

Corrodere^o



Course Handbook
corrodere.com



FOREWORD



Welcome to Corrodere, the most advanced and innovative method of education and training for the surface treatment and coatings industry.



The training programme has been developed with industry experts to provide a comprehensive package of modules that are available to ensure the user gains an insight into basic corrosion, methods of surface treatment and application of protective coatings.



It is the objective of this course to fill in the gaps that exist in courses currently available, both statutory and voluntary, so that individuals can develop their specific skills in their specialist areas.



On completion of this course you should possess all the background knowledge that is essential in enabling you to develop a successful career in coatings and corrosion.



It is essential that you read this handbook at the beginning of the course and keep it for reference to particular issues as they may arise.

I hope that you will find your association with the course an inspiring and rewarding experience.

We wish you well in your studies.

Michelle West

Course Administrator

I. COURSE GUIDANCE NOTES

This course has been written as an online course sectioned into modules so that you may study:

- When you like
- Where you like
- At your own pace

I.1 Modules

Each training module contains a number of units which are comprised of text, illustrations, animations, video and a voice over. A full set of training notes accompanies the course. The modules should be read and studied in depth. The training material can also be used as a reference guide on a continuous basis for up to 12 months during the training.

I.2 Understanding Corrodere

The operation of Corrodere involves more than just straight forward corrosion control. To be successful you have to understand fully a diverse range of topics that directly impact on the environment in which you are working. A sound knowledge of the units: protective Coatings application, abrasive blast cleaning, spray painting and the subjects within the specialist modules are all essential elements if you are to become successful in the industry.

This course is designed to enable the participant to gain a deep knowledge of professional coatings and corrosion control training and it will give you a sound platform from which to work.

After completing the online course the individual can build on this knowledge by taking the practical day assessment and further theoretical examinations such as the Institute of Corrosion, SSPC The Society for Protective coatings or the IACs PR34 approval. The participant may also progress onto the Diploma in Corrosion Control with the use of protective coatings.

There is no substitute for good experience but a solid theoretical background allows the student to understand many of the reasons for what is happening around them. This knowledge, when applied to the workplace, makes the difference in a successful and rewarding career.

I.3 Reputation

The coatings and corrosion control industry is a small and closely knit community. Individuals succeed or fail depending upon their reputation. On many occasions that reputation is established by an individual's response to a given situation. Honesty and integrity combined with knowledge and diligence will guarantee a successful future career. This course will give you the knowledge, it is up to you to supply the other essential ingredients.

2. THE TRAINING COURSE

2.1 Getting Started & Login

Once you have completed the online registration form you will receive an email with confirmation of registration including your username and password.

Once logged in, simply go to the particular training module, such as the Specialist Units and select a module which has a yellow folder, select the unit and you will be given a drop-down list of all the training units i.e. 1.1, 1.2 etc.

2.1.1 Training unit selection

Once you select a training unit, the unit objective will appear on the screen. You can click the voice toggle button underneath the objective to pause/play the voiceover.

2.1.2 The full presentation

Once you have read and listened to the unit objective you can click the 'view presentation' button under the heading 'unit options'. This selection will open the full presentation in a new window.

2.1.3 Full presentation content

A number of items will appear when viewing the presentation; the training text, training material, a progress bar and a page number.

2.1.4 Navigating through the presentation

You can use the 'Next' and 'Previous' buttons to move from slide to slide.

Alternatively you can use the < and > keys (just above the right shift button) to go forward and back in the same manner.

2.1.5 Slides and voiceover

You must complete all slides, although it is your choice to listen to the voiceover.

2.1.6 Extra handouts during the presentation

Yes, simply select 'Handouts' in the presentation window and you can view printable handouts in PDF format.

2.1.7 Saving handouts

When you open the handouts with Adobe Reader, there is the option to save.

2.1.8 Presentation overview

Within the presentation you can click the 'media' button to get a full listing of all the media. If you want to see the media in full-view, simply click it. There are options to go to the Next and Previous also.

