



INSTITUTE OF CORROSION (ICorr)

Classroom REQ-DOC

Appendices to ICorr classroom REQ-DOC for the Training and Certification of personnel engaged in Surface Coating and Lining Inspection and related fields undertaken in Onshore, Offshore and the Marine Industries 6th Edition August 2019

Appendix A

Syllabus for Training and Examinations

Protective Coating Inspector

This syllabus has three levels, Level 1, Level 2 and Level 3 and each level is divided into pre-learning (Blended Learning on-line), classroom learning (Theory) and practical sessions.

It is required that each of the candidate's knowledge of the pre-learning topics be assessed online during the on-line study and by the Tutor at the start of the classroom session.

Good Health and Safety practice is of paramount importance and the relevant issues must be stressed for each topic.

Level 1

Pre-learning

1 Quality assurance philosophy

2 Ethics

3 Inspection

3.1 Philosophy

4 Normative documents

4.1 Awareness of types of normative document

5 Corrosion (iron & steel)

5.1 Nature of corrosion

5.2 Factors influencing corrosion

5.3 Effects of scale and contamination

5.4 Methods of corrosion prevention

5.5 Assessment of corroded substrates

6 Surface preparation of non-ferrous surfaces (awareness)

6.1 Methods used

6.2 Precautions

6.3 Weathering for adhesion purposes

6.4 Concrete

6.5 Galvanised steel

7 Coating categories/types

7.1 Paints containing solvent (including water)

7.2 Solvent free paints



- 7.3 Powder coatings
- 7.4 Metallic coatings
- 7.5 Tapes and wrappings
- 7.6 Compatibility issues

8 Basic paint

- 8.1 Binders
- 8.2 Types
- 8.3 Polymers/polymerisation
- 8.4 Resins and oils
- 8.5 Pigments
- 8.6 Resins
- 8.7 Rust inhibitive pigments
- 8.8 Solvents
- 8.9 Other main constituents
- 8.10 Solutions and dispersions

9 Imperfections on surfaces to be coated

- 9.1 Types (awareness)
- 9.2 Hot rolled products
- 9.3 Wrought products
- 9.4 Welds
- 9.5 Significance
- 9.6 Action to take
- 9.7 Surface preparation standards

10 Corrosion protection methods

- 10.1 Barrier principle
- 10.2 Passivation
- 10.3 Cathodic protection

11 Paint/paint film testing

- 11.1 Sampling
- 11.2 Flashpoint
- 11.3 Viscosity
- 11.4 Density and specific gravity

12 Environmental considerations (introduction)

- 12.1 Waste disposal
- 12.2 Environmental protection act
- 12.3 VOC
- 12.4 Spillages
- 12.5 Hazardous materials

Classroom learning (Theory)

13 Inspection

- 13.1 Duties and authority including reporting on non-conformances
- 13.2 Procedures and written instructions
- 13.3 Specifications
- 13.4 Painting inspection planning
- 13.5 Meetings including pre-project meetings
- 13.6 Typical contractor malpractice
- 13.7 Normative documents
- 13.8 Information contained within normative documents
- 13.9 Specific standards, including ISO 12944 and NORSOK 501

14 Surface preparation (ferrous)

- 14.1 Reasons for surface preparation
- 14.2 Characteristics of prepared surfaces
- 14.3 Hazard awareness
- 14.4 Weathering for scale removal
- 14.5 Assessment of surfaces prior to cleaning
- 14.6 Methods of surface preparation
 - 14.6.1 Degreasing
 - 14.6.2 Dry abrasive blast cleaning
 - a. Abrasive types including classroom examples
 - b. Effect of abrasives
 - c. Surface profiles
 - d. Measurement and assessment of profiles
 - e. Assessment of cleanliness, rust, dust, soluble salts, oils and grease
 - f. Assessment of blast cleaning grades
 - g. Blast cleaning equipment
 - i. Pressure blast cleaning



