



Australian Government

MEA412 Pre-treat aluminium alloy surfaces

Release: 2

MEA412 Pre-treat aluminium alloy surfaces

Modification History

Release 2. Equivalent to MEA412 Pre-treat aluminium alloy surfaces with amended prerequisite codes.

Application

This unit of competency requires application of skills and knowledge relating to the application of chemical conversion coatings to aluminium alloy surfaces of fixed and rotary wing aircraft and aircraft components with aluminium alloy surfaces during the performance of scheduled or unscheduled maintenance. Work may be performed individually or as part of a team.

No licensing requirements apply to this unit at the time of publication, but requirements for compliance with legislation and regulations for the handling and disposal of hazardous materials is included in the unit.

The unit is used in workplaces that operate under the airworthiness regulatory systems of the Australian Defence Force (ADF) and the Civil Aviation Safety Authority (CASA).

Pre-requisite Unit

MEA107	Interpret and use aviation maintenance industry manuals and specifications
MEA154	Apply work health and safety practices in aviation maintenance
MEA155	Plan and organise aviation maintenance work activities
MEA156	Apply quality standards during aviation maintenance activities
MEA157	Complete aviation maintenance industry documentation
MEA158	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Competency Field

Aviation maintenance

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Prepare surfaces for application of chemical conversion coating	1.1 The required pre-treatment task is identified from maintenance documentation and enterprise procedures 1.2 Enterprise procedures and/or process specifications are used to identify required materials and tools 1.3 Aircraft or component identification is matched with relevant maintenance documentation 1.4 Work health and safety (WHS) requirements are identified and complied with and personal protective equipment (PPE) is checked for correct fit and function 1.5 Common surface soils are removed in accordance with enterprise procedures and/or process specifications 1.6 Masking is completed on areas where pre-treatment is not required 1.7 Aluminium alloy substrate is prepared for application of conversion coating in accordance with enterprise procedures and/or process specifications
2. Apply chemical conversion coating	2.1 The correct environment for conversion coating application is established and maintained 2.2 The applicable chemical conversion coating is applied while observing all relevant WHS requirements, including the use of material safety data sheets (MSDS) and items of PPE 2.3 Masking is removed and the aircraft or component is left in a suitable condition for the next task 2.4 Completion of the pre-treatment process is documented in accordance with enterprise procedures
3. Clean up work area and maintain equipment	3.1 Material that can be reused is collected and correctly stored 3.2 Waste material is removed and disposed of or stored in accordance with legislative, regulatory and enterprise

procedures

- 3.3 Equipment is cleaned in accordance with enterprise procedures or manufacturer's instructions while observing all relevant WHS requirements, including the use of MSDS and items of PPE
- 3.4 Equipment is checked for serviceability and unserviceable items are dealt with in accordance with enterprise procedures
- 3.5 Tools are cleaned and maintained in accordance with enterprise procedures
- 3.6 Work area is cleaned and inspected for serviceable condition

Foundation Skills

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.

Procedures and requirements include:

- Industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

WHS requirements are identified from:

- Commonwealth/state/territory WHS legislation, regulations and codes
- Procedures manual
- Safety manual
- Work instructions
- Maintenance organisation manual
- MSDS
- Defence regulations and instructions
- Standing instructions

Common surface soils include:

- Paint
- Dirt
- Grease
- Oils

Legislative, regulatory and enterprise procedures include:

- Fuel
- Adhesives
- Commonwealth/state/territory environmental legislation, regulations and codes for the storage and disposal of hazardous and toxic materials
- MSDS
- Maintenance organisation manual
- Procedures manual
- Work instructions
- Relevant Defence regulations and instructions
- Standing instructions

Unit Mapping Information

Release 2. Equivalent to MEA412 Pre-treat aluminium alloy surfaces

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=ce216c9c-04d5-4b3b-9bcf-4e81d0950371>

Assessment Requirements for MEA412 Pre-treat aluminium alloy surfaces

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Performance Evidence

Evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria under the specified conditions of assessment, and must include:

- applying WHS procedures relating to pre-treatment of aluminium alloy substrates, including the selection and correct use of PPE
- applying masking
- preparing for chemical conversion coating
- water break testing
- applying specified pre-treatment process
- water break re-testing
- using MSDS
- selecting and using applicable chemical conversion coating
- correctly disposing of waste materials
- cleaning and maintenance of equipment and tools.

The underlying skills inherent in this unit should be transferable across a range of pre-treatment tasks associated with aircraft and aircraft component aluminium alloy surfaces. It is essential that applicable processes, cleanliness requirements and safety precautions, including the correct use of PPE, and application of environmental protection procedures are fully observed, understood and complied with. Ability to interpret pre-treatment procedures and apply them in practice is critical.

This is to be demonstrated through application of conversion coatings to aluminium alloy surfaces across a range of aircraft and component tasks.

Knowledge Evidence

Evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- relevant enterprise procedures and/or process specifications
- WHS procedures relating to aluminium alloy pre-treatment processes, including PPE
- how to obtain MSDS
- types of masking and barrier materials
- types of pre-treatment processes

- environmental legislation and regulations relating to the storage, use and disposal of hazardous materials.

Assessment Conditions

- Competency should be assessed in the workplace or simulated workplace using materials, tools and equipment specified in the maintenance manuals and applicable procedures. It is also expected that general and special-purpose tools and ground support equipment would be used where appropriate.
- The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.
- The following conditions of assessment represent the requirements of the Regulators (ADF and CASA) and maintenance stakeholders and must be rigorously observed.
- A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements and performance criteria of the unit of competency are being achieved under routine supervision on a representative range of pre-treatment tasks performed at the enterprise.
- This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry Evidence Guide (for details refer to the Companion Volume Assessment Guidelines).
- Assessors must satisfy the requirements of the National Vocational Education and Training Regulator (Australian Skills Quality Authority, or its successors).

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