2.1.9 Increasing the picture sizes

Simply click the picture and it will appear at full size. A second click will return you back to the presentation.

2.2 Completion of the unit

When you have finished reading the last slide, click the 'finish' button. You will be told 'You have read this module, please wait till the page loads' and the window will close. You will then be taken to a Congratulations page with options to sit the assessment, or go back to the unit objective.

All progress is saved, meaning that you can take the assessment at any date after reading through the unit. Leave it for another day if you prefer.

2.3 Assessments

The assessment consists of around ten multiple-choice questions. You must get full-marks in order to pass. But rest assured, all the answers are within the unit slideshow.

2.4 Passing the unit

The training package will tell you your score. If you get the full marks as required you will be notified and your progress saved and notification is sent to the Course Administrator to be added to your personal records.

2.5 Unit selection check list

Within 'my Profile' you can see at a glance by checking the icon associated with it:

Navigation Legend

- Insert icon - Contains Sub-Units - Click to open/close folder
- Unit - Hasn't been Viewed or Passed
- Unit - Has been fully read, but yet to pass the assessment
- Unit - Has been fully read and assessment has been passed

Alternatively, you can see within the 'Unit Status' which can be found on the unit objective page.

2.6 Training progress

As you complete a unit and assessment, a percentage figure will appear on the 'my Profile' page. You can also see the status of the units by their icon on the home page introduces you to the program with links to full details of each training module. You can re-read any of the units, and resit the tests (without saving) to see how you do.

2.7 Length of the course

It is preferable to complete the units in order, however you can complete them in any order you require. The course takes as long as is required. It is worth remembering that everything you need to know is tested and marked

3. TOOLS

Once you are logged into the training course, under the 'tools' section you will find handy mini-programs , including (but not limited to);

- Automatic Surface Area Calculators
- Interactive Coating Breakdown Charts
- Interactive coating failures etc
- Inspection equipment video training

You may also view all the videos and animations in this section

4. CONTACT LIST

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Fax: +44 (0)1252 732221
Email: corrodere@mpigroup.co.uk
www.corrosion-training.com

5. YOUR DETAILS

5.1 Administration

Course Administrator, Michelle West
E-mail: corrodere@mpigroup.co.uk
Technical Director, Brendan Fitzsimons

5.1 Changing Addresses

If you change your address please notify the Course Director in writing. Also, please tell us of any changes in telephone numbers or e-mail addresses.

5.2 Changing Your Name

If you change any of your names, you must notify the Course Director in writing and provide the appropriate documentary evidence:

- Letter witnessed by your GP
- Deed poll
- Letter of declaration signed by a solicitor or a Justice of the Peace
- An affidavit sworn before a Notary
- Marriage Certificate

We have to be satisfied as to your true identity so that we can maintain the security of confidential information we hold within your records.

5.3 Personal Data

MPI Group is committed to the principles of data protection and best practice in handling information. All personal information is held on computer and manual files and will only be processed for the purposes you were informed about on your registration form. MPI Group is registered with the Data Protection Act 1998. Registration Number:: Z1284969

6. CANCELLATION AND REFUNDS

Refunds will only be given if you have paid your fees in full and your cancellation is received in writing to the Course Director within the first 14 days of receiving the Login details.

7. HEALTH & SAFETY

Using Computers

Visual display unit (VDU), visual display terminal (VDT), monitor and display screen equipment (DSE) all mean the same thing - a display screen, usually forming part of a computer and showing text, numbers and graphics.

Getting comfortable

Adjust your chair and VDU to find the most comfortable position for your work. Your forearms should be approximately horizontal and your eyes the same height as the top of the VDU.

Make sure you have enough desk space for documents and other equipment.

Try different arrangements of keyboard, screen, mouse and documents to find the best arrangement for you. A document holder may help you avoid awkward neck and eye movements.

Arrange your desk and VDU to avoid glare, or bright reflections on screen. This will be easiest if neither you nor the screen is directly facing windows or bright lights. Adjust curtains and blinds to prevent unwanted light.

Make sure there is space under your desk to move your legs freely. Move any obstacles such as boxes or equipment.