- ii. Wheel abrators
 - iii. Vacuum/suction blast cleaning
 - h. Safety of blast cleaning operations
 - I. Pressure measurement during air blast cleaning
 - 14.6.3 Wet blast cleaning
 - a. Methods
 - b. Use of inhibitors
 - 14.6.4. Hand and power tool cleaning
 - a. Chipping
 - b. Scraping
 - c. Sanding
 - d. Grinding
 - e. Wire brushing
 - f. Needle gunning
 - 14.6.5 Flame cleaning
 - 14.6.6 Chemical cleaning
 - 14.6.7 Assessment of prepared surfaces
- 15 Tests to detect surface contamination (qualitative)**
- 15.1 Dust
 - 15.2 Oil/grease
 - 15.3 Soluble iron salts
 - 15.4 Mill scale
 - 15.5 Use of magnifiers
- 16 Paint drying and curing**
- 16.1 Solvent evaporation
 - 16.2 Oxidation
 - 16.3 Chemical curing
 - 16.4 Coalescence
- 17 Layers of a paint system**
- 17.1 Etch primers (coupled to surface preparation)
 - 17.2 Primer
 - 17.3 Intermediate coats
 - 17.4 Finish
- 18 Types of protective paint systems**
- 18.1 Sacrificial systems
 - 18.2 Powder coatings
 - 18.3 Moisture tolerant
 - 18.4 Moisture curing
 - 18.5 Water borne coatings
- 19 Introduction to coating systems**
- 19.1 Powder coatings
 - 19.2 Liquid solvent borne coatings
 - 19.3 Water borne coatings
 - 19.4 Fireproof coatings
 - 19.5 Anti-foulants
 - 19.6 Plastic coatings
 - 19.7 IMO ballast tank requirements
- 20 Metal coatings**
- 20.1 Common types
 - 20.2 Terminology
- 21 Paint data sheets**
- 22 Paint milling (awareness)**
- 23 Paint/paint film testing**
- 23.1 Wet film thickness
 - 23.2 Dry film thickness
 - 23.2.1 Non-destructive gauges (Ferrous steel substrates and NF non-ferrous metal substrates – mechanical and electronic)
 - 23.2.2 Adjustment and verification
 - 23.2.3 Awareness of destructive test gauges
 - 23.2.4 Calculation
 - 23.2.5 Test panels
 - 23.3 Hardness tests
 - 23.3.1 Awareness of test methods
 - 23.3.2 Pencil scratch test
 - 23.4 Adhesion/cohesion
 - 23.4.1 V Cut test
 - 23.4.2. X cut tape test
 - 23.4.3 Cross cut test
 - 23.4.4 Pull-off test using dollies



- 23.5 Pinhole detection
 - 23.5.1 High voltage
 - 23.5.2 Low voltage
- 24 Weather conditions and environment**
 - 24.1 Types of environment
 - 24.2 Effects on operations
 - 24.3 Relative humidity determination dew point
 - 24.4 Temperature effects and measurement
 - 24.5 Whirling hygrometer
 - 23.5.1 RH/dew point calculator
 - 23.5.2 RH/dew point charts
 - 24.6 Electronic dew point meter
 - 24.7 Electronic data collection
- 25 Storage of materials**
- 26 Paint application**
 - 26.1 Paint data sheets
 - 26.2 Materials safety data sheets (MSDS)
 - 26.3 Mixing and stirring
 - 26.4 Overcoating times
 - 26.5 Intercoat preparation
 - 26.6 Brush application
 - 26.7 Roller application
 - 26.8 Conventional spray
 - 26.9 Airless spray
 - 26.10 Electrostatic spray
 - 26.11 Other methods
- 27 Application coating faults (Defects)**
 - 26.1 Recognition
 - 26.2 Causes
 - 26.3 Rectification (awareness)
 - 26.4 Standards
- 28 IMO Coating technical file**
 - 27.1 Coating technical file requirements
 - 27.2 Working records
- 29 Health & Safety**
 - 29.1 Health & safety at work etc. Act 1974
 - 29.2 Toxicity
 - 29.2.1 COSHH regulations
 - 29.2.2 Risk assessment
 - 29.2.3 Occupational exposure limits
 - 29.2.4 Monitoring methods
- 29.3 Explosive limits
- 29.4 Flammability
- 29.5 Labelling and packaging
- 29.6 Confined spaces
- 29.7 Working at height
- 30 Reporting**
 - 30.1 Observations and test results
 - 30.2 Basic statistics
 - 30.3 Daily record
 - 30.4 Electronic data management
- 31 Conflict resolution (basics)**
- 32 Relevant information**
- 33 Standards applicable**
- 34 Practical Learning**

(All these topics are covered in the classroom theory topics but also require either demonstration of hands-on training)

