



Australian Government

MSMOPS301 Treat corrosion

Release: 1

MSMOPS301 Treat corrosion

Modification History

Release 1. Supersedes and is equivalent to MSAPMOPS301A Treat corrosion

Application

This unit of competency covers the skills and knowledge required to examine an object for corrosion, confirm the appropriateness of any corrosion treatment and monitor the treatment process.

The object may be any type of plant, equipment or structure in any service environment, such as a plant/factory area, a well head, an item of major infrastructure or a pipeline covering thousands of kilometres. This unit applies to situations where the corrosion is treated using a surface coating.

Corrosion typically refers to any electrochemical process leading to the decay of metal but also includes decay processes in non-metals.

This unit of competency applies to technicians. The technician will be required to examine substrates and the design of the object to be treated to determine the preparation and protection which might need to be applied and confirm that the treatment specification is appropriate and to monitor that treatment process.

This unit of competency applies to an individual working alone or as part of a team or group and working in liaison with other shift team members and the control room operator as appropriate.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Competency Field

Operations

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes

Performance criteria describe the performance needed to demonstrate achievement of the element

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|---|--|-----|--|
| 1 | Determine nature of corrosion | 1.1 | Inspect object |
| | | 1.2 | Observe service environment and note likely causes of, and vulnerability to, corrosion |
| | | 1.3 | Identify the type of corrosion present or likely to occur |
| 2 | Interpret surface preparation and coating specification | 2.1 | Examine specified surface preparation method |
| | | 2.2 | Examine specification for prepared surface |
| | | 2.3 | Examine specified surface protection method |
| | | 2.4 | Examine specification for finished surface protection |
| | | 2.5 | Identify critical aspects of specifications |
| 3 | Confirm appropriateness of surface preparation and coating specification | 3.1 | Compare specification with existing or likely corrosion situation |
| | | 3.2 | Confirm that the specification is appropriate for the situation |
| | | 3.3 | Clarify any discrepancies between specification and expected treatment and take appropriate action |
| | | 3.4 | Complete any required documentation |
| 4 | Monitor treatment process | 4.1 | Identify hazards arising from the preparation and protection treatments |
| | | 4.2 | Specify appropriate hazard controls and ensure they are implemented |
| | | 4.3 | Monitor the progress of the treatment |
| | | 4.4 | Recognise situations which might require a change to hazard controls or specifications |
| | | 4.5 | Take the required actions to resolve the identified situations |

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Regulatory framework The latest version of all legislation, regulations, industry codes of practice and Australian/international standards, or the version specified by the local regulatory authority, must be used, and include one or more of the following:

- legislative requirements, including work health and safety (WHS)
- industry codes of practice and guidelines
- environmental regulations and guidelines
- Australian and other standards
- licence and certification requirements

All operations to which this unit applies are subject to stringent health, safety and environment (HSE) requirements, which may be imposed through state/territory or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and HSE requirements, the HSE requirements take precedence.

Procedures All operations must be performed in accordance with relevant procedures.

Procedures are written, verbal, visual, computer-based or in some other form, and include one or more of the following:

- emergency procedures
- work instructions
- standard operating procedures (SOPs)
- safe work method statements (SWMS)
- temporary instructions
- any similar instructions provided for the smooth running of the plant

Hazards Hazards include one or more of the following:

- heat, smoke, dust or other atmospheric hazards
- structural hazards

- industrial (machinery, equipment and product)
- limited head spaces or overhangs
- working at heights, in restricted or confined spaces, or in environments subjected to heat, noise, dusts or vapours
- fire and explosion
- flammability and explosivity
- hazardous products and materials
- unauthorised personnel
- sharp edges, protrusions or obstructions
- slippery surfaces, spills or leaks
- extreme weather
- other hazards that might arise

Appropriate actions

Appropriate actions include one or more of the following:

- determining problems needing action
- determining possible fault causes
- developing solutions to problems which do not have a known solution
- following through items initiated until final resolution has occurred
- reporting problems outside area of responsibility to designated person

Non-routine problems

Non-routine problems are unexpected problems, or variations of previous problems and include one or more of the following:

- plant/process condition makes intended approach inappropriate
- weather affects intended approach
- surface preparation reveals hidden issues
- work is not conforming to specification
- permit conditions change or are inappropriate for work to be undertaken

Operational knowledge

Operational knowledge includes one or more of:

- procedures
- training
- technical information, such as journals and engineering specifications
- remembered experience
- relevant knowledge obtained from appropriate people

Unit Mapping Information

Release 1. Supersedes and is equivalent to MSAPMOPS301A Treat corrosion

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=d1287d36-dff4-4e9f-ad2c-9d6270054027>

Assessment Requirements for MSMOPS301 Treat corrosion

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria and demonstrate the ability to:

- observe and inspect service environment to identify:
 - type of corrosion present
 - likely causes of corrosion
 - vulnerability to corrosion
- identify hazards and apply relevant hazard controls
- read and interpret product specifications, job sheets, procedures, material labels and safety information
- analyse proposed treatment for appropriateness
- complete workplace forms/reports
- communicate effectively with team/work group, supervisors and other personnel
- apply operational knowledge to non-routine problems.

Knowledge Evidence

Evidence must be provided that demonstrates knowledge of:

- duty of care obligations
- relevant organisational procedures
- physics and chemistry relevant to corrosion in metals and non-metals
- relevant coating/lining types and application methods
- hazards that may arise in the job/work environment, including:
 - their possible causes
 - potential consequences
 - appropriate risk controls
- costs and hazards of corrosion
- impacts of preparation and coating variables, including:
 - blast media type/size/shape
 - temperature during/after application
 - pressure of spray
 - pH
- non-routine problems that may arise, the range of possible causes and processes to develop solutions

- major preparation and protection methods, their typical applications and how to troubleshoot problems.

Assessment Conditions

- The unit should be assessed holistically and the judgement of competence based on a holistic assessment of the evidence.
- The collection of performance evidence is best done from a report and/or folio of evidence drawn from:
 - a single project which provides sufficient evidence of the requirements of all the elements and performance criteria
 - multiple smaller projects which together provide sufficient evidence of the requirements of all the elements and performance criteria.
- A third-party report, or similar, may be needed to testify to the work done by the individual, particularly when the project has been done as part of a project team.
- Assessment should occur in operational workplace situations. Where this is not possible, or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment reflecting realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.
- Assessment in a simulated environment should use evidence collected from one or more of:
 - walk-throughs
 - demonstration of skills
 - industry based case studies/scenarios
 - ‘what ifs’.
- Knowledge evidence may be collected concurrently with performance evidence or through an independent process, such as workbooks, written assessments or interviews (provided a record is kept).
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications associated with this unit.
- The regulatory framework will be reflected in workplace policies and procedures and is not required to be independently assessed.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- As a minimum, assessors must satisfy the Standards for Registered Training Organisations 2015 assessor requirements.

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