes

Examination fee
As specified on the IMM website.

Candidate's criteria
Candidate should have

- Pass in SPM with at least 2 years of relevant work experience OR
- Diploma or Degree in equivalent Science/Engineering related field OR
- IMM Certified Protective Coating Technician Level 2 (Multi-skill) qualification or equivalent; OR
- Attended relevant academic Coating Inspection Course dedicated to the IMM Coating Inspector Level 1 Certification with at least 3 months of practical experience in painting technology.

Pre-requisite training
A candidate without experience is required to attend IMM approved/recognized training course which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

A candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification
The candidate must pass the examination with a minimum total mark of 70%.

Certificate awarded
IMM Certified Coating Inspector Level 1

Validity period of certificate
5 years

Re-sit of examination
A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification
6 months prior to the expiry of certification (at the end of the 5th year of certification), the candidate can apply for re-certification for another 5 years by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), the candidate can continue to be certified for a further 5-year period by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

IMM Coating Certification Scheme

Certified Coating Inspector Level 2

Code: CIL2 *HRDF claimable*

IMM offers the Coating Inspector Level 2 certification program to broaden the technical knowledge and perform inspection analysis and monitoring in a structured and systematic inspection diagnostic.

Reference standards (reference used shall refer to the latest published document):

- ASTM D 1186-87: Non Destructive Measurement of Dry Film Thickness of Non Magnetic Coatings Applied to a Ferrous Base
- ASTM D 3359-87: Measuring Adhesion by Tape Test
- ASTM D 4541-95: Pull-Off Strength of Coatings by Portable Adhesion Testers
- ASTM D 5162-91: Discontinuity (holiday) Testing of Non Conductive Protective Coating on Metallic Substrates
- ASTM D 610: Evaluation Degree of Rusting on Painted Steel Surfaces
- ASTM D 6677: Standard Test Method for Evaluating Adhesion by Knife
- ISO 8501-1: Preparation of Steel Substrates Before Application of Paint and Related Products – Visual Assessment of Surface Cleanliness
- ISO 8509: Tests for the Assessment of Surface Cleanliness
- MS 2736 (previously known as IMM FP01): Coating Fingerprinting Overall Procedures for Paints Using FTIR and Other Related Methods

Who should apply

The program is suitable for candidate who has already been certified as Coating Inspector Level 1 or others with equivalent qualification.

Objectives

To access the following knowledge and skills:

- Specify protective paint/coating system to a variety of substrates
- Supervise the preparation of substrates prior to painting
- Supervise the application of paint coatings
- Conduct inspections to satisfy clients/industry & government standards
- Diagnose and rectify faults in paint coatings and communicate in written form

Examination topics

- Corrosion theory and terminology
- Advance surface preparation
- Advance paint faults and coating defects test
- Measuring instrument/inspection – Diagnose failure
- Composition & manufacture of paints
- Application & storage of paints
- The role of a coating inspector/inspection test plan
- Painting specification
- Calculation/mathematics
- Safety and health

Examination format

The examination consists of 3 sections to be conducted over 1 full day.

- Paper 1 consists of 10 multiple choice questions (1 mark each) and 6 subjective questions (10 marks each).
- Paper 2 consists of 4 practical questions (10 marks each)
- Paper 3 is the oral examination (25 marks) whereby each candidate will be interviewed individually.

Examination duration
Paper 1 - 3 hours
Paper 2 - 2 hours
Paper 3 - 30 minutes
The oral examination may be conducted in parallel with the practical session.

Examination fee
As specified on the IMM website.

Candidate's criteria
Candidate should have

- Minimum six (6) months of documented working experience after obtaining IMM Coating Inspector Level 1 certification or equivalent qualifications OR
- Attended relevant academic Coating Inspection Course dedicated to the IMM Coating Inspector Level 1 Certification with at least 6 months of practical field experience in coating inspection.

Pre-requisite training
A candidate is encouraged to attend the 1-day IMM approved/recognized training course which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

Criteria for certification
The candidate must pass the examination with a minimum mark of 70% for each paper.

Certificate awarded
IMM Certified Coating Inspector Level 2

Validity period of certificate
5 years

Re-sit of examination
A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification
6 months prior to the expiry of certification (at the end of the 5th year of certification), the candidate can apply for re-certification for another 5 years by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), the candidate can continue to be certified for a further 5-year period by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

IMM Coating Training Course

Certified Coating Inspector Refresher Course

Code: CIR *HRDF claimable*

Coating Inspector Level 1 or Level 2 has a 5-year certification validity followed by another 5-year re-certification period. As a result, after 10 years, the certification needs to be renewed. Hence, the Refresher Course of IMM Certified Coating Inspector is designed to ensure that the coating inspectors keep their knowledge up-to-date. While many of the inspectors will carry out numerous important inspections in their work, it is very likely they were not re-trained for all the topics covered in Coating Inspector Level 1 or Level 2 course.

Reference standards (reference used shall refer to the latest published document):

- ASTM D 1186-87: Non Destructive Measurement of Dry Film Thickness of Non Magnetic Coatings Applied to a Ferrous Base
- ASTM D 3359-87: Measuring Adhesion by Tape Test
- ASTM D 4541-95: Pull-Off Strength of Coatings by Portable Adhesion Testers
- ASTM D 5162-91: Discontinuity (holiday) Testing of Non Conductive Protective Coating on Metallic Substrates
- ASTM D 610: Evaluation Degree of Rusting on Painted Steel Surfaces
- ASTM D 6677: Standard Test Method for Evaluating Adhesion by Knife
- ISO 8501-1: Preparation of Steel Substrates Before Application of Paint and Related Products – Visual Assessment of Surface Cleanliness
- ISO 8509: Tests for the Assessment of Surface Cleanliness
- MS 2736 (previously known as IMM FP01): Coating Fingerprinting Overall Procedures for Paints Using FTIR and Other Related Methods

Who should apply

For IMM Certified Coating Inspectors Level 1 or Level 2 who are applying for re-certification.

Objectives

The objective of this refresher course is to review and revise the topics and to provide up-to-date knowledge and skills required in conducting quality inspections on coatings.

Course topics

- Introduction to corrosion
- Components of paints and paint manufacturing
- Important types of paints and their use
- Surface preparation
- Application and storage of paint
- Paint faults and coating defects
- Tests and measurement instrumentation
- Safety and health
- The Coating Inspector
- Coating project specifications
- New paint technology
- Coating fingerprinting

Course duration

1 day

Candidate's criteria

Candidate shall possess IMM Coating Inspector Level 1 or Level 2.
While this course is not mandatory for those who are being re-certified for the first time, the certified individual is encouraged to attend.
However, this course is mandatory at the expiry of the re-certification period (at the end of the 10th year of certification), for all certified individuals as a pre-requisite for re-certification by IMM.

Certificate awarded

Certificate of attendance

Validity period of certificate

1 year

Information on re-certification

The candidate is eligible for re-certification within 1 year of attendance subject to the following conditions being met:

- providing proof to IMM that he/she has been employed in a related profession; and
- providing proof of attendance to the refresher course.

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the certification/re-certification period.

Certified Coating Quality Control Technician

Code: CQCT *HRDF claimable*

IMM Certified Coating Quality Control Technician (Quality Control and Quality Assurance) course is mainly targeting candidates on the technician level before they can proceed to the inspector level. Graduate of the program will acquire a Certificate of IMM Certified Coating Quality Control Technician issued by IMM.

This is an intensive training program of basic functions of quality control of surface preparation, coating types & failure and inspection knowledge and criteria.

Reference standards (reference used shall refer to the latest published document):

- TBA

Who should apply

Blasting and Painting Technician and Supervisor who wish to upgrade their knowledge and skills to another level of competency.

Objectives

To assess the following knowledge and skills:

- Surface knowledge on QA QC related to surface preparation, coating types & failure and inspection knowledge and criteria.
- To cater the needs for getting broader knowledge in the inspection.

Examination topics

- QC vs QA
- Monitoring environmental conditional
- Reference standards and codes
- Pre-cleaning inspection and inspection (tools, method and sequence)
- Surface preparation
- Coating materials and handling practices
- Application procedure
- Materials traceability
- Repairs and remedial coating work
- Documentation and compiling accurate reports
- Recommendation

Examination format

Written examination – 25 multiple choice questions

Examination duration

1 hour 30 minutes

Examination fee

As specified on the IMM website.

Candidate's criteria

No previous experience required.

Pre-requisite training

A candidate without experience is required to attend IMM approved/recognized training course which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

A candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification

Pass in the written paper with a minimum 70%

Certificate awarded

IMM Certified Coating Quality Control Technician

Validity period of certificate

5 years

Re-sit of examination

A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification

6 months prior to the expiry of certification (at the end of the 5th year of certification), the candidate can apply for re-certification for another 5 years by providing proof to IMM that he/she has been employed in a related profession.

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), the candidate can continue to be certified for a further 5-year period by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

IMM Coating Certification Scheme

Certified Thermal Spray Coating Applicator

Code: TSCA *HRDF claimable*

The use of protective coatings for corrosion prevention has grown rapidly during the past decade and thermal spray coating (or "metallizing") represents the significant portion of the growth.

Thermal spray coating (TSC) has been used for steel structures for many years in various industrial applications for corrosion control, wear control, metal body repair, and hard surfacing. In the corrosion industry, TSC has proved performance of over 15 years in harsh corrosive environments. As for engineering application, TSC systems such as metallic coating and ceramic coating are widely used in reclaiming and protecting components in the power, oil & gas, marine and general industries. TSC systems include flame-spray, arc-spray, plasma spray, high-velocity oxygen fuel spray etc. To ensure high quality, efficient and cost-effective implementation of thermal spray coatings works, skilled applicators are quintessential.

Reference standards (reference used shall refer to the latest published document):

- ISO 14918: Thermal Spraying - Qualification Testing of Thermal Sprayers
- NACE NO.12/AWS C2.23M/SSPC CS-23: Standard Practice - Specification for the Application of Thermal Spray Coatings (Metallizing) of Aluminum, Zinc, and their Alloys and Composites for the Corrosion Protection of Steel

Who should apply

This program is for those in the field of coating who desire to understand and learn the increasing use of thermal spray coating in the fight against corrosion. It is recommended for

- Certified IMM Protective Coating Technician who wish to upskill to become thermal sprayers.
- Those with any other recognised coating certification such as AMPP or equivalent.
- Experienced thermal sprayer who does not have proper skills certification.

Objectives

To assess the following knowledge and skills:

- Understanding the physical principles of thermal spraying
- Knowing the features and benefits of the different thermal spray processes
- Identifying applicable testing methods and currently accepted industrial practices used for quality control of coatings.
- Able to judge the influence of the operating parameters on the coating properties

Examination topics

- Fundamentals of thermal spray coatings
- Surface preparation
- Thermal spray coating application methods
- Common thermal spray coating defects and remedy
- Quality inspection checks and tools for thermal spray coating
- Health, safety and environment precautions

A 2-hour pre-assessment briefing will be conducted prior to the theory examination.

Examination format

The candidate will be assessed over two days on both practical and knowledge skills via a hands-on practical assessment and a written examination.

- Day 1 and Day 2: Practical assessment
- Day 2: Written examination – consisting of 40 multiple choice questions

For the practical assessment, each candidate will be orally and physically tested on knowledge of equipment and requirements of applying thermal spray coatings on the following topics:

- Personal protective equipment
- Thermal spray coatings specifications knowledge
- Environmental conditions check
- Steel surface conditions check
- Surrounding protection
- Air compressor set-up
- Spray equipment set-up
- Spray gun knowledge
- Thermal spray coatings application process
- Quality control test results

Examination duration

Day 1: Practical assessment
Day 2: Pre-assessment briefing, theory examination and conduct adhesion tests

Examination fee

As specified on the IMM website.

Candidate's criteria

Candidate should have

- Minimum academic qualification - SPM or equivalent* OR
- Knowledge and experience in application of thermal spray coatings with having performed at least one thermal spray coating job within the last one year OR
- Certified IMM Protective Coating Technician Level 2 (Multi-skill) qualification or equivalent*; OR
- Knowledge and relevant working experience in 3G welding* OR
- Attended relevant academic Thermal Spray Coatings Course dedicated to the IMM Thermal Spray Coating Applicator Certification with at least 3 months of practical experience in painting technology.

*Candidate fulfills the minimum academic qualification or Certified IMM Protective Coating Technician Level 2 (Multi-skill) qualification or relevant working experience in 3G welding but without experience in application of thermal spray coatings is considered as candidate without experience.

Pre-requisite training

A candidate without experience is required to attend IMM approved/recognized training course which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

A candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification

Pass in both theory paper and practical assessment with a minimum 70% for each assessment.

Certificate awarded

IMM Certified Thermal Spray Coating Applicator

Validity period of certificate

5 years

Re-sit of examination

A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification

6 months prior to the expiry of certification (at the end of the 5th year of certification), the candidate can apply for re-certification for another 5 years by providing proof to IMM that he/she has been employed in a related profession.

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), the candidate can continue to be certified for a further 5-year period by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

IMM Coating Training Course

Basic Knowledge on Corrosion Protection for Technicians and Engineers Course

Code: CPTE *HRDF claimable*

Today, there is still a lack of knowledge on corrosion protection for many technicians and engineers. The industries need to address this problem urgently to ensure that all facilities to be built will be free from serious corrosion problem in the future and all existing facilities are maintained properly.

Reference standards (reference used shall refer to the latest published document):

- TBA

Who should apply

Technicians and engineers

Objectives

This one-day training aims to provide participants with the much-needed basic knowledge and skills in corrosion protection:

1. What corrosion is and the seriousness of corrosion problem.
2. Common mistakes made by designers that will aggravate corrosion problem.
3. The importance of good QA/QC (Role of coating inspector).
4. Corrosion protection by painting.

Course topics

1. Introduction to corrosion.
2. How serious is the corrosion problem?
3. Some common mistakes made by the designer or engineer who prepared the technical drawings/specifications.
4. Poor QA/QC lead to early corrosion of newly built facilities.
5. Philosophy of maintenance.
6. How long can facilities or structures last with good maintenance?
7. Methods of corrosion protection.
8. Do galvanised & stainless-steel surface need to be protected against corrosion?
9. Corrosion protection by painting:
    - What is the paint?
    - The importance of surface preparation.
    - Painting specification and coating selection.
    - Application and storage of paints.
    - Paint faults and coating defects.
    - Test and measuring instruments to be used for QA/QC.
    - Safety and health and the role of a coating inspector.

Course duration

1 day

Pre-requisite(s)

No previous working experience is required.

Certificate awarded

Certificate of attendance

IMM Coating Training Course

Corrosion Control by Protective Coating Course

Code: CCPC *HRDF claimable*

Today, there is still a lack of knowledge on corrosion protection for many technicians and engineers. The industries need to address this problem urgently to ensure that all facilities to be built will be free from serious corrosion problem in the future and all existing facilities are maintained properly.

Reference standards (reference used shall refer to the latest published document):

- TBA

Who should apply

Technicians and engineers

Objectives

This three-day training aims to provide participants with the much-needed basic knowledge and skills in corrosion protection:

1. What corrosion is and seriousness of corrosion problem.
2. Common mistakes made by designers that will aggravate corrosion problem.
3. The importance of good QA/QC (Role of coating inspector).
4. Corrosion protection by painting.

Course topics

1. Introduction to corrosion.
2. How serious is the corrosion problem?
3. Some common mistakes made by designer or engineer who prepared the technical drawings/specifications.
4. Poor QA/QC leads to early corrosion of newly built facilities.
5. Philosophy of maintenance.
6. How long can facilities or structures last with good maintenance?
7. Do galvanised & stainless-steel surface need to be protected against corrosion.
8. Methods of corrosion protection.
9. Corrosion protection by painting:
    - What is paint? What is coating?
    - The importance of surface preparation.
    - Paint specification and coating selection.
    - Application and storage of paint.
    - Paint faults and coating defects
    - Test and measuring instruments to be used for QA/QC
    - Safety and health and the role of a Coating Inspector
10. Practical on surface preparation using hand tools, power tools and grit blasting to corroded spots and on mixing of paint and painting of prepared surface of corroded spots and doing stripe coating

Course duration

3 days

Pre-requisite(s)

No previous working experience is required.

Certificate awarded

Certificate of attendance

IMM Coating Training Course

Corrosion Control by Protective Paints Course

Code: CCPP *HRDF claimable*

This two-day course is aimed to provide course participants a firm foundation of the fundamentals of corrosion and how coating when properly applied will ensure efficient and cost-effective protection.

