



Institute of Materials, Malaysia

IMM Coating Fingerprint Certification Scheme

Certified Coating Fingerprint Quality Controller Level 1

Code: FP1

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 (FPQC) 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 FPQC will be engaged by the (sub-)contractors / auditors / owners to review the Coating Fingerprint Certificate submitted to the job site. An FPQC can be employed to carry out on-site authentication FTIR analysis on paints using mobile or handheld equipment for quality assurance (QA) purpose or in a 3rd-party laboratory to perform QA FTIR analysis.

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

- 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 scheme 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.

Objective

The objective of this certification scheme 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 Certificate issued by the persons certified as IMM Coating Fingerprint Quality Controller Level 1 will be recognized by both client and contractor.

Exam 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 FTIR method for coating fingerprinting
- Basic introduction to FTIR hardware: desktop, mobile and handheld



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Exam topics (*cont'd.*)

- 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

Exam format

The exam/assessment paper consists of 100 – 120 multiple choice questions

Exam duration

100 min or less

Candidate's criteria

Candidate shall possess the following criteria:

- Has attended the IMM Coating Fingerprint Foundation AND with minimum 6-month related work experience; OR
- Has been 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.*]

Pre-requisite training

Candidate without experience is required to attend related training course (such as the 2-day training course recognized by IMM), which prepares and provides comprehensive guidance and practice aligned to the topics covered in the examination.

Candidate with experience is encouraged to attend an appropriate training course (recognized by IMM).

IMM CPD points

The candidate is entitled for 56 IMM CPD points if he/she attended the 2-day training course recognized by IMM (*7 activity hours x 2 days x 4 weightage factor*).

Criteria for competency

Successful in the examination with a minimum pass mark of 70%

Certificate awarded

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Certificate awarded (cont'd.)

Candidate will also be authorised 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 fingerprint to any person, company or authority in Malaysia.



Figure 1

Validity period of certificate

5 years

Information on re-certification

6 months prior to expiry of certification (at the end of the 5th year of certification), 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
- accumulating sufficient Continuing Professional Development (CPD) points*.

Prior to the expiry of the 5-year re-certification (at the end of the 10th year of certification), 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;
- accumulating sufficient CPD points*; 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.

**The minimum number of CPD Points to be accumulated over a 5-year period shall be 100 points with an annual requirement of at least 10 points.*