Avoid excess pressure from the edge of your seat on the backs of your legs and knees. A footrest may be helpful, particularly for smaller users.

Using the Keyboard

Adjust your keyboard to get a good keying position. A space in front of the keyboard is sometimes helpful for resting the hands and wrists when not keying.

Try to keep your wrists straight when keying. Keep a soft touch on the keys and don't overstretch your fingers. Good keyboard technique is important.

Using the Mouse

Position the mouse within easy reach, so it can be used with the wrist straight. Sit upright and close to the desk, so you don't have to work with your mouse arm stretched. Move the keyboard out of the way if it is not being used.

Support your forearm on the desk, and don't grip the mouse too tightly.

Rest your fingers lightly on the buttons and do not press them hard.

Reading the Screen

Adjust the brightness and contrast controls on the screen to suit the lighting conditions in the room.

Make sure the screen surface is clean.

In setting up software, choose options giving text that is large enough to read easily on your screen, when you are sitting in a normal, comfortable working position. Select colours that are easy on the eye (avoid red text on a blue background, or vice-versa).

Individual characters on the screen should be sharply focused and should not flicker or move. If they do, the VDU may need servicing or adjustment.

Posture and breaks

Do not sit in the same position for long periods. Make sure you change your posture as often as practicable. Some movement is desirable, but avoid repeated stretching to reach things you need.

Take a break from the screen, e.g. make the tea or coffee. Frequent short breaks are better than fewer long ones.

8. FREQUENTLY ASKED QUESTIONS

Within the training package you will find the frequently asked questions (FAQs) section

The Corrodere course has been carefully designed to ensure that you can find your training as easily as possible.

The table below outlines the 'flow' of things on the site;

Name	Example	Description
corrodere	corrodere.com	Your Training Home
course	Protective Coatings Application	Contains all the training associated with a particular skilled trade
module	1 - Health and Safety (found in "my profile")	A module is simply a folder or sub-folder within a course (see above). Modules are used to organise the training units (see below) into understandable and accessible sections.
unit	1.5 - Electricity and Air Supply	A unit is a single 'portion' of training, which is easily digestible. Each unit consists of: <ul style="list-style-type: none">• A slideshow that outlines all you need to know.• A printable handout that is 'further reading' to advance your knowledge.• An assessment that tests your understanding of the above.

How do I commence training?

Simply go to the particular training module, such as Protective Coatings Application and select a module which has a yellow folder, select the unit and you will be given a drop-down list of all the training units i.e. 1.1, 1.2 etc.

What happens when I select a training unit?

Once you select a training unit, the unit objective will appear on the screen and the voiceover will start automatically. Simply click the voice play/pause button underneath the objective to pause or play the voiceover.

How do I view the full presentation?

Once you have read and listened to the unit objective you can click the 'view presentation' button under the heading 'unit options'. This selection will open the full presentation in a new window.

What will I find in the full presentation?

A number of items will appear when viewing the presentation; the training text, training material, a progress bar and a page number.

How do I move through the presentation?

You can use the 'Next' and 'Previous' buttons on screen to move from slide to slide. Alternatively you can use the '<' and '>' keys (near the right shift key on your keyboard) to go forward and back in the same manner.

Do I need to view all slides and listen to voiceover?

Yes, you must complete all slides and cannot simply skip to the end.

Can I view extra handouts during the presentation?

Yes, simply select 'Handouts' in the presentation window and you can view printable handouts in PDF format.

Can I save the handouts to my hard-drive?

Yes, using the PDF reader software or web plug-in, you will be able to save the handouts and print them out.

Can I see an overview of all the media in a presentation?

Yes. Within the presentation you can click the 'media' button to get a full listing of all the media. If you want to see the media in full-view, simply click it. There are options to go to the Next and Previous also.

Can I view a picture full screen within the presentation?

Yes, simply click the picture and it will appear at full size. A second click will return you back to the presentation.

What happens when I complete the training unit?

