



Australian Government

Department of Education, Employment and Workplace Relations

MEM08020B Electroplate decorative finishes

Release: 1

MEM08020B Electroplate decorative finishes

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers applying decorative finishes to a range of ferrous and non-ferrous materials.
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Application of the Unit

Application of the unit	<p>This unit applies to electroplating decorative finishes to household fittings, hardware, artefacts and accessories. Processing may apply to manual, semi or fully automatic still or barrel plating environments and may include volume production and 'one-off' components.</p> <p>Use of plating techniques, solutions and compositions for decorative finishes, recognition and assessment of impurities and imperfections and associated corrective actions are integral to all applications.</p> <p>Work is undertaken autonomously or in a team environment using predetermined standards of quality, safety.</p> <p>All work is undertaken to accepted industry OH&S practices and to legislative requirements where applicable.</p> <p>For pre-treatment operations Unit MEM08011B (Prepare surfaces using solvents and/or mechanical means) and/or Unit MEM08012B (Prepare surfaces by abrasive blasting [basic]) should be selected. For basic inspection of completed or partly completed products produced by others Unit MEM15004B (Perform inspection) should be selected. Where dogging/lifting is undertaken, the appropriate materials handling units should be selected. For construction of anodes, shields/robbars etc., the appropriate fabrication units should be selected.</p> <p>For straightforward operation/monitoring of electroplating processes, Unit MEM08003C (Perform electroplating operations) should be selected.</p> <p>Band: A</p> <p>Unit Weight: 6</p>
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM07001B	Perform operational maintenance of machines/equipment
	MEM08001B	Wire, jig and barrel load/unload work
	MEM08003C	Perform electroplating operations
	MEM13003B	Work safely with industrial chemicals and materials
	MEM18001C	Use hand tools

Employability Skills Information

Employability skills	This unit contains employability skills.
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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

ELEMENT	PERFORMANCE CRITERIA
1. Select treatments and processes/equipment for producing decorative finishes	1.1. Appropriate treatment processes are selected according to base metal type, surface condition and relevant job specifications. 1.2. Mass treatment processes are selected and carried out, where applicable. 1.3. Pre-plating treatments are identified. 1.4. Process parameters are selected to achieve required coating. 1.5. Appropriate equipment is selected.
2. Monitor and control decorative finish processes and operating conditions	2.1. Operating parameters are set to produce required decorative finish/specifications. 2.2. Plate appearance and final finish are monitored and confirmed and abnormalities are identified. 2.3. Corrective actions are taken to rectify non-conforming conditions. 2.4. Pre-treatment processes are carried out, where applicable. 2.5. Racks, jigs and barrels are checked for correct loading.
3. Maintain solutions for decorative finishes	3.1. Solution compositions are checked and confirmed to specification/operating range. 3.2. Adjustment requirements/additions are identified. 3.3. Additions are made to adjust solution composition to correct operating range. 3.4. Purification procedures are carried out as appropriate. 3.5. Anodes are maintained to ensure correct operation.
4. Maintain equipment for decorative finishes	4.1. Performance of ancillary equipment is checked and remedial actions are taken as necessary. 4.2. Electrical contacts are maintained. 4.3. Process transfer equipment is maintained.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

REQUIRED SKILLS AND KNOWLEDGE

Required skills

Look for evidence that confirms skills in:

- maintaining equipment
- maintaining satisfactory electrical contact
- planning and sequencing work operation
- reading and interpreting routine information on written job instructions, specifications and standard operating procedures. May include drawings
- following oral instructions
- entering routine and familiar information onto proformas and standard workplace forms

Required knowledge

Look for evidence that confirms knowledge of:

- specific pre-treatment processes - common base metals/soils, chemical/mechanical
- effect of decorative treatment on different metals
- functions of strikes/activation treatment
- process parameters, including current computations
- effects of parameters on performance
- post treatment processes
- Australian standards
- application of different equipment to the type of work processed
- acceptable appearances including final specification/quality
- abnormalities
- requirements for post treatments
- types of defects
- factors affecting plate distribution
- purpose and application of simple control tests
- calculations for additions/adjustments to solutions
- effects of adding chemicals too quickly
- purification procedures/treatments
- operation of anodes, arrangements, remedial action
- effects of build-up on cathode contacts, damage to rack coatings
- any applicable industry standards, national/Australian standards, NOHSC guides, state/territory regulatory codes of practice/standards
- use and application of personal protective equipment
- safe work practices and procedures
- relevant hazards and control measures related to the competency

Evidence Guide

EVIDENCE GUIDE	
<p>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.</p>	
<p>Overview of assessment</p>	<p>A person who demonstrates competency in this unit must be able to electroplate decorative finishes. Competency in this unit cannot be claimed until all prerequisites have been satisfied.</p>
<p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</p>	<p>Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.</p>
<p>Context of and specific resources for assessment</p>	<p>This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate.</p> <p>This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with electroplating decorative finishes or other units requiring the exercise of the skills and knowledge covered by this unit.</p>
<p>Method of assessment</p>	<p>Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.</p>

EVIDENCE GUIDE

Guidance information for assessment	
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Range Statement**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.

Decorative finishes	Decorative finishes would include nickel, chrome, copper, silver, gold and rhodium
Treatment processes	Pre-treatment, electroplating, electroforming, electroless plating, electrophoretic coating, post treatment plating out, carbon and chemical treatments for decorative finish solutions
Pre-plating treatments	Pre-treatments for common base metals and soils can be given, including degreasing, soak/cleaning, electrolytic cleaning, activating dips
Equipment	Wire racks, handling equipment, barrels, jigs, shields, robbers, etc. Performance requirements and basic maintenance checks for rectifier, bus bars, agitation, heating/cooling, extraction and tank linings
Operating parameters	Calculation and setting of treatment times and currents, bath pH, temperatures and densities, agitation rate, process (deposition) time, solution levels and compositions, purification procedures
Abnormalities	Abnormalities associated with decorative plating and their causes, including poor/uneven brightness/texture, inadequate levelling, roughness, pitting, poor adhesion, blistering, burning, poor plate coverage (particularly chromium), incorrect colour (particularly flash

RANGE STATEMENT	
	brass, gold)
Maintain solutions	Typical tests for pH density and titration, calculation of adjustments to relevant solutions
Solution compositions	Cleaning, pickling, electroplating, chromate solutions and acid dips
Anodes	Soluble, insoluble auxiliary anodes, etc.
Maintain equipment	Anode condition, electrical contacts etc.
Process transfer equipment	Baskets, spreader bars, racks, hooks etc.

Unit Sector(s)

Unit sector	
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Co-requisite units

Co-requisite units		

Competency field

Competency field	Surface finishing
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