Reference standards (reference used shall refer to the latest published document):

- TBA

Who should apply

Managers, engineers, contractors, site supervisor, architects, and technical paints consultants

Objectives

- Understand what corrosion and protective coating are
- Accurately determine the extent of corrosion problems
- Evaluate various protective coatings
- Choose the most cost-effective coating system for optimum protection

Course topics

- Corrosion fundamentals
- Paint & protective coating
- Surface preparation
- Application of paints
- Coating failure, repair and maintenance

Course duration

2 days

Pre-requisite(s)

No previous working experience is required.

Certificate awarded

Certificate of attendance

COATING FINGERPRINT PROGRAMS

IMM Coating Fingerprint Training Course

Coating Fingerprint Foundation Course

Code: FPF *HRDF claimable*

The paint & coatings and oil & gas industries have initiated the requirement for a polymeric Coating Fingerprint Certificate (similar to a Mill Certificate for metals) to improve quality assurance and quality control. The authentication Fourier Transform Infra-Red (FTIR) analysis has been selected as the appropriate method to provide the requirement, in addition to other physical tests which are regularly conducted by the paint & coating manufacturers, for fingerprinting.

Reference standards (reference used shall refer to the latest published document):

- MS 2736 (previously known as IMM FP01), Coating Fingerprinting Overall Procedures for Paints Using FTIR and Other Related Methods
- IMM FP02, Paint Raw Material Overall Procedures Using FTIR and Other Related Methods
- IMM FP03, Dried Coating Fingerprinting Overall Procedures Using FTIR and Other Related Methods

Who should apply

Anyone interested in the topic and their applications including graduates with bachelor degree through PhD level, researchers, chemists, engineers, physicists, or technicians from academia and industry who work in or are beginning to work in the field. Managers in this industry will greatly benefit from this overview lecture course.

Objectives

This course will equip the trainee with the knowledge and skills in FTIR analysis for authentication of coating fingerprinting, equipment, mechanics of the FTIR testing, appreciation of the strengths and limitations of FTIR method, interpretation & analysis of FTIR results, and exposure to FTIR sample analysis in the (virtual) classroom.

Course topics

- Premature coating failure
- Coating fingerprint certification
- Basic components of paints
- Infrared spectroscopy
- Sampling standards of materials
- FTIR analysis standard for protective coatings
- Basic introduction to FTIR hardware
- Basic application of FTIR software
- Generation of Reference FTIR spectrum
- Estimation of degree of similarity for samples
- Normal sensitivity compare vs high sensitivity compare functions
- Setting the threshold to reject or accept samples
- Macros basic workflow for FTIR software

Course duration

1 day

Examination format

Examination (quiz) of 20 multiple choice questions

Examination duration

20 minutes or less

Candidate's criteria

No previous working experience required
Minimum academic qualification: SPM, SKM, SVM or equivalent

Certificate awarded

Certificate of attendance

Validity period of certificate

5 years for eligibility to sit for IMM Certified Coating Fingerprint Quality Controller Level 1 certification examination

IMM Coating Fingerprint Certification Scheme

Certified Coating Fingerprint Quality Controller Level 1

Code: FP1 *HRDF claimable*

The oil & gas and petrochemical industries have implemented the requirements for Coating Fingerprint Certificate (equivalent to the Mill Certificate for Metals) for all the protective coatings and paints supplied to the industry operators. As such, paint manufacturers will be required to engage an IMM Certified Coating Fingerprint Quality Controller Level 2 (FP2) to conduct FTIR analysis and associated physical tests [*i.e.* the quality control tests (QC)] on paints to produce a Coating Fingerprint Certificate that ensures the batch-to-batch consistency of the paints supplied. An FP2 or higher will be engaged by the (sub-)contractors/auditors/owners to review the Coating Fingerprint Certificate submitted to the job site. Whereas, an IMM Certified Coating Fingerprint Quality Controller Level 1 (FP1) can be employed to carry out on-site authentication FTIR analysis on paints using mobile or handheld equipment for quality assurance (QA) purpose or an FP2 or higher to perform QA FTIR analysis in a 3rd-party laboratory.

NOTE:
Code: FP1 – inspector level
Code: FP2 – laboratory analyst and auditor level
Code: FP3 – professional technologist level (to be launched)

Reference standards (reference used shall refer to the latest published document):

- MS 2736 (previously known as IMM FP01), Coating Fingerprinting Overall Procedures for Paints Using FTIR and Other Related Methods
- IMM FP02, Paint Raw Material Overall Procedures Using FTIR and Other Related Methods
- IMM FP03, Dried Coating Fingerprinting Overall Procedures Using FTIR and Other Related Methods

Who should apply

This certification program (FP1) is for those who will be involved in conducting quality control and quality assurance on paints and coating systems such as quality assurance managers and supervisors for coating contractors, representatives of coating suppliers, end-client project supervisors and QA/QC personnel, analysts at testing laboratories, coating inspectors, paint factory chemists and assistant chemists, paint QC technicians *etc*. It will also be of interest to estimators, steel fabricators and structural engineers involved in designing or maintaining steel structures.

Objectives

The objective of this certification scheme (FP1 or higher) is to assess and certify personnel on the knowledge and skills required in conducting quality control and quality assurance on coating/paint systems. As a result, the Coating fingerprint (scheduled / random) monitoring report issued by the persons certified as IMM Coating Fingerprint Quality Controller Level 1 (FP1) will be recognized by both client and contractor. The coating Fingerprint Certificate shall be issued by the persons certified as IMM Coating Fingerprint Quality Controller Level 2 (FP2) or higher.

Examination topics

- Why do we need to fingerprint paints?
- IMM Coating Fingerprint Certification Scheme and the execution of Coating Fingerprint Certificate by coating manufacturer/supplier, 3rd-party testing laboratory, fabricator / (sub-)contractor, external auditor and end-user
- Preparation, review and validation of the Coating Fingerprint Certificate and the compulsory & optional appendices
- Basic components of protective coatings (*e.g.* solvent, resin, filler, pigments, additives *etc*.) for epoxy coatings, inorganic zinc coatings, organic-zinc coatings, polyurethane coatings *etc*.)

- Related physical analyses associated with protective coatings (*e.g.* viscosity, density, color code, non-volatile matter, weight solids for organic/inorganic-zinc coatings *etc*.)
- In-house and on-site / audit sampling standards for paints
- Standards for examine and prepare each sample for testing that can be adopted
- IMM Standards using the FTIR method for coating fingerprinting
- Basic introduction to FTIR hardware: desktop, mobile and handheld
- Attenuated total reflectance (ATR) principle
- Basic application of a FTIR software: desktop, mobile and handheld
- Generation of Reference FTIR spectrum before the qualification for new maintenance painting system and products for offshore application
- Estimation of degree of similarity for in-house/on-site sample FTIR spectrum with Reference FTIR spectrum
- Analyzing FTIR spectra using high sensitivity compare function of FTIR software for 2-pack epoxy paints

Examination format
Examination consists of 110 multiple choice questions

Examination duration
100 min or less

Examination fee
As specified on the IMM website.

Candidate's criteria
Candidate should have
- Attended the IMM Coating Fingerprint Foundation Course AND with a minimum 6-month related working experience* OR
- Certified as IMM Coating Inspector Level 2 or equivalent [*e.g.* Society for Protective Coatings (SSPC) Coating Inspector Level 2, NACE International Coating Inspector Level 2, the British Gas Approved Scheme (BGAS) Coating Inspector Level 2, the Norwegian Professional Council for Education and Certification of Inspectors for Surface Treatment (FROSIO) Coating Inspector Level 2, Institute of Corrosion (ICorr) Coating Inspector Level 2, Association for Certification and Qualification of Anticorrosive Paintwork (ACQPA) Coating Inspector Level 2 etc.]

*The related work experience can be before or after the IMM Coating Fingerprint Foundation Course.

Pre-requisite training
A candidate without experience is required to attend IMM approved/recognized training course which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

A candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification
The candidate must pass the examination with a minimum total mark of 70%.

Certificate awarded

IMM Certified Coating Fingerprint Quality Controller Level 1 (FP1)

Candidate (FP1) will also be authorized to use the Coating Fingerprint Quality Controller Rubber Stamp (Figure 1) to issue an on-site Coating fingerprint (scheduled/random) monitoring report and; to receive & check the Coating Fingerprint Certificate.

Whereas, candidate (FP2 or higher) will also be authorized to use the Coating Fingerprint Quality Controller Rubber Stamp (Figure 1) in all documents and reports, including the Coating Fingerprint Certificate, in relation to coating fingerprinting to any person, company or authority in Malaysia.

Figure 1

Validity period of certificate

5 years

Re-sit of examination

A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification

6 months prior to the expiry of certification (at the end of the 5th year of certification), the candidate can apply for re-certification for another 5 years by providing proof to IMM that he/she has been employed in a related profession.

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), the candidate can continue to be certified for a further 5-year period by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

IMM Coating Fingerprint Certification Scheme

Certified Coating Fingerprint Quality Controller Level 2

Code: FP2 *HRDF claimable*

The oil & gas and petrochemical industries have implemented the requirements for Coating Fingerprint Certificate (equivalent to the Mill Certificate for Metals) for all the protective coatings and paints supplied to the industry operators. As such, IMM Certified Coating Fingerprint Quality Controllers Level 2 (FP2) will be engaged by paint manufacturers, 3rd-party laboratories, (sub-)contractors, auditors and owners to prepare or to review Coating Fingerprint Certificate for quality assurance and quality control (QA & QC) purpose. This certification program (FP2) places special emphasis on the generation of a good Reference spectrum for in-house paint manufacturers and 3rd-party laboratories, which is very crucial for subsequent estimation of degree of similarity for batch-to-batch paint consistency. Besides, good practices of on-site inspection using mobile or handheld equipment, review of Coating Fingerprint Certificate and cross-checking of raw FTIR spectrum will be highlighted.

NOTE:
Code: FP1 – inspector level
Code: FP2 – laboratory analyst and auditor level
Code: FP3 – professional technologist level (to be launched)

Reference standards (reference used shall refer to the latest published document):

- MS 2736 (previously known as IMM FP01), Coating Fingerprinting Overall Procedures for Paints Using FTIR and Other Related Methods
- IMM FP02, Paint Raw Material Overall Procedures Using FTIR and Other Related Methods
- IMM FP03, Dried Coating Fingerprinting Overall Procedures Using FTIR and Other Related Methods

Who should apply

This certification program (FP2) is for those who will be involved in conducting quality assurance or quality control (QA/QC) on paints and coating systems, especially for analysts at testing laboratories (in-house and 3rd-party) as well as for internal and external auditors.

Objectives

The objective of this certification program (FP2) is to assess and certify IMM Certified Coating Fingerprint Quality Controllers Level 1 (FP1) on upgraded knowledge and skills in quality control and quality assurance on paints and coating systems. In addition, the persons certified as IMM Coating Fingerprint Quality Controller Level 2 (FP2) or higher shall issue the Coating Fingerprint Certificate. Whereas, IMM Coating Fingerprint Quality Controller Level 1 (FP1) should only issue a Coating fingerprint (scheduled / random) monitoring report for on-site analysis.

Examination topics

- IMM FTIR Analysis Standards, qualification and fingerprint certificates of raw materials, paints and dried coatings
- Sampling precautions in relation to FTIR fingerprinting for paints
- FTIR fingerprinting of raw materials for epoxy paint manufacturing
- Good practice for generation of Reference FTIR for Coating Fingerprint Certificate
- Good practice for sample storage, collection and analysis
- On-site inspection using mobile or handheld spectrophotometer
- Audit trail of a FTIR spectrum using FTIR software

Examination format

Examination consists of 60 multiple choice questions

Examination duration
60 min or less

Examination fee
As specified on the IMM website.

Candidate's criteria
Candidate should have

- Valid IMM Certified Coating Fingerprint Quality Controller Level 1 certificate or equivalent with at least 6-month working experience on coating fingerprinting.

Pre-requisite training
A candidate without experience is required to attend IMM approved/recognized training course which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

A candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification
The candidate must pass the examination with a minimum total mark of 70%.

Certificate awarded
IMM Certified Coating Fingerprint Quality Controller Level 2 (FP2)

Candidate (FP2 or higher) will also be authorized to use the Coating Fingerprint Quality Controller Rubber Stamp (Figure 1) in all documents and reports, including the Coating Fingerprint Certificate, in relation to coating fingerprinting to any person, company or authority in Malaysia.

Figure 1

Validity period of certificate
5 years

Re-sit of examination
A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification
6 months prior to the expiry of certification (at the end of the 5th year of certification), the candidate can apply for re-certification for another 5 years by providing proof to IMM that he/she has been employed in a related profession.

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), the candidate can continue to be certified for a further 5-year period by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

IMM Coating Fingerprint Certification Scheme

Certified Coating Fingerprint Trainer/Examiner

Code: FPT *HRDF claimable*

This is a certification program for those who would like to be involved in the training and examination of Coating Fingerprint Quality Controller Level 1 (FP1) or Level 2 (FP2) or Professional Level 3 (FP3) for related IMM training/certification program(s). Topics include presentation skills, communication skills, and understanding of the subject to be presented. The candidates will be assessed on handling quality assurance & quality control aspects; and conduct evaluation of competency examination of the coating fingerprint tasks since the Coating Fingerprint Quality Controllers or Professionals are engaged by paint manufacturers, 3rd-party laboratory, (sub-)contractors, auditors and owner for conformity analysis and assurance of batch-to-batch paint/coating consistency.

Reference standards (reference used shall refer to the latest published document):

- MS 2736 (previously known as IMM FP01), Coating Fingerprinting Overall Procedures for Paints Using FTIR and Other Related Methods
- IMM FP02, Paint Raw Material Overall Procedures Using FTIR and Other Related Methods
- IMM FP03, Dried Coating Fingerprinting Overall Procedures Using FTIR and Other Related Methods

Who should apply

This certification program is for IMM Certified Coating Fingerprint Quality Controller Level 2 (FP2) or higher who are interested in training and assessing candidates for the following course(s) or certification program(s):

- IMM Coating Fingerprint Foundation Course; or
- IMM Certified Coating Fingerprint Quality Controller Level 1; or
- IMM Certified Coating Fingerprint Quality Controller Level 2; or
- IMM Certified Coating Fingerprint Professional Level 3 (to be launched)

Objectives

The objective of this certification program is to assess and certify potential trainers/examiners on the knowledge and skills required in training and assessing candidates on coating fingerprinting at different competency levels.

Examination topics

- Role play as a trainer for lecture:
  - » non-verbal skills
  - » verbal and language fluency skills
  - » presentation content (knowledge and organization)
  - » handling Q&A session
- Practical demonstration:
  - » non-verbal skills
  - » verbal skills
  - » instrumentation (knowledge and skills)
  - » handling Q&A session.
- Role play as an examiner for assessing trainees:
  - » non-verbal skills
  - » verbal and language fluency skills
  - » assessor competency (assessment development and feedback)
  - » handling Q&A session.
- Interview:
  - » knowledge & understanding
  - » application to practice

» interpersonal skills

Examination format

The candidates will be assessed and evaluated by the assessor on their techniques in coaching/lecturing/assessment, handling practical demonstration and Q&A session on related to course of their choice and expertise from the following list:

- IMM Coating Fingerprint Foundation Course;
- IMM Certified Coating Fingerprint Quality Controller Level 1; or
- IMM Certified Coating Fingerprint Quality Controller Level 2; or
- IMM Certified Coating Fingerprint Professional Level 3.

The candidate will then be interviewed on their understanding of the topics taught/assessed in the course/certification program selected.

Examination duration

Examination will be based on:

- 30 – 45 min: Role-play as a trainer for lecture and handling Q&A session – 25%
- 30 – 45 min: Practical demonstration (can be in the form of the physical classroom, mixed reality, simulation, video *etc*) – 25%
- 30 – 45 min: Role-play as an examiner for practical and theoretical evaluation using the developed rubrics/assessment materials (can be in the form of physical examination hall, mixed reality, simulation, video *etc*) – 25%
- 10 – 15 min: Interview – 25%

Examination fee

As specified on the IMM website.

Candidate's criteria

Candidate should have

- Valid IMM Certified Coating Fingerprint Quality Controller Level 2 or equivalent at the same level or higher level than the certification level of the certification program with at least 5-year working experience on coating fingerprinting or in relevant field.