When you have finished reading the last slide, click the 'finish' button. You will be told 'You have read this module, please wait till the page loads' and the window will close. You will then be taken to a Congratulations page with options to sit the assessment, or go back to the unit objective.

All progress is saved, meaning that you can take the assessment at any date after reading through the unit. Leave it for another day if you prefer.

What are the assessments like?

The assessment consists of around ten multiple-choice questions. You must get full-marks in order to pass. But rest assured, all the answers are within the unit slideshow.





How will I know if I passed the unit?

The training package will tell you your score. If you get the full-marks as required you will be notified and your progress saved.

How do I know if I have read / passed a unit before?

Within 'my Profile' you can see at a glance by checking the icon associated with it:

Navigation Legend

-  Folder - Contains Sub-Units - Click to open/close folder
-  Unit - Has NOT been Viewed or Passed
-  Unit - Has been fully read, but yet to pass the assessment
-  Unit - Has been fully read AND assessment has been passed

Alternatively, you can see within the 'Unit Status' that is at on the unit objective page.

How do I monitor my progress in the training?

As you complete a unit and assessment, a percentage figure will appear on the 'my Profile' page. You can also see the status of the units by their icon (see above FAQ)

What can I find on the homepage?

The home page introduces you to the program, links to full details of each training module, links to the demo.

What are the 'Tools'?

The 'Tools' are handy mini-programs, or widgets that you can use to help your day-to-day life, including (but not limited to); Automatic Surface Area Calculators and Interactive Coating Breakdown Charts

Can I save to the memory stick?

Yes. All your progress is automatically saved as you go through the units. Your percentage and profile is also saved.

Should I complete the units in order?

Preferably yes, however you can complete them in any order you require.

How long does it take to complete all units?

As long as is required. It is worth remembering that everything you need to know is tested and marked.

Can I review completed units?

Yes, you can re-read any of the units, and resit the tests (without saving) to see how you do.

What does "Get Certified" mean?

When you have completed an entire Course (such as Protective Coatings Application) and passed all of the required assessments, a "Get Certified" link will appear. This will take you to a page that will let you apply for a Completion Certificate. You can either email the page to the team using the web link provided or print the page and fax it to them. The page will contain a unique ID code that will allow the Certification Team to identify you and confirm that you have passed all of the assessments. They will then forward your certificate.

Is the Health & Safety content relevant to my country?

The Health and Safety section relates to UK Regulations, which are considered to be amongst the most stringent. You may find Regulation differ from Country to Country.

9. COURSE CONTENTS

Protective Coatings Application

1.0 Health & Safety

- 1.1 Company Induction
- 1.2 Accident Prevention
- 1.3 House Keeping
- 1.4 First Aid
- 1.5 Electricity/Air Supply
- 1.6 Permit to Work
- 1.7 COSHH & Risk Assessment
- 1.8 Material Safety Data Sheets
- 1.9 LEL, TLV, OEL and MEL
- 1.10 PPE (Personal Protective Equipment)
- 1.11 Basic Access Requirements
- 1.12 Safety in Surface Preparation
- 1.13 Safety in Paint Application
- 1.14 Method Statements

2.0 Access Systems

- 2.1.1 Erecting/Dismantling Platforms
- 2.1.2 Safe Use of Ladders
- 2.1.3 Access Platforms

3.0 Surface Preparation

- 3.1.1 Types and Methods of Surface Preparation
- 3.1.2 Type of Substrates and Materials
- 3.1.3 Previously Painted/Coated Substrates
- 3.2.1 Mechanical/Hand Preparation Standards
- 3.2.2 Pre-surface Conditions
- 3.2.3 Pre-surface Preparation/Cleaning
- 3.3.1 Chipping Hammer
- 3.3.2 Wire Brush
- 3.3.3 Scraper
- 3.3.4 Needle Gun
- 3.3.5 Power Wire Brush and Grinding
- 3.4.1 Steam Cleaning
- 3.4.2 Water Washing
- 3.4.3 Solvent Cleaning
- 3.5.1 Compressors
- 3.5.2 Heaters
- 3.5.3 Lighting
- 3.5.4 Grit Removal and Hoppers
- 3.5.5 De-humidification