 - 34.1 Blast pressure measurement
 - 34.2 Profile height
 - 34.3 Profile cleanliness
 - 34.3.1 Dust
 - 34.3.2 Oil/grease
 - 34.3.3 Soluble iron salts
 - 34.3.4 Mill scale
 - 34.4 Relative humidity
 - 34.4.1 Whirling and sling hygrometers
 - 34.4.2 Electronic dew point meters
 - 34.4.3 Mechanical thermometers
 - 34.4.4 Electronic thermometers
 - 34.5 Wet film thickness measurement (wet film wheel, wet film comb)
 - 34.6 Dry film thickness measurement
 - 34.6.1 Non-destructive gauges (Ferrous steel substrates and



- NF non-ferrous metal substrates
 - mechanical and electronic
- 34.6.2 Adjustment and verification
- 34.7 Destructive test gauges (PIG)
- 34.8 Hardness tests (Demonstration)
 - 34.8.1 Awareness of test methods
 - 34.8.2 Pencil scratch test
- 34.9 Adhesion/cohesion
 - 34.9.1 V cut test
 - 34.9.2 X cut test
 - 34.9.3 Cross cut test
 - 34.9.4 Pull-off test using dollies
- 34.10 Pinhole detection
 - 34.10.1 Low voltage
 - 34.10.2 High voltage

Level 2

The level 2 training syllabus shall review the subject areas for level 1 and include new subject areas as listed. The examination for level 2 shall include questions relating to subjects for level 1 in addition to the subjects listed for level 2. Any subjects that are repeated indicate a greater depth of knowledge is required compared to Level 1.

Pre-learning

35 Corrosion

- 35.1 Nature of corrosion
- 35.2 Anodic and cathodic reactions
- 35.3 Factors influencing corrosion
- 35.4 Types of corrosion

36 Basic chemistry

37 Design

- 37.1 Design for corrosion resistance
- 37.2 Good, poor design examples

38 Paint manufacture

39 Paint/paint film testing

- 39.1 Viscosity
- 39.2 Density
- 39.3 Weathering and artificial weathering

40 Cathodic protection

- 40.1 Basic principles and methods
- 40.2 Buried pipeline
- 40.3 Immersed marine
- 40.4 Ballast tank
- 40.5 Determination of adequate protection

41 Health & Safety

- 41.1 COSHH regulations
- 41.2 Workplace exposure limits
- 41.3 Health and safety data sheets

42 Glossary of terms

Classroom learning

43 Surface preparation

- 43.1 Importance of surface preparation
- 43.2 Weathering for scale removal
- 43.3 Methods of surface preparation
 - 43.3.1 Degreasing
 - 43.3.2 Dry abrasive blast cleaning
 - 43.3.3 Wet blast cleaning
 - 43.3.4 Waterjetting
 - 43.3.5 Hand and power tool preparation
- 43.4 Flame cleaning
- 43.5 Chemical cleaning
- 43.6 Surface preparation of non-ferrous surfaces
- 43.7 Profile measurement

44 Dehumidification

45 Tests to detect surface contamination

- 45.1 Soluble salts
- 45.2 Soluble salts in abrasives and water
- 45.3 Millscale
- 45.4 Oil/grease
- 45.5 Dust