Pre-requisite training

A candidate without experience is required to attend IMM approved/recognized training course which prepares and provides comprehensive guidance and practices aligned to the topics covered in the examination.

A candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification

The candidate must pass the examination with a minimum mark of 70% for each of the components – lecture & examination; practical demonstration and interview.

Certificate awarded

IMM Certified Trainer/Examiner for

- IMM Coating Fingerprint Foundation Course; or
- IMM Certified Coating Fingerprint Quality Controller Level 1; or
- IMM Certified Coating Fingerprint Quality Controller Level 2; or
- IMM Certified Coating Fingerprint Professional Level 3

NOTE:
1. The candidate who passes the examination of a specific level can be appointed as trainer/examiner of that specific level and lower level(s).

Validity period of certificate

5 years

Re-sit of examination

A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification

6 months prior to the expiry of certification (at the end of the 5th year of certification), the candidate can apply for re-certification for another 5 years by providing proof to IMM that he/she has been employed in a related profession.

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), the candidate can continue to be certified for a further 5-year period by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

IMM Coating Fingerprint Training Course

Certified Coating Fingerprint Quality Controller Refresher Course

Code: FPR *HRDF claimable*

This Coating Fingerprint Quality Controller Level 1 (FP1) or Level 2 (FP2) or Professional Level 3 (FP3) has a 5-year certification validity followed by another 5-year re-certification period. As a result, after 10 years, the certification needs to be renewed. Hence, the Refresher Course of IMM Certified Coating Fingerprint Quality Controller or Professional is designed to ensure that the quality controllers keep their knowledge up-to-date. While many of the quality controllers will carry out numerous important tests in their work, it is very likely they will not retrain for all the topics covered in Coating Fingerprint Quality Controller Level 1 or Level 2 or Professional Level 3 certification examinations. This refresher course is designed to review and revise the batch-to-batch consistency and authentication of paints using FTIR analysis.

Reference standards (reference used shall refer to the latest published document):

- MS 2736 (previously known as IMM FP01), Coating Fingerprinting Overall Procedures for Paints Using FTIR and Other Related Methods (to be migrated to Malaysian Standard)
- IMM FP02, Paint Raw Material Overall Procedures Using FTIR and Other Related Methods
- IMM FP03, Dried Coating Fingerprinting Overall Procedures Using FTIR and Other Related Methods

Who should apply

The program is suitable for IMM Certified Coating Fingerprint Quality Controller Level 1 or Level 2 or Professional Level 3 or IMM Certified Coating Fingerprint Trainer whose certification is about to expire.

Before the end of the 5-year re-certification period, the candidate must attend the Refresher Course to renew the certification. Prior to that, the candidate shall attend the Refresher Course for IMM Certified Coating Fingerprint Quality Controller or Certified Coating Fingerprint Trainer.

Objectives

This program aims to serve as a useful refresher course for IMM Certified Coating Fingerprint Quality Controller and/or IMM Certified Coating Fingerprint Trainer who want to be re-certified.

Course topics

- Preparation, review and validation of the Coating Fingerprint Certificate and the compulsory & optional appendices
- IMM FTIR Analysis Standards for protective coatings
- In-house and on-site FTIR testing for protective coatings
- Up-to-date introduction to FTIR hardware and software: desktop, mobile and handheld
- Generation of Reference FTIR spectrum before the qualification for new maintenance painting system and products for offshore application
- Estimation of the degree of similarity for in-house/on-site sample FTIR spectrum with Reference FTIR spectrum
- Rejection and acceptance of samples based on the threshold set using different Compare algorithms
- Interpretation of FTIR test results: in-house, 3rd-party laboratory and on-site

Course duration and mode

Half-day and may be conducted online.

Candidate's criteria

Candidate shall possess IMM Certified Coating Fingerprint Quality Controller Level 1 or Level 2 or Professional Level 3 or IMM Certified Coating Fingerprint Trainer or equivalent. While this course is not mandatory for those who are being re-certified for the first time, the certified individual is encouraged to attend.

However, this course is mandatory at the expiry of the re-certification period (at the end of the 10th year of certification), for all certified individuals as a pre-requisite for re-certification by IMM.

Certificate awarded

Certificate of attendance

Validity period of certificate

1 year

Information on re-certification

The candidate is eligible for re-certification within 1 year of attendance subject to the following conditions being met:

- providing proof to IMM that he/she has been employed in a related profession; and
- providing proof of attendance to the refresher course.

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the certification/re-certification period.

CORROSION PROGRAMS

Certified Corrosion Monitoring Practitioner Level 1

Code: CMP-1 *HRDF claimable*

This certification program will assess candidates who either have some experience, or have undergone training, in corrosion monitoring covering corrosion inhibition monitoring and cathodic protection monitoring.

Reference standards (reference used shall refer to the latest published document):

- ASTM E-797 Standard Practice for Measuring Thickness by Manual Ultrasonic Pulse-Echo Contact Method
- ASTM G96-90 Standard Guide for Online Monitoring of Corrosion in Plant Equipment (Electrical and Electrochemical Methods)
- IMM CM01: Corrosion Monitoring, Competency Levels of Corrosion Monitoring Persons: Basis for Certification Scheme
- ISO 15589-1: Petroleum, Petrochemical and Natural Gas Industries - Cathodic Protection of Pipeline Systems - Part 1: On-land Pipelines
- ISO 15589-2: Petroleum, Petrochemical and Natural Gas Industries - Cathodic Protection of Pipeline Transportation Systems - Part 2: Offshore Pipelines
- NACE 3T199 Techniques for Monitoring Corrosion and Related Parameters in Field Applications
- NACE SP0775 Preparation, Installation, Analysis and Interpretation of Corrosion Coupons in Oilfield Operations

Who should apply

This certification program is intended for all school-leavers, technicians, scientists, engineers, metallurgists, inspectors and inspection supervisors interested in corrosion monitoring and inspection and who wish to pursue a career as an IMM Certified Corrosion Monitoring Practitioner.

Objectives

This program will enable candidates to be assessed on their understanding of the key-points on corrosion inhibition and cathodic protection monitoring and process corrosion monitoring; to retrieve and change-out of coupons and probes; to carry out measurement and interpretation of corrosion rates; to use retrieval tools, service valves, back-pressure pumps and surge tubes; to conduct the cathodic protection monitoring and inspection techniques.

Examination topics

- Fundamental of corrosion
- Forms of corrosion
- Corrosion inhibition & preservation
- Corrosion control techniques (includes coatings)
- Corrosion monitoring techniques
- Corrosion monitoring probes & coupons
- Equipment installation & retrieval process
- Key points monitoring
- Ultrasonic thickness measurement - effectiveness and usage
- Cathodic protection principles
- Cathodic protection inspection techniques and surveys
- Standards and Codes of Practice
- Health, Safety & Environment considerations in corrosion monitoring activities
- Ethnic and Professional Conduct
- Interpersonal skills

Examination format
100 multiple choice questions

Examination duration
2 hours 30 minutes

Examination fee
As specified on the IMM website.

Candidate's criteria
Candidate should have

- Minimum academic qualification - SPM or equivalent* OR
- Attended relevant academic Corrosion Monitoring Practitioner dedicated to the IMM Corrosion Monitoring Practitioner Level 1 Certification with at least 6 months of field experience in Corrosion Monitoring work-scope from employer

NOTE: The applicant must pass the Eye Acuity Examination, with or without corrective lenses, to prove near vision acuity on Jaeger J2 at 12″ or greater (≥30.5 cm). All applicants shall take a colour perception test.

*Candidate fulfills the minimum academic qualification but without field experience in Corrosion Monitoring work-scope is considered as a candidate without experience.

Pre-requisite training
A candidate without experience is required to attend IMM approved/recognized training course which prepares and provides comprehensive guidance and practices aligned to the topics covered in the examination.

A candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification
Pass the examination with a minimum total mark of 70%

Certificate awarded
IMM Certified Corrosion Monitoring Practitioner Level 1.

Validity period of certificate
5 years

Re-sit of examination
A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification

6 months prior to the expiry of certification (at the end of the 5th year of certification), the candidate can apply for re-certification for another 5 years by providing proof to IMM that he/she has been employed in a related profession.

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), the candidate can continue to be certified for a further 5-year period by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

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IMM Corrosion Certification Scheme

Certified Corrosion Monitoring Practitioner Level 2

Code: CMP-2 *HRDF claimable*

IMM Certified Corrosion Monitoring Practitioner Level 2 program will assess candidates who have passed IMM Corrosion Monitoring Practitioner Level 1 certification and have acquired at least 1 year of post-certification experience in corrosion inhibition monitoring and cathodic protection monitoring including coating defect surveys.

Reference standards (reference used shall refer to the latest published document):

- ASTM E-797 Standard Practice for Measuring Thickness by Manual Ultrasonic Pulse-Echo Contact Method
- ASTM G96-90 Standard Guide for Online Monitoring of Corrosion in Plant Equipment (Electrical and Electrochemical Methods)
- IMM CM01: Corrosion Monitoring, Competency Levels of Corrosion Monitoring Persons: Basis for Certification Scheme
- ISO 15589-1: Petroleum, Petrochemical and Natural Gas Industries - Cathodic Protection of Pipeline Systems - Part 1: On-land Pipelines
- ISO 15589-2: Petroleum, Petrochemical and Natural Gas Industries - Cathodic Protection of Pipeline Transportation Systems - Part 2: Offshore Pipelines
- NACE 3T199 Techniques for Monitoring Corrosion and Related Parameters in Field Applications
- NACE SP0775 Preparation, Installation, Analysis and Interpretation of Corrosion Coupons in Oilfield Operations

Who should apply

Holders of the IMM Certified Corrosion Monitoring Practitioner Level 1 Certification or those who meet the pre-requisites recognized by IMM in Tables A.1 & A.2 of Annex A in the IMM CM01 Standard.

Objectives

This program will enable candidates to be assessed on more advanced corrosion reactions in various environments, corrosion management database and how these are related to Asset Integrity and life extension of facilities as well as the utilization of corrosion inhibitor monitoring, cathodic protection monitoring.

Examination topics

- Corrosion mechanism and behavior in various environments.
- Site issues during offshore/onshore Ultrasonic Testing (UT) key point and process monitoring surveys.
- Laboratory tests (coupon weight loss measurement) related to corrosion monitoring.
- Pressurized retrieval and installation of probes and coupons.
- Understand the online non-intrusive corrosion monitoring equipment and setup
- Site issues relating to cathodic protection (CP) inspection and survey techniques.
- Interpretation of CP/process/key-point corrosion monitoring results.
- Standards and Codes of Practice.
- Health, Safety & Environment considerations in corrosion monitoring activities.
- Ethnics and Professional Conduct.
- Interpersonal skills.

Examination format

Theory: 50 multiple choice questions
Practical Assessment:

1. Hands-on handling of corrosion monitoring equipment (probes and coupons)
2. Handling of pressurized retrieval tool
3. Handling of CP monitoring equipment
4. Ultrasonic Testing Thickness Gauge (UTTG) calibration and measurement

Examination duration
Theory examination: 1 hour 30 minutes
Practical assessment: 4 hours

Examination fee
As specified on the IMM website.

Candidate's criteria
Candidate should have

- Passed IMM Certified Corrosion Monitoring Practitioner Level 1 with a minimum of 1 year field experience in corrosion inhibition monitoring, cathodic protection monitoring and coating defect surveys or meet the pre-requisites recognized by IMM in Tables A.1 & A.2 of Annex A in the IMM CM01 Standard AND
- The applicant must pass the Eye Acuity Examination, with or without corrective lenses, to prove near vision acuity on Jaeger J2 at 12″ or greater (≥30.5 cm). All applicants shall take a colour perception test.

Pre-requisite training
A candidate without experience is required to attend IMM approved/recognized training course which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

A candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification
Pass the examination with a minimum total mark of 70% for each assessment.

Certificate awarded
IMM Certified Corrosion Monitoring Practitioner Level 2

Validity period of certificate
5 years

Re-sit of examination
A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification

6 months prior to the expiry of certification (at the end of the 5th year of certification), the candidate can apply for re-certification for another 5 years by providing proof to IMM that he/she has been employed in a related profession.

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), the candidate can continue to be certified for a further 5-year period by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

IMM Corrosion Certification Scheme

Certified Corrosion Monitoring Practitioner Level 3

Code: CMP-3 *HRDF claimable*

IMM Certified Corrosion Monitoring Practitioner Level 3 program will assess candidates who have acquired the IMM Corrosion Monitoring Practitioner Level 2 Certification and have acquired at least 3 years of post-certification experience in corrosion inhibition monitoring and cathodic protection monitoring.

Reference standards (reference used shall refer to the latest published document):

- ASTM E-797 Standard Practice for Measuring Thickness by Manual Ultrasonic Pulse-Echo Contact Method
- ASTM G96-90 Standard Guide for Online Monitoring of Corrosion in Plant Equipment (Electrical and Electrochemical Methods)
- IMM CM01: Corrosion Monitoring, Competency Levels of Corrosion Monitoring Persons: Basis for Certification Scheme
- ISO 15589-1: Petroleum, Petrochemical and Natural Gas Industries - Cathodic Protection of Pipeline Systems - Part 1: On-land Pipelines
- ISO 15589-2: Petroleum, Petrochemical and Natural Gas Industries - Cathodic Protection of Pipeline Transportation Systems - Part 2: Offshore Pipelines
- NACE 3T199 Techniques for Monitoring Corrosion and Related Parameters in Field Applications
- NACE SP0775 Preparation, Installation, Analysis and Interpretation of Corrosion Coupons in Oilfield Operations

Who should apply

Holders of the IMM Certified Corrosion Monitoring Practitioner Level 2 Certification with sufficient work experience, who have met the pre-requisites recognized by IMM in Tables A.1 & A.2 of Annex A in the IMM CM01 Standard and has achieved the minimum years of corrosion inhibition monitoring and cathodic protection monitoring experience, plus having attended a relevant training course.

Objectives

This program is aimed to examine the knowledge and experience of the candidate who is expected to have acquired sufficient skills as a Corrosion Monitoring Practitioner in order for him/her to manage a team of corrosion monitoring technicians and supervisors as well as to communicate with the Stakeholders. He/she shall be examined not only in terms of technical knowledge and technical code-of-conduct and integrity, but also on his/her capabilities to manage a team of personnel under his/her wing.

Examination topics

- Corrosion and electrochemistry relevant to corrosion monitoring.
- Principles of corrosion inhibition and preservation.
- Corrosion monitoring techniques and measurements.
- Key-point corrosion monitoring techniques and measurements such as Ultrasonic Testing Thickness Gauge and other specialized corrosion monitoring methods.
- Corrosion and electrochemistry relevant to cathodic protection.
- Principles of cathodic protection and coatings relevant to corrosion monitoring.
- Monitoring techniques for cathodic protection systems, including AC and DC techniques.
- Standards and Codes of Practice in the relevant application sector.
- Health, Safety and Environmental issues relating to corrosion monitoring tasks.
- Code of Ethics and Professional Conduct of all corrosion monitoring persons.
- Interpersonal communication skills.
- Report writing and technical analytical skills relating to process corrosion monitoring and cathodic protection monitoring.

Examination format
Writing technical analysis reports of 2 case studies
Oral Interview

Examination duration
Writing technical analysis reports of 2 case studies: 1 hour
Oral interview: 2 hours

Examination fee
As specified on the IMM website.

Candidate's criteria
Candidate should have

- Passed IMM Certified Corrosion Monitoring Practitioner Level 2 and shall show proof of having attended a minimum total of 5 days of IMM approved/recognized training course in corrosion monitoring within the last 3 years prior to this application OR
- Passed IMM Certified Corrosion Monitoring Practitioner Level 2 who has achieved the minimum years of corrosion monitoring experience listed in Tables A.2 of Annex A in the IMM CM01 Standard OR
- Submit (with application in advance) his/her latest record of work experience with copies of actual work done in the field of process corrosion monitoring, key-point corrosion monitoring and cathodic protection monitoring, endorsed by the candidate's superiors or clients. Number of years for the work record experience as per Table A.2 of Annex A in the IMM CM01 Standard OR
- Submit a testimonial of their total work experience in corrosion monitoring with details of employment dates, scope of work performed, and proof of continuous corrosion monitoring work without any lapse of more than 18 months. The testimonial must be endorsed by their latest employer or a representative from their client

NOTE: The applicant must pass the Eye Acuity Examination, with or without corrective lenses, to prove near vision acuity on Jaeger J2 at 12″ or greater (≥30.5 cm). All applicants shall take a colour perception test.

