



Australian Government

Department of Education, Employment and Workplace Relations

MEA412A Pre-treat aluminium alloy surfaces

Revision Number: 2

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Modification History

Minor formatting and editorial changes made. Prerequisite unit version code updated.

Unit Descriptor

This unit covers the competencies required to pre-treat aircraft and aircraft component aluminium alloy surfaces prior to application of surface coatings. No licensing requirements apply to this unit at the time of publication, but compliance with legislation and regulations governing handling and disposal of hazardous materials is included in the unit. This unit is used in workplaces that operate under the airworthiness regulatory systems of the ADF and CASA.

Application of the Unit

This unit requires application of skills and knowledge relating to the application of chemical conversion coatings to aluminium alloy surfaces of aircraft and aircraft components.

Applications include fixed and rotary wing aircraft and aircraft components with aluminium alloy surfaces.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

MEA101B	Interpret occupational health and safety practices in aviation maintenance
MEA103B	Plan and organise aviation maintenance work activity
MEA105C	Apply quality standards applicable to aviation maintenance processes
MEA107B	Interpret and use aviation maintenance industry manuals and specifications
MEA108B	Complete aviation maintenance industry documentation
MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

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. **OHS requirements** are identified and complied with and 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
 - 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
 - 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

Required Skills and Knowledge

Required skills

Look for evidence that confirms skills in:

- applying OHS 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
- application of specified pre-treatment process
- water break re-testing
- using MSDS
- selecting and using applicable chemical conversion coating
- correctly disposing of waste materials
- cleaning and maintaining equipment and tools

Required knowledge

Look for evidence that confirms knowledge of:

- relevant enterprise procedures and/or process specifications
- OHS 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

Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	A person who demonstrates competency in this unit must be able to pre-treat aluminium alloy surfaces in accordance with specified procedures while using the correct PPE and observing all relevant safety precautions and environmental protection processes.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	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. Evidence of transferability of skills and knowledge related to pre-treatment is essential. This is to be demonstrated through application of conversion coatings to aluminium alloy surfaces across a range of aircraft and component tasks. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on a representative range of pre-treatment tasks. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry Evidence Guide.
Context of and specific resources for assessment	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.
Method of assessment	

Guidance information for assessment	
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Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Application of this unit may relate to:	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities
Procedures and requirements	Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise
OHS requirements	OHS requirements are identified from relevant: • state/territory/Commonwealth OHS legislation, regulations and codes • procedures manual • safety manual • work instructions • maintenance organisation manual • MSDS • Defence regulations and instructions • standing instructions
Common surface soils	Common surface soils may include: • paint • dirt • grease • oils • fuel • adhesives
Legislative, regulatory and enterprise procedures	Legislative, regulatory and enterprise procedures may include: • state/territory/Commonwealth 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 Sector(s)

Aviation maintenance

Competency field

Co-requisite units

Not applicable