46 Paint constituents

- 46.1 Binders
- 46.2 Pigments



- 46.3 Pigment volume concentration
- 46.4 Solvents
- 46.5 Other main constituents
- 47 Painting drying and curing**
 - 47.1 Solvent evaporation
 - 47.2 Oxidation
 - 47.3 Chemical curing
 - 47.4 Coalescence
- 48 Corrosion protection methods using protective coatings**
- 49 Coating systems**
 - 49.1 Powder coatings
 - 49.2 Liquid solvent borne coatings
 - 49.3 Water borne coatings
 - 49.4 Fireproofing coatings
 - 49.5 Anti-foulants
 - 49.6 Plastic coatings
 - 49.7 IMO Ballast tank coating requirements
- 50 IMO Coating technical file**
 - 50.1 Coating technical file requirements
 - 50.2 Coating selection, specifications
 - 50.3 Working records
- 51 Paint/paint film testing**
 - 51.1 Wet film thickness
 - 51.2 Dry film thickness
 - 51.3 Mechanical testing
 - 51.4 Adhesion
 - 51.5 Porosity detection
- 52 Weather conditions and environment**
 - 52.1 Relative humidity
 - 52.2 Dew point
 - 52.3 Temperature effects and measurements
- 53 Application of metal coatings**
 - 53.1 Common Types
 - 53.2 Terminology
- 54 Paint data sheets**
- 55 Paint application**
 - 55.1 Brush application
 - 55.2 Roller application
 - 55.3 Conventional spray
 - 55.4 Airless spray
 - 55.5 Electrostatic spray
 - 55.6 Other methods
- 56 Paint colours**
- 57 Coatings faults**
 - 57.1 Recognition
 - 57.2 Causes
 - 57.3 Recertification
 - 57.4 Degrees of coating failure
- 58 Inspection**
 - 58.1 Duties of a painting inspector
 - 58.2 Knowledge required to perform painting inspection
 - 58.3 Inspection planning
 - 58.4 Site meetings
 - 58.5 Reports and records
 - 58.6 Typical contractor malpractice
- 59 Written instructions**
- 60 Quality assurance**
 - 60.1 Scope of quality assurance
 - 60.2 QA, QC and inspection compared
 - 60.3 Normative documents
 - 60.4 Conflict resolution
- 61 IMO specifications**
 - 61.1 IMO PSPC MSC.215 (82)
 - 61.2 IACS PR34
- 62 Practical learning**
 - 62.1 Blast pressure measurement
 - 62.2 Profile height
 - 62.3 Profile cleanliness
 - 62.5.1 Dust
 - 62.5.2 Oil/grease
 - 62.5.3 Soluble iron salts
 - 62.5.4 Mill scale



- 62.6 Relative humidity
 - 62.6.1 Whirling and sling hygrometers
 - 62.6.2 Electronic dew point meters
 - 62.6.3 Mechanical thermometers
 - 62.6.4 Electronic thermometers
- 62.7 Wet film thickness measurement (wet file wheel, wet film comb)
- 62.8 Dry film thickness measurement
 - 62.8.1 Non-destructive gauges (F steel substrates and NF non-ferrous metal substrates – mechanical and electronic)
 - 62.8.2 Adjustment and verification
- 62.9 Destructive test gauges (PIG)
- 62.10 Hardness tests (demonstration)
 - 62.10.1 Awareness of test methods
 - 62.10.2 Pencil scratch test
- 62.11 Adhesion/cohesion
 - 62.11.1 V cut test
 - 62.11.2 X cut tape test
 - 62.11.3 Cross cut test
 - 60.11.4 Pull-off test using dollies
- 62.12 Pinhole detection
 - 62.12.1 Low voltage
 - 62.12.2 High voltage

Level 3

The level 3 training syllabus shall review the subject areas for level 1 and level 2 and include new subject areas as listed. The examination for level 3 shall include questions relating to subjects for level 1 and level 2 in addition to the subjects listed for level 3. Any subjects that are repeated indicate a greater depth of knowledge is required compared to level 2.

Pre-learning

63 Quality assurance

- 63.1 Systems
- 63.2 Auditing
- 63.3 Standards

64 Supervision

- 64.1 Leadership requirements
- 64.2 Technical skills
- 64.3 Teamwork

65 Planning

- 65.1 Methods
- 65.2 Pre-work meetings

66 Basic metallurgy and materials

- 66.1 Conditions
- 66.2 Properties
- 66.3 Effect on corrosion behaviour

67 Paint constituents and basic chemistry

- 67.1 Binders
- 67.2 Types
- 67.3 Polymers/polymerisation
- 67.4 Resins and oils
- 67.5 Pigments
- 67.6 Resins
- 67.7 Rust inhibitive pigments
- 67.7 Solvents
- 67.8 Other main constituents
- 67.9 Solutions and dispersions

68 Paint technology

- 68.1 Polymers
- 68.2 Corrosion protection mechanisms
- 68.3 Recent developments
- 68.4 Compatibility issues

69 Environmental considerations

- 69.1 Waste disposal
- 69.2 Environmental protection act
- 69.3 VOC

70 Standards applicable

Classroom learning (Theory)