Pre-requisite training
A candidate without experience is required to attend IMM approved/recognized training course which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

A candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification
Pass the examination with a minimum total mark of 70% for each assessment.

Certificate awarded
IMM Certified Corrosion Monitoring Practitioner Level 3

Validity period of certificate
5 years

Re-sit of examination
A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification

6 months prior to the expiry of certification (at the end of the 5th year of certification), the candidate can apply for re-certification for another 5 years by providing proof to IMM that he/she has been employed in a related profession.

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), the candidate can continue to be certified for a further 5-year period by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

IMM Corrosion Certification Scheme

Certified Cathodic Protection Practitioner Level 1

Code: CPP1 *HRDF claimable*

This certification program covers the technical and practical fundamentals of the theoretical knowledge and practical techniques on cathodic protection required from a Cathodic Protection tester. The Cathodic Protection Practitioner Level 1 certification program is established to certify the competency of individuals equipped with the knowledge and skills in cathodic protection, understanding of installation, testing and commissioning of cathodic protection (CP) systems. This Level 1 certified personnel shall perform routine inspection, testing and monitoring tasks under the supervision of the Level 2 Certified Cathodic Protection Practitioner Level 2.

Reference standards (reference used shall refer to the latest published document):

- DNV-RP-B401: Cathodic Protection Design
- ISO 15257: Cathodic Protection - Competence Levels of Cathodic Protection Persons - Basis for a Certification Scheme
- ISO 15589-1: Petroleum, Petrochemical and Natural Gas Industries - Cathodic Protection of Pipeline Systems - Part 1: On-land Pipelines
- ISO 15589-2: Petroleum, Petrochemical and Natural Gas Industries - Cathodic Protection of Pipeline Transportation Systems - Part 2: Offshore Pipelines
- NACE SP0169: Control of External Corrosion on Underground or Submerged Metallic Piping Systems

Who should apply

School-leavers, technicians, fresh graduate scientists and engineers having interest or already involved in cathodic protection systems and corrosion management and control, who have undergone sufficient basic training in this field.

Objectives

To access the following knowledge and skills in:

- CP electrical measurements
- CP system inspection and monitoring
- CP installations
- CP pipeline surveys

Examination topics

- Electricity relevant to CP applications and measurements
- Corrosion, electrochemistry and coatings relevant to CP
- Theory, principles and criteria of CP
- Requirements related to the application of CP
- Application methods of CP, galvanic anodes, impressed current
- CP Measurements and test procedures
- Relevance of voltage gradient errors and influence on the structure to electrolyte potential measurement
- Factors influencing the correct selection of reference electrodes for potential measurements
- Effects of excessive CP on coatings, high-yield strength steels and corrosion-resistant alloys
- Diagnostics of CP systems
- Interference conditions (alternating current and direct current)
- Standards and Codes of Practice relevant in CP practices.

- Health, Safety and Environmental issues relating to CP practices.
- Code of Ethics and Professional Conduct of all CP persons.
- Interpersonal communication skills.

Examination format
This open-book examination consists of 100 multiple choice questions.

Candidates can bring in their training manual and other textbooks plus a calculator.

Examination duration
Total 3 hours

Examination fee
As specified on the IMM website.

Candidate's criteria
Candidate should have
- Minimum academic qualification - SPM or equivalent* OR
- Attended relevant academic Cathodic Protection Practitioner dedicated to the IMM Cathodic Protection Practitioner Level 1 Certification with at least 3 months of practical field experience in cathodic protection.

*Candidate fulfills the minimum academic qualification but without experience in cathodic protection technology is considered as a candidate without experience.

Pre-requisite training
A candidate without experience is required to attend IMM approved/recognized training course which prepares and provides guidance and practice aligned to the topics covered in the examination.

A candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification
Pass the examination with a minimum total mark of 70%

Certificate awarded
IMM Certified Cathodic Protection Practitioner Level 1

Validity period of certificate
5 years

Re-sit of examination
A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification
6 months prior to the expiry of certification (at the end of the 5th year of certification), the candidate can apply for re-certification for another 5 years by providing proof to IMM that he/she has been employed in a related profession.

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), the candidate can continue to be certified for a further 5-year period by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

IMM Corrosion Certification Scheme

Certified Cathodic Protection Practitioner Level 2

Code: CPP2 *HRDF claimable*

This certification program covers more advanced theoretical knowledge and practical techniques on cathodic protection compared to the Cathodic Protection Level 1 certification. The Cathodic Protection Practitioner Level 2 certification program will equip the candidate with the knowledge and skills in carrying out installation, testing, inspection, monitoring and troubleshooting including data collection for new cathodic protection installations as well as old cathodic protection systems

Reference standards (reference used shall refer to the latest published document):

- DNV-RP-B401: Cathodic Protection Design
- ISO 15257: Cathodic Protection - Competence Levels of Cathodic Protection Persons - Basis for a Certification Scheme
- ISO 15589-1: Petroleum, Petrochemical and Natural Gas Industries - Cathodic Protection of Pipeline Systems - Part 1: On-land Pipelines
- ISO 15589-2: Petroleum, Petrochemical and Natural Gas Industries - Cathodic Protection of Pipeline Transportation Systems - Part 2: Offshore Pipelines
- NACE SP0169: Control of External Corrosion on Underground or Submerged Metallic Piping Systems

Who should apply

Technicians, scientists, engineers, or any personnel with related work experience and/or has been certified with IMM Certified Cathodic Protection Practitioner Level 1 certification.

Objectives

To access the following knowledge and skills in:

- CP systems
- Electrical measurements
- Pipeline survey techniques
- Operation, maintenance and troubleshooting.

Examination topics

- Electricity relevant to CP applications and measurements
- Corrosion, electrochemistry and coatings relevant to CP
- Theory, principles and criteria of CP
- Requirements related to the application of CP
- Application methods of CP, galvanic anodes, impressed current
- CP measurements and test procedures
- Relevance of voltage gradient errors and influence on the structure to electrolyte potential measurement
- Factors influencing the correct selection of reference electrodes for potential measurements
- Effects of excessive CP on coatings, high-yield strength steels and corrosion-resistant alloys
- Diagnostics of CP systems
- Interference conditions (alternating current and direct current)
- Standards and Codes of Practice relevant in CP practices.
- Health, Safety and Environmental issues relating to CP practices.

- Code of Ethics and Professional Conduct of all CP persons.
- Interpersonal communication skills.
- Report writing and technical analytical skills relating to CP practices.

Examination format

This open book examination comprises both theory and practical assessments, as follows:

- Theory examination: 75 multiple choice questions.
- Practical assessment: Hands-on handling of cathodic protection equipment.

Candidates can bring in their training manual and other textbooks plus calculator.

Examination duration

Theory exam: 3 hours
Practical assessment: 3 hours

Examination fee

As specified on the IMM website.

Candidate's criteria

Candidate should have

- Fresh degree graduate without IMM Cathodic Protection Practitioner Level 1 requires 1 year related working experience OR
- Non-degree holder (diploma or equivalent) with IMM Certified Cathodic Protection Practitioner Level 1 requires minimum 1 year of related working experience OR
- Non-degree holder (SPM or equivalent) without IMM Certified Cathodic Protection Practitioner Level 1 requires minimum 3 years of related working experience OR
- Attended relevant academic Cathodic Protection Course dedicated to the IMM Cathodic Protection Practitioner Level 2 with at least 12 months of practical field experience in cathodic protection.

Pre-requisite training

A candidate without experience is required to attend IMM approved/recognized training course which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

A candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification

Pass in both theory paper and practical assessment with a minimum 70% for each assessment.

Certificate awarded

IMM Certified Cathodic Protection Practitioner Level 2

Validity period of certificate

5 years

Re-sit of examination

A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification

6 months prior to the expiry of certification (at the end of the 5th year of certification), the candidate can apply for re-certification for another 5 years by providing proof to IMM that he/she has been employed in a related profession.

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), the candidate can continue to be certified for a further 5-year period by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

IMM Corrosion Certification Scheme

Certified Cathodic Protection Practitioner Level 3

Code: CPP3 *HRDF claimable*

IMM Certified Cathodic Protection Practitioner Level 3 program will assess candidates who have acquired the IMM Cathodic Protection Practitioner Level 2 Certification and have acquired at least 3 years of post-certification experience in cathodic protection practice. Candidates who have not acquired the IMM Certified Cathodic Protection Practitioner (CPP) Level 2 but have met the minimum pre-requisite qualifications and have acquired at least 5 years of experience in cathodic protection practice may apply to sit for this program.

Reference standards (reference used shall refer to the latest published document):

- DNV-RP-B401: Cathodic Protection Design
- ISO 15257: Cathodic Protection - Competence Levels of Cathodic Protection Persons - Basis for a Certification Scheme
- ISO 15589-1: Petroleum, Petrochemical and Natural Gas Industries - Cathodic Protection of Pipeline Systems - Part 1: On-land Pipelines
- ISO 15589-2: Petroleum, Petrochemical and Natural Gas Industries - Cathodic Protection of Pipeline Transportation Systems - Part 2: Offshore Pipelines
- NACE SP0169: Control of External Corrosion on Underground or Submerged Metallic Piping Systems

Who should apply

Holders of the IMM Certified Cathodic Protection Practitioner Level 2 Certification with sufficient work experience, or non-holders of the IMM Certified Corrosion Monitoring Practitioner (CMP) Level 2 Certification who have met the pre-requisites recognized by IMM.

Objectives

This program is aimed to examine the knowledge and experience of the candidate who is expected to have acquired sufficient skills as a cathodic protection practitioner in order for him/her to manage a team of cathodic protection engineers, technicians and supervisors as well as to communicate with the stakeholders. He/she shall be examined not only in terms of technical knowledge and technical code-of-conduct and integrity, but also on his/her capabilities to manage a team of personnel under his/her wing.

Examination topics

- Electricity relevant to CP applications and measurements
- Corrosion, electrochemistry and coatings relevant to CP
- Theory, principles and criteria of CP
- Requirements related to the application of CP
- Application methods of CP, galvanic anodes, impressed current
- CP measurements and test procedures
- Relevance of voltage gradient errors and influence on the structure to electrolyte potential measurement
- Factors influencing the correct selection of reference electrodes for potential measurements
- Effects of excessive CP on coatings, high-yield strength steels and corrosion-resistant alloys
- Diagnostics of CP systems
- Interference conditions (alternating current and direct current)

- Standards and Codes of Practice relevant in CP practices.
- Health, Safety and Environmental issues relating to CP practices.
- Code of Ethics and Professional Conduct of all CP persons.
- Interpersonal communication skills.
- Report writing and technical analytical skills relating to CP practices including design calculations.

Examination format

Written examination
Oral interview

Candidates shall bring their own copy of the following standards and calculator.

- ISO 15589-1: Petroleum, Petrochemical and Natural Gas Industries - Cathodic Protection of Pipeline Systems - Part 1: On-land Pipelines
- ISO 15589-2: Petroleum, Petrochemical and Natural Gas Industries - Cathodic Protection of Pipeline Transportation Systems - Part 2: Offshore Pipelines
- NACE SP0169: Control of External Corrosion on Underground or Submerged Metallic Piping Systems

Examination duration

Written examination: 2 hours
Oral interview: 2 hours

Examination fee

As specified on the IMM website.

Candidate's criteria

Candidate should have

- Passed IMM Certified Cathodic Protection Practitioner Level 2 and shall show proof of having attended a minimum total of 5 days of IMM approved/recognized training course in cathodic protection within the last 3 years prior to this application. Training topics shall be referenced to ISO-15257 OR
- Passed IMM Certified Cathodic Protection Practitioner (CPP) Level 2 with a minimum of 3 years post-certification field experience in cathodic protection practices OR
- Candidates who have not acquired the IMM CPP Level 2 and shall show proof of having attended a minimum total of 10 days of IMM approved/recognized training course in cathodic protection within the last 5 years prior to this application. Training topics shall be referenced to ISO-15257 OR
- Candidates who have not acquired the IMM CPP Level 2 but have met the minimum pre-requisite qualifications recognized by IMM as per Tables A.1 & A.2 of Annex A in the ISO-15257 Standard and have acquired at least 5 years of experience in cathodic protection practice may apply to sit for the IMM CPP Level 3 Peer Review Examination OR
- Submit (with application in advance) his/her latest 3 years record of work experience with copies of actual work done in the field of cathodic protection, endorsed by candidate's superiors or clients OR
- Submit a testimonial of their total work experience in cathodic protection with details of employment dates, scope of work performed, and proof of continuous cathodic protection work without any lapse of more than 18 months. The testimonial must be endorsed by their latest employer or a representative from their client.

Pre-requisite training

A candidate without experience is required to attend IMM approved/recognized training course which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

A candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification

Pass the examination with a minimum total mark of 70% for each assessment.

Certificate awarded

IMM Certified Cathodic Protection Practitioner Level 3

Validity period of certificate

5 years

Re-sit of examination

A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification

6 months prior to the expiry of certification (at the end of the 5th year of certification), the candidate can apply for re-certification for another 5 years by providing proof to IMM that he/she has been employed in a related profession.

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), the candidate can continue to be certified for a further 5-year period by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

IMM Corrosion Training Course

Corrosion Control by Cathodic Protection Course

Code: CCCP *HRDF claimable*

This is a 2-day course consists of lectures, classroom practical, case studies and knowledge assessment.

Reference standards (reference used shall refer to the latest published document):

- TBA

Who should apply

Managers, engineers, contractors, site supervisors, specifiers and corrosion consultants. It is recommended for graduates of IMM corrosion and coating certification schemes.

Objectives

This course is designed to provide awareness and overview on how cathodic protection (CP) systems function so that they can appreciate the work carried out by CP personnel.

Course topics

1. Introduction to corrosion process
2. The principle of cathodic protection
3. Type of cathodic protection
4. Measurement and monitoring techniques
5. Criteria of cathodic protection
6. Case studies

Course duration

2 days

Pre-requisite(s)

No previous working experience is required.

Certificate awarded

Certificate of attendance

MATERIALS PROGRAMS

IMM Materials Training Course

Materials Selection & Corrosion Course

Code: MSC *HRDF claimable*

This two-day course aims to equip participants with the knowledge and skills to carry out materials selection and corrosion studies for industrial applications. The course has a focus on the selection and performance of metallic materials within the oil and gas sector. The class is based on theory lecture, interactive discussion and case studies.

Reference standards (reference used shall refer to the latest published document):

- TBA

Who should apply

- Engineers involved in projects which involve materials selection or corrosion
- Materials engineers
- Managers who want to gain an overview of the materials selection and corrosion issues
- Integrity Engineers
- Maintenance Engineers

Objectives

- To develop a working knowledge of the materials selection process
- To identify corrosion and other risks to materials within the specific service environment
- To evaluate the mitigation options and see how they can be used to expand the range of materials which can be selected

Course topics

- The materials selection process standards used in the oil and gas sector
- Corrosion and degradation of materials
- Corrosion modeling
- Life cycle costing
- Corrosion mitigation and control

Course duration

2 days

Pre-requisite(s)

No previous working experience is required.

Certificate awarded

Certificate of attendance

IMM Materials Training Course

Metallurgical Failure Investigation Course

Code: MFI *HRDF claimable*

This three-day course aims to equip participants with a broad background knowledge of failure investigation techniques and procedures. The course has an emphasis on metallic materials but in varied industries, *e.g.* oil & gas, aerospace and railways, so participants and can leverage on parallels. The class is based on theory lecture, interactive discussion, case studies and practical demonstration.

Reference standards (reference used shall refer to the latest published document):

- TBA

Who should apply

- Engineers from all industries particularly oil & gas, aerospace and railways
- Material scientists and engineers
- Project engineers
- Asset integrity engineers.

Objectives

- To have an overall view of the techniques and procedures involved in failure investigation
- To understand site preparation, on-site metallography and sample extraction
- To illustrate methodologies for analysis of data
- To identify different failure modes

Course topics

- The standard procedures of an investigation
- The modes of failure including the four fracture modes e.g. Dimple Rupture, cleavage, fatigue and cohesiveness rupture and their various mechanisms, corrosion, environmentally assisted cracking, *e.g.* chloride stress corrosion cracking, nonsensitive, hydrogen embitterment
- Methodologies of data analysis
- Case studies
- On-site metallography and replication

Course duration

3 days

Pre-requisite(s)

No previous working experience is required.

