

Title	Apply alloy coatings to aircraft components		
Level	4	Credits	15

Purpose	<p>People credited with this unit standard are able to: prepare to electroplate aircraft components; carry out electro-chemical deposition of alloy coating; complete post-plate component inspection; and complete the coating task.</p> <p>They are also able to operate, be in full control, and take responsibility for the process.</p>
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Classification	Aeronautical Engineering > Aeronautical Electroplating
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Available grade	Achieved
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Guidance Information

- 1 All tasks must be carried out in accordance with enterprise procedures.
- 2 Definition
Enterprise procedures – procedures used by the organisation carrying out the work and applicable to the tasks being carried out. Examples are – standard operating procedures, safety procedures, equipment operating procedures, codes of practice, quality management practices and standards, procedures to comply with legislative and local body requirements.
- 3 Acts, regulations, and bylaws regarding the handling of toxic material and waste are to be complied with during assessment against this standard.
- 4 Specifications will determine either voltage or current control.
- 5 This unit standard applies to the electro-chemical deposition of alloys such as Ti-Cad brass or bronze.
- 6 Operating parameters may include treatment times and currents, pH, temperature, anode condition.

Outcomes and performance criteria

Outcome 1

Prepare to electroplate aircraft components.

Performance criteria

- 1.1 Task is determined by reviewing maintenance documentation and enterprise procedures.
- 1.2 Component identity is confirmed with documentation.
- 1.3 Work area is prepared and checked.
- Range may include but is not limited to – materials, equipment, safety equipment, environmental conditions established.
- 1.4 Solution parameters are analysed to ensure process tolerances are met.
- 1.5 Pre-plate treatment is carried out.
- Range may include but is not limited to – non-destructive testing, heat treatment, shot peen, stress relief of part having hardness of Rockwell C40 or above.

Outcome 2

Carry out electro-chemical deposition of alloy coating.

Performance criteria

- 2.1 Component is masked.
- Range may include but is not limited to – tape, paint, lacquer, metallic foil, wax, plastic sheeting, fixtures.
- 2.2 Alloy coating is applied to component.
- 2.3 Equipment is monitored and adjusted.
- Range may include but is not limited to – solution agitation, solution temperature, current density, pH, voltage range.

Outcome 3

Complete post-plate component inspection.

Performance criteria

- 3.1 Hydrogen embrittlement is treated.
- 3.2 Quality control is carried out.
- Range may include but is not limited to – visual inspection, adhesion testing.

3.3 Coating thickness is tested.

Range may include but is not limited to – direct measurement, ultrasonic thickness gauge, coating thickness gauge; for ferrous and non-ferrous substrates.

Outcome 4

Complete the coating task.

Performance criteria

4.1 Component is prepared for use, storage, or transit.

Range may include but is not limited to – chromate conversion, inhibiting, packing.

4.2 Resources are checked for serviceability and returned to service or storage.

Range may include but is not limited to – tools, equipment, safety equipment.

4.3 Leftover parts and materials are disposed of.

Range may include but is not limited to – serviceable, unserviceable, surplus, waste, scrap, hazardous.

4.4 Documentation is completed.

Range may include but is not limited to – labels, work cards, release notes, certification.

4.5 Work area is left in a state that enables the next task to begin.

Planned review date	31 December 2024
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	26 March 2007	31 December 2016
Review	2	24 October 2014	31 December 2021
Review	3	26 March 2020	N/A

Consent and Moderation Requirements (CMR) reference	0028
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact ServiceIQ qualifications@serviceiq.org.nz if you wish to suggest changes to the content of this unit standard.