71 Standardisation

72 Production of procedures

- 72.1 Aims



- 72.2 Format
- 72.3 Content
- 73 Corrosion (awareness)**
 - 73.1 Corrosion mechanisms
 - 73.2 Interpretation of chemical symbols and chemical formulae
- 74 Structural design**
 - 74.1 Surface preparation and coating considerations
 - 74.2 Corrosion considerations
 - 74.3 Enclosure systems
- 75 Imperfections on surfaces to be coated**
 - 75.1 Types (awareness)
 - 75.2 Hot rolled products
 - 75.3 Wrought products
 - 75.4 Welds
 - 75.5 Significance
 - 75.6 Action to take
- 76 Optical aids for inspection**
 - 76.1 Magnifiers
 - 76.2 Fibrescopes
 - 76.3 Lighting considerations
- 77 Protection of materials other than steelwork**
 - 77.1 Passive fire proofing
 - 77.2 Timber
 - 77.3 Reinforced concrete
 - 77.4 Glass reinforced plastics
- 78 Health and Safety**
 - 78.1 Scope
 - 78.2 Statutory regulations
 - 78.3 Responsibilities
- 79 Assessment of inspection reports**
- 80 Records**
- 81 Dispute resolution**
- 82 Practical learning**
 - 82.1 Blast pressure measurement
 - 82.2 Profile height
 - 83.3 Profile cleanliness
 - 83.3.1 Dust
 - 83.3.2 Oil/grease
 - 83.3.3 Soluble iron salts
 - 83.3.4 Mill scale
 - 83.4 Relative humidity
 - 83.4.1 Whirling and sling hygrometers
 - 83.4.2 Electronic dew point meters
 - 83.4.3 Mechanical thermometers
 - 83.4.4 Electronic thermometers
 - 83.5 Wet film thickness measurement (wet film wheel, wet film comb)
 - 83.6 Dry film thickness measurement
 - 83.6.1 Non-destructive gauges (Ferrous steel substrates and NF non-ferrous metal substrates – mechanical and electronic)
 - 83.6.2 Adjustment and verification
 - 83.7 Destructive test gauges (PIG)
 - 83.8 Hardness tests (Demonstration)
 - 83.8.1 Awareness of test methods
 - 83.8.2 Pencil scratch test
 - 83.9 Adhesion/cohesion
 - 83.9.1 V cut test
 - 83.9.2 X cut test
 - 83.9.3 Cross cut test
 - 83.9.4 Pull-off test using dollies
 - 83.10 Pinhole detection
 - 83.10.1 Low voltage
 - 83.10.2 High voltage



Syllabus for Training and Examinations

Level 2

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Appendix C

Syllabus for Training and Examinations

Pipelines Coatings Inspector

Level 2 - only level 2 applicable to Pipeline coatings inspector

1 Quality assurance

- 1.1 Definition
- 1.2 Document control
- 1.3 Equipment control and calibration

2 Ethics

3 Inspection and quality control

- 3.1 Definitions
- 3.2 Duties and authority
- 3.3 Procedures and written instructions
- 3.4 Meetings

4 Normative documents

- 4.1 Types of normative document
- 4.2 Information contained within normative documents
- 4.3 Interpretation of normative documents

5 Corrosion (iron and Steel)

- 5.1 Nature of corrosion
- 5.2 Types of corrosion
- 5.3 Anodic and cathodic reactions
- 5.4 Factors influencing corrosion
- 5.5 Effects of scale and contamination
- 5.6 Methods of corrosion prevention
- 5.7 Assessment of corroded substrates
- 5.8 Graphitisation

6 Imperfections

- 6.1 Types (awareness)
 - 6.1.1 Castings
 - 6.1.2 Pipes and other wrought products
 - 6.1.3 Welds

- 6.2 Significance

- 6.3 Action to take

7 Surface preparation (ferrous)

- 7.1 Reasons for surface preparation
- 7.2 Characteristics of prepared surfaces
- 7.3 Weathering for scale removal
- 7.4 Methods of surface preparation
 - 7.4.1 Degreasing
 - 7.4.2 Dry abrasive blasting
 - a. Abrasive types
 - b. Properties of abrasives
 - c. Effect of abrasives
 - d. Sizing of abrasives
 - e. Checking for contamination of abrasives
 - f. Surface profiles
 - g. Measurement and assessment of profiles
 - h. Assessment of blasting grades
 - i. Blasting equipment
 - i. Pressure blasting
 - ii. Wheel abrators
 - iii. Vacuum/suction blasting
 - j. Safety of blast operations
 - k. Pressure measurement during air blasting
 - 7.4.3 Hand and power tool cleaning
 - a. Chipping
 - b. Scraping
 - c. Sanding
 - d. Grinding



