

Title	Apply nickel-cadmium to aeronautical components		
Level	4	Credits	10

Purpose	<p>People credited with this unit standard are able to: prepare to electroplate aeronautical components; carry out electro-chemical deposition of a nickel-cadmium infused coating; perform post-plate treatment; and complete the electroplating 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 must be complied with during assessment against this standard.
- 4 This unit standard applies to the electro-chemical deposition of a nickel-cadmium infused coating.
- 5 Operating parameters may include treatment times and currents, pH, temperature, anode condition, high temperature diffusion and inspection.

Outcomes and performance criteria

Outcome 1

Prepare to electroplate aeronautical 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, stress relief of part having hardness of Rockwell C40 or above.
- 1.6 Component is prepared.
- Range may include but is not limited to – corrosion removal, jigging, masking.

Outcome 2

Carry out electro-chemical deposition of a nickel-cadmium infused coating.

Performance criteria

- 2.1 Solution is hand worked using a dummy cathode.
- 2.2 Component is chemically cleaned in accordance with enterprise procedures.
- Range may include but is not limited to – alkaline clean; anodic or periodic reverse cycle; acid etch.
- 2.3 Nickel is applied.
- Range may include but is not limited to – moving cathode bar; deposit thickness 0.0002-0.0004 inch.
- 2.4 Nickel deposit is visually inspected.
- 2.5 Cadmium is applied.
- Range deposit thickness 0.0001-0.0002 inch.

Outcome 3

Perform post-plate treatment.

Performance criteria

- 3.1 Conversion coating is applied.
- 3.2 Deposit is visually inspected.
- 3.3 Contact points are protected.
- Range heat resistant paint.
- 3.4 Coating is diffused by baking.
- 3.5 Diffused coating is visually inspected.

Outcome 4

Complete the electroplating task.

Performance criteria

- 4.1 Component is prepared for use, storage, or transit.
- Range may include but is not limited to – 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 2027
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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

Process	Version	Date	Last Date for Assessment
Review	3	26 March 2020	N/A
Rollover and Revision	4	26 April 2024	N/A

Consent and Moderation Requirements (CMR) reference

0028

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact Ringa Hora Services Workforce Development Council
qualifications@ringahora.nz if you wish to suggest changes to the content of this unit standard.