

Title	Apply metallic coatings to flight critical aircraft components		
Level	4	Credits	15

Purpose	<p>People credited with this unit standard are able to: prepare to electroplate flight critical aircraft components; carry out electro-chemical deposition of metallic coating; complete a 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 This unit standard may apply to the electro-chemical deposition of a range of metals and alloys such as chromium, nickel, cadmium, and silver.
- 5 Operating parameters may include treatment times and currents, pH, temperature, and anode condition.

Outcomes and performance criteria

Outcome 1

Prepare to electroplate flight critical 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 (NDT), heat treatment, shot peen, hardness testing, stress relief of part having hardness of Rockwell C40 or above.

1.6 Hydrogen embrittlement test sample is prepared.

1.7 Adhesion test sample is prepared.

Outcome 2

Carry out electro-chemical deposition of metallic 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 Metallic 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 a 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, post-plate NDT, accelerated corrosion test, pinhole and porosity test.

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.