- e. Wire Brushing
 - f. Needle gunning
 - 7.4.4 Chemical cleaning
- 7.5 Compressors
- 7.6 Assessment of prepared surfaces
- 8 Tests to detect surface contamination**
 - 8.1 Dust
 - 8.2 Oil/grease
 - 8.3 Soluble iron salts
 - 8.4 Mill scale
 - 8.5 Qualitative tests vs quantitative tests
- 9 Coating/wrapping systems**
 - 9.1 Fusion bonded epoxy
 - 9.2 Enamel coatings
 - 9.3 Multi-component liquids
 - 9.4 Wrapping tapes
 - 9.5 Elastomeric coatings
 - 9.6 Polyolefins and other plastic coatings
 - 9.7 Insulation applied
 - 9.8 Internal pipe coatings
 - 9.9 Advantages and limitations of systems
- 10 Application methods**
 - 10.1 Factory applications
 - 10.2 On-site application
- 11 Coating/wrapping repair methods**
- 12 Weather conditions and environment**
 - 12.1 Types of environment
 - 12.2 Contaminants
 - 12.3 Effects on operations
 - 12.4 Relative humidity
 - 12.5 Dew point
 - 12.6 Temperature effects and measurement
 - 12.7 Hydrometers (types and usage)
- 13 Testing of coatings/wrappings and materials**
 - 13.1 Viscosity
 - 13.2 Gel time (epoxy powder)
 - 13.3 Differential scanning calorimetry
 - 13.4 Penetration
 - 13.5 Water soak (absorption)
 - 13.6 Softening point
 - 13.7 Elongation
 - 13.8 Tensile
 - 13.9 Impact resistance
 - 13.10 Thickness
 - 13.11 Adhesion
 - 13.12 Holiday detection
 - 13.13 Cathodic disbondment test
 - 13.14 Strain polarisation test
 - 13.15 Peel creep
 - 13.16 Dry/curing
 - 13.17 Awareness of other tests
- 14 Coating/wrapping faults**
 - 14.1 Types
 - 14.2 Recognition
 - 14.3 Causes
 - 14.4 Locating and recording
- 15 Ditching and backfill**
- 16 Pearson Survey (theory)**
- 17 Cathodic protection (theory)**
 - 17.1 Importance of correct coating
 - 17.2 Sacrificial anodes
 - 17.3 Impressed current
 - 17.4 Determination of adequate protection
 - 17.5 Cathodic disbondment
- 18 Health & Safety**
 - 18.1 Health & safety at work etc., Act 1974
 - 18.2 Toxicity
 - 18.2.1 COSHH regulations
 - 18.2.2 Risk assessment
 - 18.2.3 Occupational exposure limits
 - 18.2.4 Monitoring methods
 - 18.3 Explosive limits
 - 18.4 Flammability
 - 18.5 Labelling and packaging



19 Environmental Considerations (introduction)

19.1 Waste disposal

19.2 Environmental Protection act

19.3 VOC

20 Handling and storage

20.1 Pipes

20.2 Coating materials

21 Inspection reports

22 Records

23 Standards applicable



Appendix D

Syllabus for Training and Examinations

Hot Dip Galvanising Inspector

Level 2

ICorr certification is available which is specific to the inspection of hot dip galvanising. The hot dip galvanising inspector examination may be attempted by candidates who do not hold any certification providing the ICORR REQ DOC requirements are met. Only the 'general content' and the 'hot dip galvanising' content apply. Only level 2 applicable.

General Content

The following syllabus content is applicable to the inspection of coatings made by thermal spraying and hot dip galvanising. The content is therefore applicable to both the metallic coatings inspector syllabus and the hot dip galvanising inspector syllabus.

- | | |
|---|---|
| 1 Quality assurance <ul style="list-style-type: none">1.1 Document control1.2 Equipment control and calibration | 5 Imperfections and contaminants on surfaces to be coated <ul style="list-style-type: none">5.1 Types (awareness)<ul style="list-style-type: none">5.1.1 Castings5.1.2 Wrought products5.1.3 Welds5.2 Significance5.3 Action to take |
| 2 Inspection and quality control <ul style="list-style-type: none">2.1 Definitions2.2 Duties pertaining to metallic coatings inspection<ul style="list-style-type: none">2.2.1 Scope2.2.2 Specification requirements2.2.3 Checklist | 6 Tests to detect surface <ul style="list-style-type: none">6.1 Qualitative tests6.2 Quantitative tests |
| 3 Normative documents <ul style="list-style-type: none">3.1 Types of normative document3.2 Interpretation of normative documents | 7 Methods of metal coating (awareness) <ul style="list-style-type: none">7.1 Hot dip galvanising7.2 Thermally sprayed metal coatings7.3 Electroplating7.4 Diffusion coating7.5 Cladding |
| 4 Corrosion <ul style="list-style-type: none">4.1 Types of corrosion4.2 Anodic and cathodic reactions4.3 Corrosion control by using metal coatings | |