Certificate awarded

Certificate of attendance

IMM Materials Training Course

Basic Course on Operation of Mobile Air Compressor

Code: OMAC *HRDF claimable*

Mobile air compressors are commonly used for maintenance/construction work in oil and gas facilities/sites. There is still a lack of knowledge on the safe operation and maintenance of diesel-powered air compressor for many work leaders, technicians and engineers. Industries need to address this problem urgently to ensure that all mobile air compressors are operated safely and maintained properly to avoid unnecessary downtime due to breakdown of mobile air compressor.

Reference standards (reference used shall refer to the latest published document):

- TBA

Who should apply

Work leaders, technicians and engineers.

Objectives

This one-day training aims to provide participants with the needed basic knowledge and skills in the safe operation and maintenance of diesel-powered mobile air compressor.

Course topics

- Introduction to basic parts and safety features of diesel-powered mobile air compressor.
- Basic steps in the operation of a typical diesel-powered air compressor.
- Duty of a fire watcher (compressor operator).
- Maintenance of diesel-powered air compressor.
- Procedures required in operating of diesel-powered air compressor in oil and gas facilities/sites

Course duration

1 day

Pre-requisite(s)

No previous working experience is required.

Certificate awarded

Certificate of attendance

MECHANICAL JOINT INTEGRITY PROGRAMS

IMM Mechanical Joint Integrity Certification Scheme

Certified Technician in Mechanical Joint Integrity for Small-bore Piping, Tubing and Valves

Code: MJI-SBV *HRDF claimable*

This certification program is designed to provide learners with knowledge encompassing safety hazards at valve sites, grounding knowledge of leak repairs pertaining to valves/small bore piping (SBP) and tubing, causes of Loss of Primary Containment (LOPC) in valves, small bore piping and tubing, identification of leaks, planning of repair works, hands-on skills in executing the repairs, post-repair activities, and periodic inspection required. It teaches both theoretical knowledge and hands-on skills relevant to LOPC repairs and prevention. It provides the theoretical basis and practical competencies required by a practical worker to sit for assessment so as to be certified competent in Mechanical Joint Integrity for Small-bore Piping, Tubing and Valves.

Reference standards (reference used shall refer to the latest published document):

- TBA

Who should apply

This certification program is for those who are in the key roles of installation, assembly and dis-assembly, maintenance and repair, operations and inspection of valves, packing, tubing, compression fittings, small-bore piping and threaded connections, such as:

- Instrument supervisors/team leads
- Valve technicians
- Mechanical technicians
- Maintenance technicians (mechanical/instrument discipline)
- Instrument specialists/engineers
- Operations (multi-skilled) technicians
- Well services personnel dealing with wellhead control panels, chokes and valves

Objectives

The objective of this certification program is to assess and certify workers on their knowledge and hands-on skills/competency concerning small-bore piping, tubing and valves, which covers supplementary health, safety and environment, fundamental theoretical knowledge, dis-assembly, inspection, assembly and reinstatement, post assembly checking/testing, and periodic inspection.

Examination topics

Supplementary health, safety and environmental knowledge when carrying out the works
Grounding knowledge required to carry out the works, covering;

- Valve types and components, valve packing body-bonnet flange, packing replacement, inspection and testing
- Small-bore piping, threaded connection, vibration impact, spool replacement, inspection and testing
- Tubing types, compression fittings, measure and bending, tube cutting, assembly and dis-assembly, tubing
- supports, re-make a tube fitting, inspection and repair.
- Hands-on skills in using a manual torque wrench and hydraulic torque wrench:
- Preparation and set-up of the works
- Reading and interpreting P & ID and isometric/hook-up drawings
- Preparing a simple work pack if there is no work pack provided for the works
- Planning the works, collecting and storage of materials, correct tools
- Disassembly of valve and packing replacement, small-bore piping, tubing and fittings
- Assembly of the valves, packing, tubing, fittings, small-bore piping and threaded connections
- Post-assembly inspection and testing, and periodic inspection of valves, packing, tubing, fittings,

small-bore piping and threaded connections

Examination format

The examination/assessment consists of the following format:

(a) Examination – to complete answering the 35 multiple choice questions within 45 minutes

(b) Practical (hands-on) assessment 1 – Valve packing replacement; consisting of dis-assembly of a valve bonnet, replace the valve packing, re-assembly of the valve bonnet onto valve body, including valve and pipework inspection, set-up, post-assembly inspection and testing using compressed air to check for packing leaks, and re-tightening of packing (if required to stop the packing leak).

(c) Practical (hands-on) assessment 2 – Tube measurement, cutting and bending (3/8" or 10mm OD);
   i. Using a tube bender, cutter, gap inspection gauge and fitting wrenches, the activity consists of correctly bending and cutting a tube as per given tube drawing, installing a 3/8" or 10mm tube union or 3/8" or 10mm NPT connector.
   ii. Removing and re-installing a pressure gauge from/into a ½ NPT process connection

Examination duration

1 day

Examination fee

As specified on the IMM website.

Candidate's criteria

Candidate should have

- Minimum academic qualification - SPM or equivalent* OR
- Minimum 5 years working experience at site (offshore or onshore plant/construction site) in the instrument and process control discipline, hook-up and construction, and maintenance works using tube benders, cutters and gap inspection gauge AND
- Able to read and understand in English

*Candidate fulfills the minimum academic qualification without working experience at site (offshore or onshore plant/construction) is considered as a candidate without experience.

Pre-requisite training

A candidate without experience is required to attend IMM approved/recognized training course which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

A candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification

The candidate must pass in all the following 3 parts:

(a) Examination paper – Achieve minimum 60% mark

(b) Practical (hands-on) assessment 1 – Passed as competent

(c) Practical (hands-on) assessment 2 – Passed as competent

Certificate awarded

IMM Certified Technician in Mechanical Joint Integrity (MJI) for Small-bore Piping, Tubing and Valves

Validity period of certificate

5 years

Re-sit of examination

A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification

6 months prior to the expiry of certification (at the end of the 5th year of certification), the candidate can apply for re-certification for another 5 years by providing proof to IMM that he/she has been employed in a related profession.

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), the candidate can continue to be certified for a further 5-year period by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

IMM Mechanical Joint Integrity Certification Scheme

Certified Technician in Mechanical Joint Integrity for Flange Bolted Connections

Code: MJI-FL *HRDF claimable*

This certification program is designed to equip workers with knowledge concerning typical flange/clamp bolted connections, covering supplementary health, safety and environment, fundamental theoretical knowledge, assembly and reinstatement, post assembly checking/testing, and periodic inspection. It covers both theoretical knowledge and hands-on skills relevant to LOPC prevention and repair in flanged bolted connections. It provides the theoretical basis and practical competencies required by a worker to sit for assessment so as to be a certified competent technician in Mechanical Joint Integrity (MJI) for Flange Bolted Connections.

Reference standards (reference used shall refer to the latest published document):

- **TBA**

Who should apply

This program is for those who have to execute installation, assembly and dis-assembly, maintenance and repair, operations, works supervision and inspection of flange/clamp bolted connections, such as:

- Frontline flange assemblers for pipeline, pipework and process equipment, pressure vessels, towers, rotating machinery
- Fitters/riggers
- Mechanical technicians
- Site team leaders
- Quality and inspection personnel
- Maintenance and construction team leaders, supervisors

Objectives

The objective of this certification program is to assess and certify workers on their knowledge and hands-on skills/competency concerning flange/clamp bolted connections, which covers supplementary health, safety and environment, fundamental theoretical knowledge, dis-assembly, inspection, assembly and reinstatement, post assembly checking/testing, and periodic inspection.

Examination topics

Supplementary health, safety and environmental knowledge when carrying out the works. Grounding knowledge required to carry out the works, covering flanges, gaskets, bolts, torqueing, inspection aspects, testing aspects, manual torque wrench hydraulic torque wrench, clamp connector.
Hands-on skills in using a manual torque wrench and hydraulic torque wrench:

- Preparation and set-up of the works
- Reading and interpreting P & ID and isometric drawings
- Preparing a simple work pack if there is no work pack provided for the works
- Reading and selecting correct torque value from a torque table
- Disassembly
- Inspection of the tools, flanges, bolts, gaskets, lubricants used
- Assembly and post-assembly inspection and testing
- Periodic inspection

Examination format

The exam/assessment consists of the following format:

(a) Examination paper – to complete answering the 35 multiple choice questions within 45 minutes
(b) Practical (hands-on) assessment 1 – using a manual torque wrench, including inspection, set-up, using torquentable, checking the validity of the calibration certificate, setting the wrench, actual disassembly, assembly, post-assembly inspection and testing.
(c) Practical (hands-on) assessment 2 – using a pneumatic-powered hydraulic torque wrench, including inspection, set-up, using torque table, checking the validity of the calibration certificate, setting the wrench, actual disassembly, assembly, post-assembly inspection and testing.
(d) Practical (hands-on) assessment 3 – using a clamp connector (*e.g.* Grayloc), including inspection, set-up, referring to the manufacturer's instructions, setting the wrench, actual disassembly, assembly, post-assembly inspection and testing.

Examination duration

1 day

Examination fee

As specified on the IMM website.

Candidate's criteria

Candidate should have

- Minimum academic qualification - SPM or equivalent* OR
- Minimum 5 years working experience at site (offshore or for onshore plant/construction site) AND
- Have used manual torque wrench or supervised workers using manual torque wrench and hydraulic torque wrench for flange bolted connections AND
- Fit-for work for offshore or for onshore plant/construction site AND
- Able to read and understand in English

*Candidate fulfills the minimum academic qualification without working experience at site (offshore or onshore plant/construction) is considered as a candidate without experience.

Pre-requisite training

A candidate without experience is required to attend IMM approved/recognized training course which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

A candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification

The candidate must pass in all the following 4 parts:

(a) Examination paper – Achieve minimum 60% mark
(b) Practical (hands-on) assessment 1 – Passed as competent
(c) Practical (hands-on) assessment 2 – Passed as competent
(d) Practical (hands-on) assessment 3 – Passed as competent

Certificate awarded

IMM Certified Technician in Mechanical Joint Integrity (MJI) for Flange Bolted Connections

Validity period of certificate

5 years

Re-sit of examination

A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification

6 months prior to the expiry of certification (at the end of the 5th year of certification), the candidate can apply for re-certification for another 5 years by providing proof to IMM that he/she has been employed in a related profession.

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), the candidate can continue to be certified for a further 5-year period by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

IMM Mechanical Joint Integrity Training Course

Valve Operations, Maintenance and Inspection Including Flange Breaking Course

Code: VOMI *HRDF claimable*

To develop the skills and knowledge necessary for various valves includes Glove Valves, Gate Valves, Check Valves, Safety Valves, identifications, installation, selection, maintenance and testing.

Reference standards (reference used shall refer to the latest published document):

- **TBA**

Who should apply

Engineers, supervisors and inspectors

Objectives

- Identify the type of valves used in the process and their functions.
- Understand the valve design and the material use for the correct applications.
- Understand the valves parts and how it works
- Identify causes of and failures and reasons
- Understand and develop skill on valve seat lapping

Course topics

- Type and function of valve
- Fastening devices
- Flanges
- Gasket
- Spiral would
- Non-metallic
- Re-assembly of valve
- Installation of valve to elevated location
- Pressurize system
- Hydrostatic test
- Dismantling of valve
- Testing procedure

Course duration

3 days

Pre-requisite(s)

No previous working experience is required.

Certificate awarded

Certificate of attendance

ROTATING EQUIPMENT PROGRAMS

IMM Rotating Equipment Training Course

Competent Mobile Industrial Compressor Operator Course

Code: MICO *HRDF claimable*

Mobile air compressors are commonly used for maintenance/construction work in oil and gas facilities/sites. There is still a lack of knowledge on the safe operation and maintenance of diesel-powered air compressor for many work leaders, technicians and engineers. Industries need to address this problem urgently to ensure that all mobile air compressors are operated safely and maintained properly to avoid unnecessary downtime due to breakdown of mobile air compressor.

Reference standards (reference used shall refer to the latest published document):

- TBA

Who should apply

Work leaders, technicians and engineers

Objectives

This one-day training aim to ensure that all site personnel that operates a mobile industrial compressor have reached a recognised level of operational knowledge and awareness and to enable them to work on site more efficiently and productively. It is also to ensure to validate existing skills of workers and is an alternative method of affirmation. This one-day training aim to provide participants with the much-needed basic knowledge and skills in the safe operation and maintenance of diesel-powered mobile air compressor.

Course topics

- Introduction to basic parts and safety features of diesel-powered mobile air compressor
- Basic steps in operation of a typical diesel-powered air compressor
- Start system and fuel system
- Engine condition (oil leak) and engine cut off
- Shutdown device
- Guard (rotating parts), spark arrestor & exhaust systems
- Pressure relief valve and pressure gauge fitting, couplings, hoses and air vessel condition
- Maintenance's logs
- Lifting pad eyes/tyre condition and earthing/grounding conditions
- Basic maintenance of diesel-powered air compressor
- Procedures required in operating of diesel-powered air compressor in oil and gas facilities / site
- Inspect for frequently found defects in hose, Chicago coupling (quick release and threaded)
- Inspect air filter and needle gun/power brush/Bristle brush/Monti brush

Course duration

1 day

Pre-requisite(s)

No previous working experience is required.

Certificate awarded

Certificate of attendance

IMM Rotating Equipment Training Course

Competent Mobile Industrial Equipment Inspector Course

Code: MIEI *HRDF claimable*

Mobile air compressors are commonly used for maintenance/construction work in oil and gas facilities/sites. There is still a lack of knowledge on the safe operation and maintenance of diesel-powered air compressor for many work leaders, technicians and engineers. Industries need to address this problem urgently to ensure that all mobile air compressors are operated safely and maintained properly to avoid unnecessary downtime due to breakdown of mobile air compressor.

Reference standards (reference used shall refer to the latest published document):

- TBA

Who should appy

Work leaders, technicians and engineers

Objectives

This two-day training aim to ensure that all site personnel that operates mobile industrial equipment have reached a recognised level of operational knowledge and awareness and to enable them to work on site more efficiently and productively. It is also to ensure to validate existing skills of workers and is an alternative method of affirmation. This two-day training aim to provide participants with the needed basic knowledge and skills in the safe operation and maintenance of several selected frequently used industrial mobile equipment.

Course topics

- Compressor
- Portable pump
- Portable welding set
- Centrifugal pump (engine driven)
- Paint spraying equipment
- Grit blasting equipment
- High pressure water/steam cleaner

Course duration

2 days

Pre-requisite(s)

No previous working experience is required.

Certificate awarded

Certificate of attendance

IMM Rotating Equipment Training Course

Practical Approach to Inspection and Maintenance of Stream Turbine Course

Code: IMST *HRDF claimable*

Proper understanding on the design, operation and maintenance aspects of steam turbines and auxiliaries play an important role in ensuring the success of operating the mentioned machines. Misinterpretation on the inspection or the maintenance procedures will result in bigger damage to its integrated system. Repair or replacement of this equipment is expensive and loss of revenue while machinery is down can spell the difference between continued prosperity or financial disaster. Thus, it is vital for managers, engineers, foreman and trade personnel to equip themselves with sufficient practical understanding of steam turbines and auxiliaries and practising the correct inspection and maintenance methodology adopted worldwide.

Reference standards (reference used shall refer to the latest published document):

- TBA

Who should apply

Engineers, supervisors, operators and senior technician

Objectives

- To provide participants with practical knowledge of the inspection and maintenance matters related to steam turbines.
- To expose and guide the participants on step-to- step procedure of inspection and maintenance of steam turbines
- To provide participants with knowledge in the latest state of art technology, skills and experience in solving steam turbine problems, both maintenance and inspection.

Course topics

- Basic theory of steam turbine
- Types of steam turbine
- Steam turbine blading concept
- Construction and function of major turbine parts
- Associate system
- Governing and control system of steam turbine
- Rotor dynamic behaviour of machinery
- Inspection technique
- Preventive and corrective maintenance
- Breakdown/overhaul maintenance
- Disassembling/assembling activities
- Clearance check/reading
- Inspection of part (Liquid Penetrant Testing (PT)/Magnetic Particle Testing (MT))
- Precision alignment

Course duration

4 days

Pre-requisite(s)

No previous working experience is required.