4.0 Paint Types

- 4.1 Coating Types and Systems
- 4.2 Product Data Sheets - Review
- 4.3 Single and Two Part Materials
- 4.4 Paint Mixing
- 4.5 Pot-life/Induction
- 4.6 Storage
- 4.7 Batch Numbers
- 4.8 Volume Solids
- 4.9 Coverage (Theoretical/Practical)
- 4.10 Compatibility

5.0 Paint Application

- 5.1.1 Relative Humidity and Dew Point
- 5.1.2 Steel Temperature
- 5.2.1 Brush Application
- 5.2.2 Roller Application
- 5.2.3 Airless Spray
- 5.2.4 Air Assisted Spray and HVLP
- 5.3.1 Wet Film Thickness
- 5.3.2 Dry Film Thickness
- 5.3.3 Drying/Recoating
- 5.3.4 Stripe Coating
- 5.4.1 Surface Cleaning
- 5.4.2 Coating Damage/Repair
- 5.4.3 Materials and Equipment Handling
- 5.5.1 Shop Painting
- 5.5.2 Site Painting
- 5.5.3 General Maintenance (Plant and Equipment)
- 5.5.4 Equipment Cleaning

6.0 Inspection

- 6.1.1 Specialist Equipment
- 6.2 Inspection Standards
- 6.2.1 BS, EN, ISO Standards & Codes of Practice
- 6.2.2 Visual Standards
- 6.3.1 Equipment, Standards and Specifications

Abrasive Blast Cleaning

1.0 Abrasive Blast Cleaning Introduction

- 1.1 General Overview
- 1.2 Basic Corrosion
- 1.3 Millscale
- 1.4 Substrate Materials
- 1.5 Pre-Surface Conditions
- 1.6 Mechanical Blast Machines
- 1.7 Types of Air Blast Equipment
- 1.8 Wet Abrasive Blast Cleaning

2.0 Health and Safety

- 2.1 Introduction
- 2.2 Method Statements/Risk Assessments
- 2.3 PPE
- 2.4 Breathing Air/Helmets

3.0 Blast Media

- 3.1 Types of Abrasives
- 3.2 Surface Profile

4.0 Abrasive Blast Cleaning Standards and Quality Control

- 4.1 Visual (Photographical) Standards
- 4.2 Surface Cleanliness
- 4.3 Environmental Conditions

5.0 Abrasive Blast Cleaner Operational Procedures

- 5.1 Compressed Air and Air Requirements
- 5.2 Blast Hoses and Associated Equipment
- 5.3 Types of Nozzles
- 5.4 Ventilation and Lighting
- 5.5 Communications

6.0 Process Control

- 6.1 Abrasive Equipment Set-up and Testing
- 6.2 Abrasive Blast Cleaning Process
- 6.3 Abrasive Blast Cleaning Standards

Paint Spraying

1.0 Introduction

- 1.1 Paint Application (Introduction)
- 1.2 Basic Corrosion
- 1.3 Surface Preparation
- 1.4 Coating Types and Systems

2.0 Health and Safety

- 2.1 Material Safety Data Sheets
- 2.2 C.O.S.H.H. and Risk Assessments
- 2.3 Method Statements

3.0 Paint Materials

- 3.1 Product Data Sheets
- 3.2 Paint Storage and Paint Mixing
- 3.3 Quality Control

4.0 Airless Spray Equipment

- 4.1 Airless Spray Painting Equipment
- 4.2 Airless Spray Equipment Set-up, Testing and General Use

5.0 Conventional Air Spray Equipment

- 5.1 Conventional Air Spray Equipment

6.0 Plural Component Spray Equipment

- 6.1 Plural Component Spray Equipment

10. SPECIALIST UNITS

1 Coating Inspection and Equipment

- 1.1 Inspection and Testing Equipment
- 1.2 Duties of a Painting Inspector
- 1.3 Low Voltage Holiday Detector
- 1.4 High Voltage Holiday Detector
- 1.5 Arithmetic
- 1.6 Pre-Job Conference
- 1.7 Coating Inspectors Safety
- 1.8 Inspection Documentation