8 Health and Safety

- 8.1 Scope
- 8.2 Statutory requirements
- 8.3 Responsibilities

Hot Dip Galvanising

9 Surface preparation

- 9.1 Degreasing
- 9.2 Pickling
- 9.3 Fluxing
- 9.4 Abrasive blast cleaning
- 9.5 Requirements

10 Processes

- 10.1 The batch process
- 10.2 The continuous process
- 10.3 Specialised processes

11 Design for galvanising

- 11.1 Size and weight
- 11.2 Handling
- 11.3 Venting
- 11.4 Draining
- 11.5 Distortion

12 Galvanising

- 12.1 Reaction kinetics
- 12.2 Effect of steel surface profile
- 12.3 Effect of steel chemistry

13 Post treatments

- 13.1 Quenching
- 13.2 Air drying
- 13.3 Passivation

14 Coating characteristics

- 14.1 Bonding
- 14.2 Hardness
- 14.3 Toughness
- 14.4 Appearance

15 Testing

- 15.1 Coating weight
- 15.2 Coating thickness
- 15.3 Coating cohesion
- 15.4 Surface smoothness
- 15.5 Flux staining
- 15.6 Sampling
- 15.7 Surveys

16 Coating faults

- 16.1 Types
- 16.2 Recognition
- 16.3 Causes
- 16.4 Locating and recording

17 Coating repair methods

18 Organic coatings on galvanising (specific considerations)

19 Health and safety (specific considerations)

20 Handling and storage

21 Inspection records

22 Records

23 Standards applicable



Appendix E

Syllabus for Training and Examinations

Insulation Inspector

Note: only level 2 applicable. Candidates must be certificated under the ICorr certification scheme to Painting Inspector level 1, 2 or 3 before attempting the Insulation inspector examination unless they opt to take the extended hours training as set out in table 1 in ICORR REQ DOC.

Level 2

1 Quality assurance

- 1.1 Definitions
- 1.2 Document control
- 1.3 Equipment control and calibration

2 Inspection and quality control

- 2.1 Definitions
- 2.2 Duties pertaining to insulation inspection
 - 2.2.1 Responsibilities
 - 2.2.2 Specification requirements
 - 2.2.3 Checklist

3 Normative documents

- 3.1 Types of normative documents
- 3.2 Interpretation of normative documents

4 Insulation systems

- 4.1 Thermal insulation
 - 4.1.1 Hot
 - 4.1.2 Cold
- 4.2 Acoustic insulation
- 4.3 Terminology
- 4.4 Coding

5 Insulating materials

- 5.1 Insulation
 - 5.1.1 Mineral wool
 - 5.1.2 Calcium silicate
 - 5.1.3 Rigid phenolic foams
 - 5.1.4 Cellular glass

- 5.1.5 Polyisocyanurate
- 5.1.6 Expanded perlite
- 5.1.7 Vermiculite
- 5.1.8 Awareness of other types

5.2 Protective coverings

- 5.2.1 Metal cladding
- 5.2.2 Vapour seals
- 5.2.3 Hard setting compositions

5.3 Fixings

6 Insulation design (basics)

- 6.1 Materials
- 6.2 Thickness
- 6.3 Layers

7 Application of insulation

- 7.1 Specification requirements
- 7.2 Weather conditions and environment
- 7.3 Applicator requirements (skilled vs unskilled)
- 7.4 Considerations prior to application
- 7.5 Application methods
- 7.6 Sequence of events

8 Scaffolding

9 Handling and storage of materials

10 Health and safety considerations

11 Common problems encountered

12 Reporting

13 Standards applicable



Appendix F

Syllabus for Training and Examinations

Fire Proofing Inspector

This syllabus has been withdrawn and replaced by the Passive Fire Protection Inspector syllabus, Appendix A to the Passive Fire Protection Inspector REQ-DOC.

Candidates who hold a valid Fire Proofing Inspector Level 2 certificate can seek to achieve the Passive Fire Protection Inspector certificate by sitting and passing the Passive Fire Protection Inspector examination in full.