Certificate awarded

Certificate of attendance

IMM Rotating Equipment Training Course

Practical Approach to Precision Alignment Methods Course

Code: PAM *HRDF claimable*

Misalignment is one of the leading causes of damage to bearings, seals, coupling and other component inside the rotating equipment. Based on record given by rotating equipment experts, a substantial amount of machinery problems is due to misaligned shaft. Machinery that is forced to shut down due to this problem can contribute to loss of extensive revenue and damages that required repair or replacement of internal parts which is extremely expensive. A well-aligned shaft prevents excessive loading of bearings and avoid fatigue failure. Thus, increasing the useful life of machinery. The ultimate aim shall be that the participants are able to practically and confidently carry out the alignment task in the fields.

Reference standards (reference used shall refer to the latest published document):

- TBA

Who should apply

Engineer, maintenance and technical support personnel, personnel who direct activities related to alignment and machine reliability, and management personnel whose involve alignment of rotating machinery.

Objectives

- To provide participants with practical knowledge of accurately align any type of rotating machines in a variety of different ways
- To pose a step-to-step procedure in executing the alignment
- To familiarise and educate participants in using different alignment methods namely Conventional methods (rim & face method, reverse dial indicator methods) and precision laser alignment method
- To assess the experienced craftsmen on their capability and exposure of the latest technology available
- The ultimate aim shall be that the participants are able to practically and confidently carry out the alignment task in the fields

Course topics

- Definition
- Precision alignment check & corrective methods
- Alignment kits/training kits
- Application of laser alignment system
- Alignment consideration for specific of machine & conditions

Course duration

3 days

Pre-requisite(s)

No previous working experience is required.

Certificate awarded

Certificate of attendance

IMM Rotating Equipment Training Course

Practical Approach to Precision Balancing Methods Course

Code: PBM *HRDF claimable*

Unbalance is one of the most common causes of machinery vibration and is present to some degree in all machines. Unbalance causes vibration of the entire rotor assembly which is thru, causes excessive wear in bearings, bushing, seals, shafts, gears, couplings *etc*. Thus, understanding the correct way to counter this unbalance force is important to reduce the unbalance to acceptable limits and improve the overall performance of the machine.

Reference standards (reference used shall refer to the latest published document):

- TBA

Who should apply

Engineers, supervisors and senior inspectors

Objectives

- To provide participants with practical knowledge of the unbalance problems in machinery.
- To expose and guide the participants on step-to-step procedure of carrying out unbalance rectification and correction.
- To provide participants with knowledge in the latest state of the art technology, skills and experience in solving unbalance problems.

Course topics

- Principle of vibration
- Data acquisition
- Signal processing
- Condition monitoring
- Fault analysis & correct action
- Equipment testing & diagnostics
- Reference standards
- Reporting & documentations
- Fault serenity determination
- Rotor/bearing dynamics

Course duration

3 days

Pre-requisite(s)

No previous working experience is required.

Certificate awarded

Certificate of attendance

IMM Rotating Equipment Training Course

Reciprocating Compressors: Operations, Maintenance, Inspection and Troubleshooting Course

Code: RCOM *HRDF claimable*

Most process plants will require compressing process where compressors are installed to play this role. Reciprocating compressors are normally classified as critical equipment to these process plants, thus is important to acquire the knowledge related to the operation and maintenance of reciprocating compressors to ensure smooth running and avoid unnecessary production loss due to failure of reciprocating compressor operation.

Reference standards (reference used shall refer to the latest published document):

- TBA

Who should attend

Engineers, supervisors and inspectors

Objectives

- To provide a strong fundamental and practical knowledge of reciprocating compressors of its major parts and its operational aspects.
- To understand how to carry out maintenance and inspection of reciprocating compressor in the industry.
- To understand troubleshooting techniques for typical problems related to reciprocating compressors.

Course topics

- Fundamental of reciprocating compressor
- Major components of reciprocating compressors
- Auxiliaries
- Comparison of pulsation suppression devices
- Inspection & maintenance of reciprocating compressors
- Continue of overhaul activities
- Troubleshooting techniques on typical problems

Course duration

3 days

Pre-requisite(s)

No previous working experience is required.

Certificate awarded

Certificate of attendance

IMM Rotating Equipment Training Course

Troubleshooting Techniques for Rotating Equipment Course

Code: TRE *HRDF claimable*

Rotating equipment like turbines, compressors, turboexpanders *etc*. are very important equipment to any process plant. Normally, there are a lot of machinery problems associate to this equipment such as misalignment unbalance, fluid induces instability etc. which will interrupt the smooth running and effect its efficiency, thus interrupting the production of the plant. There are various established techniques to troubleshoot this machinery problem which are accepted and established internationally and understanding and mastering such knowledge and skills will be of extreme benefit to the operating plants in ensuring a continuous flow of production by minimizing downtime upon knowing the actual problems of the respective machines. As such, this course is tailored to educate the participants on these internationally accepted troubleshooting techniques.

Reference standards (reference used shall refer to the latest published document):

- TBA

Who should apply

Engineers, supervisors and inspectors

Objectives

- To educate participants with the latest internationally accepted techniques to troubleshoot rotating equipment problem.
- To familiarize participants with a variety of troubleshooting techniques with hands-on practical exercises.

Course topics

- Maintenance philosophies
- Troubleshooting techniques
- Infrared thermography (basic)
- What is vibration
- Vibration detection devices
- Find the root cause of vibration problems
- Simulating vibration source and analysis
- Electrical motor analysis & practical
- Lubrication fundamental
- Identifying root causes with oil analysis
- Lubrication management best practices
- Infrared thermography

Course duration

3 days

Pre-requisite(s)

No previous working experience is required.

Certificate awarded

Certificate of attendance

THERMAL INSULATION PROGRAMS

IMM Thermal Insulation Training Course

Introduction to Thermal Insulation Course

Code: TI *HRDF claimable*

Focus on an overview of the industrial insulation and to help supervisors, engineers and managers to briefly understand the insulation works.

Reference standards (reference used shall refer to the latest published document):

- TBA

Who should apply

This course is suitable for those who wish to understand the thermal insulation for industries, prevention of corrosion under insulation (CUI), QA/QC & inspection, theoretical background & developments.

Objectives

The objective of this course is to train and upgrade individuals in thermal insulation materials applications as well as the trade of sheet metal shop fabrication plus field installations.

Understanding of thermal insulation design, installation, QA/QC, HSE, repair and maintenance.

Course topics

- Insulation specifications
- Insulation materials
- Hot & cold insulation
- Corrosion under insulation (CUI)
- Measurement
- QA/QC & inspection
- Insulation installation
- Cladding (metal & non-metal)
- Health, safety & environment

Course duration

2 days

Pre-requisite(s)

No previous working experience is required.

Certificate awarded

Certificate of attendance

IMM Thermal Insulation Certification Scheme

IMM Certified Thermal Insulation Installer

Code: TII *HRDF claimable*

This program is meant for training and upgrading individuals in thermal insulation materials applications as well as the trade of sheet metal shop fabrication plus field installations.

Reference standards (reference used shall refer to the latest published document):

- TBA

Who should apply

The program is suitable for those persons who wish to begin a career in this field but have little or no experience and for insulation engineers, specifier, technicians, supervisor and inspector who desire to broader their knowledge in the usage and technique of thermal insulation and sheet metal application.

Objectives

It aims to provide participants with the knowledge and skills to carry out insulation works efficiently and effectively with the clear understanding of the following:

- Types of thermal insulation and sheet metal materials specified by the vendors and clients in insulation specifications.
- Equipment and piping systems components are commonly seen in the oil and gas industries.
- Tools and aids usage during the preparation and field installation of thermal insulation materials.
- Sheet metal equipment and tools used during the layouts, cutting, fabrication and field installation works.
- Standard insulation calculation

Examination topics

1. Introduction to insulating and sheet metal trade
2. Equipment and piping system components in the petrochemical, oil & gas and energy industries
3. Types of thermal insulation materials for hot, cold and dual temperature services
4. Types of sheet metal materials
5. Equipment and tools used in the insulating and sheet metal trade
6. Basic safety for insulating and sheet metal trade
7. Plan and isometric piping drawings
8. Pattern layout/fabrication/field installation
    - Pipe and elbow
    - Equal and unequal branch and header
    - Concentric and eccentric reducer
    - Valve
    - Flange
    - Strainer
    - Elbow Trunnion

Examination format

TBA

Examination duration

TBA

Examination fee

As specified on the IMM website.

Candidate's criteria

Candidate should have

- Minimum academic qualification - SPM or equivalent*

*Candidate fulfills the minimum academic qualification but without field experience in thermal insulation is considered as a candidate without experience.

Pre-requisite training

A candidate without experience is required to attend IMM approved/recognized training course which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

A candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification

TBA

Certificate awarded

IMM Certified Thermal Insulation Installer

Validity period of certificate

5 years

Re-sit of examination

A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification

6 months prior to the expiry of certification (at the end of the 5th year of certification), the candidate can apply for re-certification for another 5 years by providing proof to IMM that he/she has been employed in a related profession.

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), the candidate can continue to be certified for a further 5-year period by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

VIBRATION PROGRAMS

IMM Vibration Certification Scheme

Certified Vibration Practitioner Category 1

Code: VP1 *HRDF claimable*

The quality of vibration analysis and condition monitoring depends to a very large extent on the quality of the people who carry it out. It does not matter how good the monitoring equipment is or even how committed management is, the program will fall unless it is run by capable and dedicated people. What can be done to ensure the availability of capable and dedicated people? A professional certificate with performance objectives will be the answer.

Reference standards (reference used shall refer to the latest published document):

- ISO 18436-2: Condition Monitoring and Diagnostics of Machines - Requirements for Qualification and Assessment of Personnel - Part 2: Vibration Condition Monitoring and Diagnostics

Who should apply

This program is intended for engineers, supervisors, inspections and technicians who wish to pursue a career as an IMM Certified Vibration Practitioner.

Objectives

- To highlight the impact of vibration management on health, safety and environment.
- To identify common vibration problems on machinery & their impact on productivity.
- To highlight the importance of vibration technology from the efficiency and productivity perspective.
- To equip participants with strong testing, analysing and diagnosing skills.

Examination topics

- Introduction to condition monitoring
- Maintenance programs
- Condition monitoring
- Condition-Based Maintenance (CBM)
- CBM procedure

Examination format

60 multiple choice questions

Examination duration

2 hours

Examination fee

As specified on the IMM website.

Candidate's criteria

Candidate should have

- Minimum academic qualification - SPM or equivalent* with at least credit in English and Mathematics

*Candidate fulfills the minimum academic qualification but without experience in vibration-related field is considered as a candidate without experience.

NOTE: Candidate's criteria can be accessed based on ISO 18436-2.

Pre-requisite training

A candidate without experience is required to attend IMM approved/recognized training course which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

A candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification

Pass the examination with a minimum total mark of 70%

Certificate awarded

IMM Certified Vibration Practitioner Category 1

Validity period of certificate

5 years

Re-sit of examination

A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification

6 months prior to the expiry of certification (at the end of the 5th year of certification), the candidate can apply for re-certification for another 5 years by providing proof to IMM that he/she has been employed in a related profession.

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), the candidate can continue to be certified for a further 5-year period by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

IMM Vibration Certification Scheme

Certified Vibration Practitioner Category 2

Code: VP2 *HRDF claimable*

The quality of vibration analysis and condition monitoring depends to a very large extent on the quality of the personnel performing the task. What can be done to ensure the availability of capable and dedicated people? A professional certification with performance objectives will be the answer.

Reference standards (reference used shall refer to the latest published document):

- ISO 18436-2: Condition Monitoring and Diagnostics of Machines - Requirements for Qualification and Assessment of Personnel - Part 2: Vibration Condition Monitoring and Diagnostics

Who should apply

This program is intended for technicians, supervisors, engineers or anyone who passed IMM Certified Vibration Practitioner Category 1 and is interested to upgrade his/her knowledge and career in vibration conditioned monitoring and analysing.

Objectives

- To highlight the impact of vibration management on health, safety and environment.
- To identify common vibration problems on machinery & their impact on productivity.
- To highlight the importance of vibration technology from the efficiency and productivity perspective.
- To equip participants with strong testing, analysing and diagnosing skills.

Examination topics

- Principles of vibration
- Data acquisition
- Signal processing
- Condition monitoring
- Fault analysis
- Correction action
- Equipment knowledge
- Reference standards
- Fault severity determination

Examination format

110 multiple choice questions

Examination duration

3 hours

Examination fee

As specified on the IMM website.

Candidate's criteria

Candidate should have

- IMM Certified Vibration Practitioner Category 1 and with at least 6 months working experience in vibration monitoring.

NOTE: Candidate's criteria can be accessed based on ISO 18436-2.

Pre-requisite training

A candidate without experience is required to attend IMM approved/recognized training course which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

A candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification

Pass the examination with a minimum total mark of 70%

Certificate awarded

IMM Certified Vibration Practitioner Category 2

Validity period of certificate

5 years

Re-sit of examination

A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification

6 months prior to the expiry of certification (at the end of the 5th year of certification), the candidate can apply for re-certification for another 5 years by providing proof to IMM that he/she has been employed in a related profession.

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), the candidate can continue to be certified for a further 5-year period by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

IMM Vibration Certification Scheme

Certified Vibration Specialist Category 3

Code: VS3 *HRDF claimable*

The quality of vibration analysis and condition monitoring depends to a very large extent on the quality of the people who carry it out. It does not matter how good the monitoring equipment is or even how committed management is, the program will fall unless it is run by capable and dedicated people. What can be done to ensure the availability of capable and dedicated people? A professional certificate with performance objectives will be the answer.

Reference standards (reference used shall refer to the latest published document):

- ISO 18436-2: Condition Monitoring and Diagnostics of Machines - Requirements for Qualification and Assessment of Personnel - Part 2: Vibration Condition Monitoring and Diagnostics

Who should apply

This program is intended for technicians, supervisors, engineers or anyone who passed IMM Certified Vibration Practitioner Category 2 and is interested to upgrade his/her knowledge and career in vibration conditioned monitoring and analysing.

Objectives

- To highlight the impact of vibration management on health, safety and environment.
- To identify common vibration problems on machinery & it's impact on productive.
- To highlight the importance of vibration technology from the efficiency and productivity perspective.
- To equip participants with strong testing, analysing and diagnosing skills.

Examination topics

- Principles of vibration
- Data acquisition
- Signal processing
- Condition monitoring
- Fault analysis
- Correction action
- Equipment knowledge
- Reference standards
- Fault severity determination

Examination format

TBA

Examination duration

TBA

Examination fee

As specified on the IMM website.

Candidate's criteria

Candidate should have

- IMM Certified Vibration Practitioner Category 2 and with at least 6 months working experience in vibration monitoring

NOTE: Candidate's criteria can be accessed based on ISO 18436-2.

Pre-requisite training

A candidate without experience is required to attend IMM approved/recognized training course which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

A candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification

TBA

Certificate awarded

IMM Certified Vibration Specialist Category 3

Validity period of certificate

5 years

Re-sit of examination

A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification

6 months prior to the expiry of certification (at the end of the 5th year of certification), the candidate can apply for re-certification for another 5 years by providing proof to IMM that he/she has been employed in a related profession.

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), the candidate can continue to be certified for a further 5-year period by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

IMM Vibration Certification Scheme

Certified Vibration Specialist Category 4

Code: VS4 *HRDF claimable*

The quality of vibration analysis and condition monitoring depends to a very large extent on the quality of the people who carry it out. It does not matter how good the monitoring equipment is or even how committed management is, the program will fall unless it is run by capable and dedicated people. What can be done to ensure the availability of capable and dedicated people? A professional certificate with performance objectives will be the answer.

Reference standards (reference used shall refer to the latest published document):

- ISO 18436-2: Condition Monitoring and Diagnostics of Machines - Requirements for Qualification and Assessment of Personnel - Part 2: Vibration Condition Monitoring and Diagnostics

Who should apply

This program is intended for technicians, supervisors, engineers or anyone who passed IMM Certified Vibration Practitioner Category 3 and is interested to upgrade his/her knowledge and career in vibration conditioned monitoring and analysing.

Objectives

- To highlight the impact of vibration management on health, safety and environment.
- To identify common vibration problems on machinery & their impact on productivity.
- To highlight the importance of vibration technology from the efficiency and productivity perspective.
- To equip participants with strong testing, analysing and diagnosing skills.