2 Cathodic Protection

- 2.1 Cathodic Protection in the Marine Environment
- 2.2 Cathodic Protection of Pipelines

3 Marine General

- 3.1 IMO Regulations Ballast Tanks
 - 3.1.1 Performance Standards for Protective Coatings: Part 1
 - 3.1.2 Performance Standards for Protective Coatings: Part 2
 - 3.1.3 Performance Standards for Protective Coatings: Part 3
 - 3.1.4 Performance Standards for Protective Coatings: Part 4
- 3.2 High-Pressure Water Jetting
 - 3.2.1 Introduction to High Pressure Water Jetting
 - 3.2.2 High Pressure Water Jetting on Sea Going Vessels
- 3.3 Coating Systems
 - 3.3.1 Outside Shell Coating Systems
 - 3.3.2 Cargo Tank Coating Systems
 - 3.3.3 Cargo Hold Coating Systems
 - 3.3.4 Superstructure Coating Systems
 - 3.3.5 Main Deck Coating Systems
- 3.4 IMO regulations Cargo Oil Tanks
- 3.5 IMO Regulations Void Spaces
- 3.6 IMO Guidelines for Maintenance and Repair of Protective coatings

4 Marine PSPC

- 4.1 Role of Inspector
- 4.2 International Standards
- 4.3 Coating Technical File
- 4.4 Ventilation and Dehumidification
- 4.5 Pre-job Conference

5 Coating Failures

- 5.1 Coating Failures

6 Metallic Coatings

- 6.1 Thermal Metal Spray
- 6.2 Galvanising

7 Design & Construction

- 7.1 Material Design and Type

8 Concrete

- 8.1 Concrete Repair and Protection

9 Fire Protection

- 9.1 Passive Fire Protection

10 Specialist Coatings

- 10.1 Specialist Coatings
- 10.2 History of Pipe Coatings
- 10.3 Fusion Bonded Epoxy Powder Coatings (FBE)

11 ISO and other International Standards

- 11.1 ISO Standards
 - 11.1.1 EN ISO 12944 (Parts 1-8)
 - 11.1.2 EN ISO 4628 (Parts 1-6)
 - 11.1.3 BS EN ISO 8501-1
 - 11.1.4 BS EN ISO 8501-4:2006
 - 11.1.5 BS EN ISO 8502 (Parts 2, 3, 4, 5, 6, 8, 9, 11, 12)
 - 11.1.6 BS EN ISO 2409 (BS3900-E6)
 - 11.1.7 BS EN ISO – Miscellaneous Standards
- 11.2 SSPC Standards
 - 11.2.1 SSPC VIS 1
 - 11.2.2 SSPC VIS 2
 - 11.2.3 SSPC VIS 3
 - 11.2.4 SSPC VIS 4 - NACEVIS 7
 - 11.2.5 SSPC VIS 5 - NACEVIS 9
 - 11.2.6 SSPC – PA2
 - 11.2.7 SSPC Miscellaneous Standards
- 11.3 ASTM Standards
 - 11.3.1 ASTM D 4541
 - 11.3.2 ASTM D 6677
 - 11.3.3 ASTM D 3359
 - 11.3.4 ASTM – Miscellaneous Standards

12 Quality Management

- 12.1 Quality Management System

13 Paint Testing

- 13.1.1 Laboratory and Field Testing Part 1
- 13.1.2 Laboratory and Field Testing Part 2
- 13.2.1 Paint Constituents and Basic Chemistry Part 1
- 13.2.2 Paint Constituents and Basic Chemistry Part 2

14 Soluble Salts

- 14.1 Soluble Salts

15 Paint Manufacture

- 15.1 Paint Manufacture

16. Offshore

- 16.1 Offshore Construction
- 16.2 Offshore Maintenance

17. Coating Surveys

- 17.1 Coating Surveys Part 1
- 17.2 Coating Surveys Part 2