Title	**Apply metals to conductive aeronautical substrates using the selective (brush) plating process**		
Level	**4**	**Credits**	**10**

Purpose	People credited with this unit standard are able to: prepare to apply metals to aeronautical components; carry out electro-chemical deposition of metal to conductive aeronautical substrates; complete post-plate component inspection; and complete the plating process task.

Classification	Aeronautical Engineering > Aeronautical Electroplating

Available grade	Achieved

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 If required, applicable electro-chemical deposition procedures can be found in US Air Force MIL-STD-865, *Selective Brush Plating, Electro-Deposition*.

5 This unit standard may apply to the electro-chemical deposition of a range of metals and alloys, which may include – babbitt, cadmium, cobalt, copper, iron, nickel, nickel-cobalt, nickel-tungsten, palladium platinum, rhodium, tin, zinc, silver, and gold.

6 Processing may be manual, semi or fully automatic;
operating parameters may include treatment times and currents, pH, temperature, anode condition, cleanliness of contacts, purity.

Outcomes and performance criteria

Outcome 1

Prepare to apply metals to 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 A process flowchart is designed.

Range may include but is not limited to – technical data sheet, electro-clean, activate, pre-plate, metal or alloy.

1.5 Anode is prepared.

Range may include but is not limited to – selection, design, manufacture, material, anode cover.

1.6 Ancillary equipment is prepared.

Range may include but is not limited to – rectifier, solution pump, turning head, rotary tool, traversing arm, dial test indicator.

Outcome 2

Carry out electro-chemical deposition of metal to conductive aeronautical substrates.

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 Metal is applied to component using the selective (brush) plating process.

2.3 Equipment is monitored and adjusted.

Range may include but is not limited to – solution pump, solution temperature, current density, voltage range, anode-cathode speed.

Outcome 3

Complete post-plate component inspection.

Performance criteria

3.1 Masking material is removed.

3.2 Quality control is carried out.

Range may include but is not limited to – visual inspection, adhesion testing, accelerated corrosion testing.

3.3 Defects are rectified.

Outcome 4

Complete the plating process task.

Performance criteria

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

Range inhibiting, packing.

4.2 Solution amp-hr usage remaining is calculated and annotated.

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

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

4.4 Leftover parts and materials are disposed of.

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

4.5 Documentation is completed.

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

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

Planned review date	31 December 2027

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
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.