Examination topics

- Data acquisition
- Signal processing
- Condition monitoring
- Fault analysis & correct action
- Equipment testing & diagnostics
- Reference standards
- Reporting & documentations
- Fault severity determination
- Rotor/bearing dynamics

Examination format

TBA

Examination duration

TBA

Examination fee

As specified on the IMM website.

Candidate's criteria

Candidate should have

- IMM Certified Vibration Practitioner Category 3 and with at least 24 months working experience in vibration monitoring

NOTE: Candidate's criteria can be accessed based on ISO 18436-2.

Pre-requisite training

A candidate without experience is required to attend IMM approved/recognized training course which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

A candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification

TBA

Certificate awarded

IMM Certified Vibration Specialist Category 4

Validity period of certificate

5 years

Re-sit of examination

A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification

6 months prior to the expiry of certification (at the end of the 5th year of certification), the candidate can apply for re-certification for another 5 years by providing proof to IMM that he/she has been employed in a related profession.

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), the candidate can continue to be certified for a further 5-year period by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

WELDING PROGRAMS

IMM Welding Certification Scheme

Certified Welding Inspector

Code: CWI *HRDF claimable*

Participants are exposed to different aspects of industrial welding technology and fabrication, such as safety, weld inspection, reporting, joint design, welding processes, welding metallurgy and materials behaviour during welding production. Theoretical and practical aspects of inspection techniques such as visual inspection (VT), weld measurements, magnetic particle examination (MT), penetrant examination technique (PT), ultrasonic examination (UT) and radiographic examination (RT) will be part of the training by qualified welding personnel.

Reference standards (reference used shall refer to the latest published document):

- TBA

Who should apply

This program is suitable for professionals with working experience in welding and fabrication, who are willing to upgrade their skills according to international standards.

Objectives

- To improve safe welding practices
- To understand the welding practices carried out in their industry
- To implement good welding practices in their industry
- To select the right welding equipment in their industry
- To identify common welding defects and ways to overcome them
- To make the right selection of electrodes & materials
- To understand Weld Procedure Specification (WPS), Procedure Qualification Record (PQR) and Welder Qualification Test (WQT) for the repair of fired & unfired pressure vessels

Examination topics

- Introduction and safety
- Duties and responsibilities
- Inspection test plan
- Inspection report
- Welding procedure specification
- Construction drawings (ISO standards, piping and instrumentation diagrams, detailed drawings)
- Codes/standards
- Joint design
- Construction and design
- Welding processes
- Welding symbols
- Welding metallurgy
- Materials strength and testing
- Materials behaviour of metals
- Welding defects
- Damage mechanisms
- Non-destructive examination

Examination format

Written examination

- Part 1: 10 multiple choice questions and 5 subjective questions (Closed book)
- Part 2: Writing analysis reports – 2 questions (Open book)

Examination duration
Part 1: 3 hours
Part 2: 2 hours

Examination fee
As specified on the IMM website.

Candidate's criteria
Candidate should have

- Minimum academic qualification - SPM or equivalent with 5 years working experience in the welding related field OR
- Engineering Diploma in Engineering/Technology with 3 years working experience in the welding related field OR
- Vocational Diploma in Engineering/Technology with 3 years working experience in the welding related field OR
- Degree in Engineering with 1 year working experience in the welding related field

Pre-requisite training
A candidate without experience is required to attend IMM approved/recognized training course which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

A candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification
Pass the examination with a minimum total mark of 70% for each paper.

Certificate awarded
IMM Certified Welding Inspector

Validity period of certificate
5 years

Re-sit of examination
A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification
6 months prior to the expiry of certification (at the end of the 5th year of certification), the candidate can apply for re-certification for another 5 years by providing proof to IMM that he/she has been employed in a related profession.

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), the candidate can continue to be certified for a further 5-year period by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

IMM Welding Certification Scheme

IMM-JWES Certified Associate Welding Engineer/Welding Engineer/Senior Welding Engineer

Code: AWE/WE/SWE *HRDF claimable*

The Institute of Materials, Malaysia (IMM) in collaboration with the Japan Welding Engineering Society (JWES) will conduct courses and examinations required for the certification of ASSOCIATE WELDING ENGINEER (AWE), WELDING ENGINEER (WE) & SENIOR WELDING ENGINEER (SWE). JWES is an organisation accredited by the Japan National Accreditation Board (JNAB) to certify personnel according to the requirements of ISO/IEC 17024.

Reference standards (reference used shall refer to the latest published document):

- ISO 14731: Welding Coordination - Tasks and Responsibilities
- WES 8013: Standard for Certification of Welding Coordinators

Who should apply

This certification scheme is intended for professionals with working experience in welding and fabrication, who are willing to upgrade their skills according to international standards.

Objectives

- To provide training, knowledge and examination required for the Welding Engineer Certification in accordance with JWE5-WES 8013: Standard of Certification of Welding Coordination Personnel and ISO 14731: Welding Coordination Tasks and Responsibilities
- To provide participants with advanced certification of Associate Welding Engineer (AWE), Welding Engineer (WE) & Senior Welding Engineer (SWE) for aspiring leaders / instructors to produce skilled welding engineers in the future
- To diversify the participants' capability through exercises in this training course

Exam topics

ASSOCIATE WELDING ENGINEER (AWE)

1. Welding processes and equipment
2. Materials and their behaviour during welding
3. Design and construction
4. Fabrication and application engineering

WELDING ENGINEER (WE)

1. Advanced welding processes and equipment
2. Advanced materials and their behaviour during welding
3. Advanced design and construction
4. Advanced fabrication and application engineering

SENIOR WELDING ENGINEER (SWE)

1. Welding processes and equipment
2. Materials and their behaviour during welding
3. Design and construction
4. Welding design & fabrication of frame structures
5. Welding design & fabrication of vessels

Examination format

AWE: Written examination
WE: Written examination
SWE: Written & oral examinations

Examination duration

AWE: 2 hours 30 minutes
WE: 2 hours 30 minutes
SWE: 1-day

Examination fee

As specified on the IMM website.

Candidate's criteria

Candidate should have

ASSOCIATE WELDING ENGINEER (AWE)

- Degree in Science/Engineering with 1 year working experience in the welding related field OR
- Degree in other than Science/Engineering with 2 years working experience in the welding related field OR
- Diploma in Science/Engineering/Technology with 1 year working experience in the welding related field OR
- Vocational graduate in Science/Engineering with 2 years working experience in the welding related field OR
- SPM or equivalent with 4 years working experience in the welding related field

WELDING ENGINEER (WE)

- Degree in Science/Engineering with 2 years working experience in the welding related field OR
- Degree in other than Science/Engineering with 4 years working experience in the welding related field OR
- Diploma in Science/Engineering/Technology with 4 years working experience in the welding related field OR
- Vocational graduate in Science/Engineering with 7 years working experience in the welding related field OR
- SPM or equivalent with 8 years working experience in the welding related field OR
- Associate Welding Engineer certificate holder with 3 years working experience in the welding related field

SENIOR WELDING ENGINEER (SWE)

- Degree in Science/Engineering with 3 years working experience in the welding related field OR
- Degree in other than Science/Engineering with 6 years working experience in the welding related field OR
- Diploma in Science/Engineering/Technology with 6 years working experience in the welding related field OR
- Welding Engineer certificate holder with 3 years working experience in the welding related field

Pre-requisite training

A candidate without experience is required to attend IMM approved/recognized training course which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

A candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification

Pass the examination with a minimum total mark of 70% for each assessment.

Certificate awarded
IMM-JWES Certified Associate Welding Engineer
IMM-JWES Certified Welding Engineer
IMM-JWES Certified Senior Welding Engineer

Validity period of certificate
5 years

Re-sit of examination
A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification
WE Certification System specifies the Term of Registration and the Initial Term of Validity.

The Term of Registration is Five (5) years. After 5 years, a candidate must go through Re-certification Procedure.
The Initial Term of Validity is Two (2) years. After 2 years, a candidate must go through Surveillance Procedure.

Surveillance Procedure
Surveillance is conducted by assessment of job engagement in the initial term of validity, especially during the period of 6 months to 3 months before the expiring date. The new certificate is valid for 3 years from the next day of the expiring date of the old one.

Re-certification Procedure
Re-certification is conducted by assessment of job engagement in 3 years after Surveillance and Seminar about latest welding technology and written examination held in from 12 months to 2 months before the expiring date. The new certificate is valid for 2 years from the next day of the expiring date of the old one.

IMM Welding Certification Scheme

IMM Certified Thermit Welding Practitioner (Level 1)

Code: TWP *HRDF claimable*

This specialised competency program on Thermit Welding Practitioner Level 1 has been developed to fulfill the requirement of competency skills for track workers in performing the maintenance activities for achieving optimum operation.
Upon completion of this competency participants will be able to:

- Identify thermit welding components
- Identify thermit welding equipment and tools to carry out the process.
- Understanding the operational flows in order to carry out the process in a safe and efficient manner
- Prepare thermit welding works
- Enhance in technical maintenance skill
- Perform thermit welding
- Understand the job scope of a practitioner

Reference standards (reference used shall refer to the latest published document):

- TBA

Who should apply

- Fresh graduates with technical background, trainer, rail technician/operator and supervisor involved in rail maintenance
- Track works for maintenance personnel
- Maintenance supervisor
- Engineer

Objectives

Certified personnel should be able to:

- Professionally perform the thermit welding task as required by the industry.
- Monitor and supervise the works related to the thermit welding and has the criteria of a competent practitioner.

Examination topics

- Introduction to thermit welding
  - » Equipment (familiarization)
  - » General usage
- Safety awareness
  - » Safety precautions
  - » Safe work practices (do n don’t)
  - » Safety with gases
  - » Safety apparel and equipment
- Rail cutting setting
  - » Dismantle old rail and insert new rail
  - » Rail fixing
- Rail end preparation and rail alignment
- Installation
  - » Install universal mounting
  - » Fixing the mould
  - » Luting the mould
  - » Install slag bowl
- Preheat
  - » Preheat rail end and mould

  - » Placing crucible
  - » Ignition
  - » Shearing
- Clearing
  - » 7.1 Clearing the riser
  - » 7.2 Grind smooth the welding
  - » 7.3 Finishing

Examination format

The exam/assessment consist of the following format:

a) Theory paper – to complete answering knowledge assessment (includes 13 multiple choice and seven subjective questions) within 1 hour 30 minutes.
b) Practical (hands-on) assessment 1 – Rail alignment – Demonstrate the correct procedure for rail alignment using Steel Wedges and A Frames Shearing Machine
c) Practical (hands-on) assessment 2 – Cutting and welding gap process – Using gas or saw
d) Practical (hands-on) assessment 3 – General welds set up procedures – Demonstrate weld set up procedures.
e) Practical (hands-on) assessment 4 – Rail end preparation – Identify oxygen/fuel gas cylinders safety precautions, using oxygen/fuel gas and rail disc saw, cutting rail cleaning the rail ends and demonstrate the four uses of weld setting gauge.
f) Practical (hands-on) assessment 5 – Complete weld set up working steps – Carry our preheating process and set up crucible components and loading of the Thermit Welding portion.
g) Practical (hands-on) assessment 6 – Demonstrate Instruction Preliminary and Final grinding – Install Thermit cast weld metal and implement correct procedures for removal of equipment
h) Practical (hands-on) assessment 7 – Profile grinding & weld finish – Carry out weld profile grinding operations to specified tolerances

Examination duration

Theory examination – 1 hour 30 minutes
Practical assessment – 1 day

Examination fee

As specified on the IMM website.

Candidate's criteria

Candidate should have

- Minimum academic qualification - SPM or equivalent* AND
- Minimum 5 years working experience at the site in a job that related to rail changing/joining AND
- Fit-for work for Track network site AND
- Able to read and understand in English

*Candidate fulfills the minimum academic qualification but without field experience in thermit welding is considered as a candidate without experience.

Pre-requisite training

A candidate without experience is required to attend IMM approved/recognized training course which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

A candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification

Successful in all the following below parts,

a) Theory test – achieve minimum 80% marks, paper to be marked by the assessor.
b) Practical (hands-on) assessment – passed as competent.
c) Practical on-site job – complete 15 times joining job performing without fail (passed as competent by the assessor)

Certificate awarded

IMM Certified Thermit Welding Practitioner (Level 1)

Validity period of certificate

3 years

Re-sit of examination

A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification

6 months prior to the expiry of certification (at the end of the 3rd year of certification), the candidate can apply for re-certification for another 3 years by

- sitting for an examination (theory paper only)
- providing proof to IMM that he/she has been employed in handling the thermit welding job routine (testified by the project manager or human resource/training/learning manager of the candidate) for at least 15 times joining without fail in the last 3 years; and

Prior to the expiry of the 3-year re-certification (at the end of the 6th year of certification), the candidate can continue to be certified for a further 3-year period by

- sitting for the exam/assessment, as follows;
  (a) Examination paper – Achieve minimum 80% mark
  (b) Practical (hands-on) assessment – Passed as competent

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 12 months continuously during the 3-year certification or re-certification period.

IMM Welding Certification Scheme

IMM Certified Thermit Welding Senior Practitioner (Level 2)

Code: TWSP *HRDF claimable*

This specialised competency program on Thermit Welding Senior Practitioner Level 2 has been developed to fulfill the requirement of competency skills for track workers in performing and supervising the maintenance activities for achieving optimum operation.
Upon completion of this competency participants will be able to:

- Identify, advise and assemble welding components
- Identify and understand the thermit welding equipment and able to give instruction on the tools to carry out the process
- Understand, identify and can advise the operational flows in order to carry out the process in a safe and efficient manner
- Effectively and quality in preparation and also can give good advice or instruction on Thermit welding works to subordinated
- Enhance in technical maintenance skill and knowledge as a supervisor
- Perform the best practice of thermit welding
- Understand and able to perform the job scope of a supervisor
- Justify the quality of joining and the job that is related to thermit welding.

Reference standards (reference used shall refer to the latest published document):

- TBA

Who should apply

Supervisors, professional practitioners or any personnel with related work experience and/or has been certified with IMM Certified Thermit Welding Practitioner Level 1 certification.

Objectives

Certified personnel should be able to:

- Professionally perform the thermit welding task as required by the industry.
- Monitor and supervise the works related to the thermit welding and has the criteria of a supervisor.

Examination topics

- Identify thermit welding components
  - » General usage
  - » Advice and assemble welding components
- Safety awareness
  - » Safety precautions
  - » Safe work practices (do n don’t)
  - » Safety with gases
  - » Safety apparel and equipment
- Identifying and understanding the thermit welding equipment
  - » Tools used to carry out the process
  - » Instruction on the usage of the tools
- Rail cutting setting
  - » Dismantle old rail and insert new rail
  - » Rail fixing
- Rail end preparation and rail alignment
- Installation
  - » Install universal mounting
  - » Fixing the mould

  - » Luting the mould
  - » Install slag bowl
- Preheat
  - » Preheat rail end and mould
  - » Placing crucible
  - » Ignition
  - » Shearing
- Clearing
  - » Clearing the riser
  - » Grind smooth the welding
  - » Finishing

Examination format

The exam/assessment consists of the following format:

- Theory (Written): 13 multiple choice and 7 subjective questions.
- Practical (hands-on) assessment: Prepare rail to be welded by setting the weld gap, applying mould and pour thermit portion into the crucible, preheat end of the rails, ignite and pour steel, demolding and grinding process.

Examination duration

Theory examination – 2 hours and 30 minutes
Practical assessment – 2 days

Examination fee

As specified on the IMM website.

Candidate's criteria

Candidate should have

- Valid IMM Certified Thermit Welding Practitioner (Level 1) AND
- Minimum 5 years on-site working experience related to rail changing/joining AND
- Fit-for work for Track network site AND
- Able to read and understand in English

Pre-requisite training

A candidate without experience is required to attend IMM approved/recognized training course which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

A candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification

Successful in all of the following:

- Passing criteria for Theory Examination Minimum: 70%
- Passing criteria for Practical Assessment Minimum: 80%

Certificate awarded

IMM Certified Thermit Welding Senior Practitioner (Level 2)

Validity period of certificate

3 years

Re-sit of examination

A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification

6 months prior to the expiry of certification (at the end of the 3rd year of certification), the candidate can apply for re-certification for another 3 years by

- sitting for an examination (theory paper only)
- providing proof to IMM that he/she has been employed in handling the thermit welding job routine (testified by the project manager or human resource/training/learning manager of the candidate) for at least 15 times joining without fail in the last 3 years.;

Prior to the expiry of the 3-year re-certification (at the end of the 6th year of certification), the candidate can continue to be certified for a further 3-year period by

- sitting for the exam/assessment, as follows:
  (a) Examination paper – check format Achieve minimum 70% mark
  (b) Practical (hands-on) assessment – Passed as competent

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

IMM Welding Training Course

Repair Welding of Pressure Equipment in Refineries & Chemical Plants Course

Code: RWPE *HRDF claimable*

Plant facilities and equipment will degrade after installation and commissioning due to service and environmental conditions. Damage by corrosion, erosion, wear, and cracking may occur while the plant and equipment are in service. The repair of damaged parts of plant facilities and equipment by welding, using a special welding process, specified welding consumables and specified procedures is a widely accepted method of preserving the integrity of plant facilities and equipment. Asset owners' overall replacement costs can be minimised by repair welding.

Reference standards (reference used shall refer to the latest published document):

- TBA

Who should apply

This course should be of great interest to owners of process plants, pressurised equipment, pressure pipelines, and similar facilities who need to maintain the functional integrity of their plant and equipment during the lifetime of the plant and equipment post-installation.

This course is specifically targeted at asset integrity and quality assurance staff/personnel involved in the maintenance, repair and overhaul of welded plant facilities and equipment. It is recommended to participants from petroleum refineries, petrochemical and chemical and related industries, including:

- Welding engineers
- Welding Non-Destructive Testing (NDT) personnel
- Welding supervisors
- Welding lecturers and trainers
- Welding inspectors
- International Institute of Welding (IIW)/JWES welding engineers

Objectives

This course is about the repair of welding for the wear and erosion (thinning) of pressure and process equipment and also includes the repair of cracks.

Course topics

1. Design and fabrication of pressure equipment
2. Metallic materials degradation in pressure equipment and their countermeasures
3. Post-construction codes
4. Guidelines for repair welding of pressure equipment
5. Repair welding methods
6. Repair welding for carbon steels and Cr-Mo steels
7. Repair welding for stainless steels and nickel alloys
8. Corrosion problems and repair welding
9. Aged metallic materials and repair welding

Course duration

2 days

Pre-requisite(s)

No previous working experience is required.

Certificate awarded

Certificate of attendance

IMM Welding Training Course

Welding & Joining Technology for Non-Welding Personnel Course

Code: WJT *HRDF claimable*

This is a one-day Welding Technology Course for Engineering Management Personnel, designed for both practicing engineers and technical managers as well as those interested in keeping abreast with the current welding technologies.

The course is beneficial for those who wish to gain an understanding of how a Welding Procedure Specification (WPS) and a welder, through the Welder Qualification Test (WQT), are qualified and certified in the oil and gas industry, and also addresses the effectiveness of current non-destructive examination techniques as quality control tools to ascertain that quality welds are consistently produced/maintained.

Through this course, managers and engineers who wish to gain an appreciation for managing Weld Procedure Specification (WPS)/Welder Qualification Test (WQT) will be able to broaden their technical knowledge on welding technology related to the maintenance, inspection, alteration and repair of in-service metallic systems in order to avoid an unplanned shutdown and reduce expenses. This knowledge will enable them to make informed decisions on the acceptance of WPS/WQT during welding production and metallic fabrication work.

Reference standards (reference used shall refer to the latest published document):

- TBA

Who should apply

This course is most beneficial to administrative staff, technical management personnel of all levels including junior and senior engineers, inspectors, designers, manufacturers, fabricators, technical managers and practicing engineers who are involved in the management and planning of welding and inspection related activities as well as maintenance activities in upstream oil & gas

Objectives

To understand and acquire an appreciation of the following topics:

1. Welding technologies and the requirements necessary for safe design and construction
2. Key activities in quality control of welding and the key welding coordination activities
3. Responsibilities of welding co-ordination and the application of ISO 3834 "Quality Requirements for Welding".

Course topics

1. Introduction and welding quality
2. Welding procedure qualification
3. Welding processes and inspection
4. Materials and weldability
5. Welder qualification

Course duration

1 day

Pre-requisite(s)

No previous working experience is required.

Certificate awarded

Certificate of attendance

IMM Welding Training Course

Steel Technology for Non-Technical Personnel Course

Code: STNT *HRDF claimable*

Steel finds application in many diverse industries such as automotive, shipbuilding, fabrication, pipelines, structural buildings and even surgical instruments. The types of steel used have properties that meet the specific functions and purposes of a product. A good understanding and appreciation of steel will provide learners with higher confidence, preparedness and the ability to more accurately resolve matters that relate to the end product. Participants in this 2-day program will benefit much from the fundamental concepts of steels and the selection process including the adequate protection of materials of construction and the fundamental concepts of corrosion control.

Reference standards (reference used shall refer to the latest published document):

- TBA

Who should attend

This appreciation course is most beneficial to technical management personnel of all levels including junior and senior engineers, inspectors, designers, manufacturers, fabricators, technical managers and practicing engineers who are involved in the management and planning of welding and inspection-related activities as well as maintenance activities in upstream oil & gas facilities, refineries, process plants and petrochemical facilities.

Objectives

1. Identify & select correct steel materials for building components for specific tasks based on the requirements, constraints and material properties
2. Interpret materials data (specification sheets) to determine their suitability
3. Identify the properties of materials for specific tasks within given parameters

Course topics

1. Introduction of engineering materials
2. Designations and specification of metals
3. Heat treatment of steels
4. High-strength steels
5. Impact of welding parameters
6. Weld defects
7. Weldability and welding cracks
8. Ferritic, super ferritic, martensitic, austenitic, super austenitic, duplex, super duplex, precipitation hardenable stainless steels
9. Welding of stainless steels
10. Corrosion resistance of stainless steels

Course duration

2 days

Pre-requisite(s)

No previous working experience is required.

Certificate awarded

Certificate of attendance

TRAINER/ EXAMINER PROGRAMS

IMM Trainer/Examiner Certification Scheme

Certified Trainer/Examiner

Code: CTRA *HRDF claimable*

This is a certification program to qualify trainers/examiners for the IMM Training/Certification programs. The certification program is specially designed to assess trainers/examiners and would-be trainers/examiners on their skills for training others and assessing others for competency evaluation.

Reference standards (reference used shall refer to the latest published document):

- TBA

Who should apply

This certification program is for trainers/examiners and subject matter experts who are interested in training/assessing candidates for IMM Training/Certification programs. This program will particularly benefit managers, subject matter experts including those with no training/assessment experience who need to understand the soft skills required for training/assessment to complement their technical expertise.

Objectives

The objective of this certification program is to assess and certify potential trainers/examiners on the knowledge and skills required in training and assessing persons related to IMM certification program(s).

Examination topics

- Role play as trainer for lecture:
  - » non-verbal skills
  - » verbal and language fluency skills
  - » presentation content (knowledge and organization)
  - » handling Q&A session
- Practical demonstration:
  - » non-verbal skills
  - » verbal skills
  - » instrumentation (knowledge and skills)
  - » handling Q&A session.
- Role play as examiner for assessing trainees:
  - » non-verbal skills
  - » verbal and language fluency skills
  - » assessor competency (assessment development and feedback)
  - » handling Q&A session.
- Interview:
  - » knowledge & understanding
  - » application to practice
  - » interpersonal skills

Examination format

The candidates will be assessed and evaluated by the assessor on their techniques in coaching/lecturing/assessment, handling practical demonstration and Q&A session on related to course of their choice and expertise.

The candidate will then be interviewed on their understanding of the topics taught/assessed in the course/certification program selected.

Examination duration

Examination will be based on:

- 30 – 45 minutes: Role-play as a trainer for lecture and handling Q&A session – 25%
- 30 – 45 minutes: Practical demonstration (can be in the form of the physical classroom, mixed reality, simulation, video *etc*) – 25%
- 30 – 45 minutes: Role-play as an examiner for practical and theoretical evaluation using the developed rubrics/assessment materials (can be in the form of physical examination hall, mixed reality, simulation, video *etc*) – 25%
- 10 – 15 minutes: Interview – 25%

Examination fee

As specified on the IMM website.

Candidate's criteria

Candidate shall have:

- Valid IMM certification or equivalent (such as NACE/SSPC) in the specific certification program and with at least 5-year working experience in the relevant field.

Pre-requisite training

A candidate without experience is required to attend IMM approved/recognized training course which prepares and provides comprehensive guidance and practices aligned to the topics covered in the examination.

A candidate with experience is encouraged to attend IMM approved/recognized training course.

Criteria for certification

The candidate must pass the examination with a minimum mark of 70% for each of the components – lecture & examination; practical demonstration and interview.

Certificate awarded

IMM Certified Trainer/Examiner for …… (Certification Program)

NOTE:

1. The candidate who passes the examination of a specific level can be appointed as trainer/examiner of that specific level and lower level(s).

Validity period of certificate

5 years

Re-sit of examination

A candidate who had failed in one or more of the examination parts can apply to re-sit for the failed component(s) of the examination within a year from the date of the last examination. The candidate shall have to pay the full examination fee for the re-sit and without the need to attend any pre-requisite training course.

Information on re-certification

6 months prior to the expiry of certification (at the end of the 5th year of certification), the candidate can apply for re-certification for another 5 years by providing proof to IMM that he/she has been employed in a related profession.

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), the candidate can continue to be certified for a further 5-year period by

- providing proof to IMM that he/she has been employed in a related profession; and
- attending the relevant Refresher Course for certification (if any).

The candidate must re-sit the certification examination if he/she has been out of the profession for more than 18 months continuously during the 5-year certification or re-certification period.

TESTIMONIALS FROM IMM CERTIFIED AND TRAINED PERSONNEL

IMM Protective Coating Technician Level 2

"This course taught me how to properly perform the surface preparation and painting job application. My advice to others who have not yet gone for this training and get your competency certificate, please do so as it will tell you on how to your work professionally and improve your hourly rate of salary"

Freelance Blaster and Painter

IMM Coating Inspector Level 1

"This program really helped me in clearing my questions and doubts whenever I have in mind when I do my QA&QC job at worksite. After getting my certificate, my salary also increased"

Freelance QAQC Inspector

IMM Certified Coating Fingerprint Quality Controller Level 1

"The training program was incredibly good in gain my skills and knowledge especially on coating fingerprint. I think I will promote this program to my friends in Indonesia"

PT PPG Coating Indonesia

"Overall, this course provides a platform for me to meet people from various area. From here, I can get opinions and see from different perspective about the Coating Fingerprinting. The outcomes of this course are well presented"

Universiti Teknologi MARA

IMM Corrosion Technician Level 1

"I have work experience for few years, but I never had any competency certificate before. Then, I went to take the IMM Corrosion Technician course and I found it very interesting and helped me to understand more about my role and responsibility. It also gave more value to me as I can now demand higher salary for any employer want to hire certified personnel."

Freelance Corrosion Technician

IMM Certified Cathodic Protection Technician Level 1

"I am very grateful to the trainer. His explanation very clear and easy to understand. I hope we will improve our self-skill and knowledge in Cathodic Protection"

Velosi (M) Sdn Bhd

"Attended IMM Certified Cathodic Protection Technician Level 1. It was excellent session with highly knowledgeable trainer"

PT Natgas Indonesia

IMM Vibration Practitioner Category 1

"This program exposes and helps me in improving my knowledge on how to operate the and use the related equipment as well as data monitoring and analysing. I would encourage new or fresh graduates to enrol for this Cat 1 program"

Serba Dinamik Group Berhad

IMM Certified Welding Inspector

"Thank you for organizing such a great training. The trainer was truly knowledgeable. It helps me to understand well about welding inspection"

PETRONAS Carigali Turkmenistan

FREQUENTLY ASKED QUESTIONS ABOUT IMM TRAINING & CERTIFICATION SCHEMES

What is IMM?

The Institute of Materials, Malaysia (IMM) is a non-profit professional society (registered with the Registrar of Societies since 1987) that promotes honorable practice, professional ethics and encourages education in materials science, technology and engineering. Engineers, academicians, technicians, skilled workers and professionals are amongst its members exceeding 5,000.

One of the key objectives of IMM include the training and development of individuals and companies in Malaysia to attain certification and professional recognition in materials science, technology and engineering covering various disciplines such as coatings, corrosion, welding, vibration, asset integrity, insulation, polymers and materials fingerprinting. IMM also promotes research and development in these fields in addition to facilitating and encouraging collaboration between the industrial sectors, research institutes and universities.

IMM is administered by a council of 30 members with volunteers who are experts in various fields leading 24 expert committees, and 4 regional chapters, supported by a secretariat staff.

IMM's certification courses are well recognized and endorsed in the oil and gas, shipbuilding and construction industries. Over the years, personnel from these industries have been trained and certified. They include, amongst others, blasters and painters, coating inspectors, welding engineers, welding inspectors, corrosion technicians, cathodic protection technologists, vibration practitioners and coating fingerprint quality controllers. These courses are organised by authorised training bodies (ATBs) and associate training partner (ATP).

What are the IMM certification programs?

IMM offers various certification schemes and training courses ranging from Coating to Welding. Full complete list can be found at https://www.iomm.org.my/list-of-training-certification-programs/.

Why do I require to be a IMM certified personnel?

IMM-approved training courses and the related certification programs are designed to equip workers with the skills and knowledge for entry into the industrial sector. The IMM certification provides proof and assurance to prospective employers that the certified persons have reached a given level of proficiency in a particular field.

Is IMM certification scheme a requirement in the Oil & Gas industry?

IMM's competency training and certification programs are well recognised in the Oil & Gas industry and IMM certification have been listed as a requirement in the technical/work specifications by leading Oil & Gas companies such as PETRONAS and Shell.

If my current IMM certification has expired or is about to expire, can I still be recertified?

All IMM certified personnel are required to be recertified before the expiry date of their competency certificates and can apply for re-certification for another cycle of certification. Period of certification and re-certification vary from each certification scheme. Please refer to each certification scheme document for more information on re-certification.

What are the minimum requirements to obtain IMM certification?

Each certification requires different sets of candidate's criteria and pre-requisite training. Please refer to each certification scheme document for more information.

How do I register myself for IMM course and assessment?

Those interested can contact the IMM Secretariat or the ATBs in your region or ATP or authorize testing centre (ATC) to get the registration form and further guidelines and information, if required. You may visit the IMM website www.iomm.org.my for a listing of the ATB/ATP/ATC and the related courses.

Are IMM courses available in two languages English and Bahasa Malaysia?

The courses in Malaysia will be conducted in dual languages, English & Bahasa Malaysia.

If I have already been certified by IMM, how long will my certification still be valid?

Validity of IMM competency certificates varies among the certification programs. Please refer to each certification scheme document for more information.

Can I be certified in multiple competencies?

Yes, a person can be certified as competent person in multiple IMM certification programs.

How much does the IMM certification program cost?

The training fees charged by the ATBs/ATPs will not exceed the maximum of RM1,000 per course-day and may vary with the ATBs/ATPs. For details, please contact the training bodies. List of the training bodies can be found here https://www.iomm.org.my/imm-authorised-training-bodies-atbs-authorised-testing-centre-atc-and-associate-training-partner-atp/.

The assessment/examination fee vary in each certification programs. Please refer to each certification scheme document for more information.

If I fail in the Assessment, can I re-sit? If yes, how many times can I re-sit the Assessment?

Candidates who had failed the examination can apply and re-sit for the failed component (blaster or painter or both) within 12 months from the date of their last examination. The full examination fee shall be payable to re-sit the examination, and without the need to attend any training course. The candidate can re-sit as many times as he wishes.

What society membership do I get with the IMM certification?
Included in the certification is a corresponding IMM membership.

Who should I contact to register for IMM Certification Program?

Interested candidates can contact the IMM Secretariat as follows:

Institute of Materials, Malaysia
Suite 1006, Level 10, Block A,
Kelana Centre Point
No.3, Jalan SS 7/19,
Kelana Jaya, Petaling Jaya,
47301 Selangor

Email: secretariat@iomm.org.my
Website: www.iomm.org.my
Call/WhatsApp: +6018 9113 480

IMM TRAINING & CERTIFICATION SCHEMES 2023/2024

Training & Certification Needs for Industrial Skillsets

For the most up-to-date information, visit

www.iomm.org.my

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