



Australian Government

Department of Education, Employment and Workplace Relations

MEM08003C Perform electroplating operations

Release: 1

MEM08003C Perform electroplating operations

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	
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Application of the Unit

<p>Application of the unit</p>	<p>This unit applies to a range of metal plating processes in the electroplating, electronics, jewellery manufacture, and metal fabrication industries. It covers the general operation, monitoring and adjustment of manual, semi and automatic electroplating processes. It includes volume production and 'jobbing' involving rack and barrel type processes.</p> <p>This unit should not be selected if Unit MEM07025B (Perform advanced machine/process operation) has already been selected. Where simple operating and monitoring of the electroplating process is required, Unit MEM07024B (Operate and monitor machine/process) should be considered</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	Perform wire, jig and barrel load/unload work
	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. Identify electroplating requirements	1.1. Electroplating requirements are identified. 1.2. Untreated materials and required electroplating treatment are identified.
2. Prepare for electroplating process	2.1. Materials and racking arrangement are checked for non-conformance to specifications/job requirements. 2.2. All plant and equipment relevant to process are checked for compliance with safety and operational requirements. 2.3. Instrumentation/gauges are checked for operation. 2.4. Condition of solution is checked.
3. Perform electroplating operations	3.1. Operation steps are carried out in correct sequence according to standard operating procedures or work instructions. 3.2. Safety precautions are observed.
4. Recognise and rectify process deviations	4.1. Compliance with operating parameters is ensured. 4.2. Uncontrollable variances are reported to appropriate persons. 4.3. Adjustments are made to rectify process deviation. 4.4. Finished products are visually inspected for compliance to specification.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
Look for evidence that confirms skills in: <ul style="list-style-type: none"> • recognising deviations and faults in product/equipment/process • identifying machine process requirements, untreated materials and process sequences • identifying incorrectly loaded work • inspecting job surface conditions • checking plant and equipment for conformance to safety and operational requirements

REQUIRED SKILLS AND KNOWLEDGE

- checking solution levels and identifying visible contamination such as solution clarity, oil, surface contamination
- maintaining required contacts and immersions while moving materials
- monitoring operating parameters, identifying deviations and making required adjustments
- adjusting settings such as voltage, current and temperature within permissible limits
- correcting deviations within scope operator's control
- reading and interpreting routine information on written job instructions, specifications and standard operating procedures. May include drawings
- following oral instructions
- performing calculations using formulae

Required knowledge

Look for evidence that confirms knowledge of:

- basic knowledge of electroplating process, machine components, treatment solutions, process parameters
- a basic knowledge of electroplating solutions and handling procedures
- treatment stages
- information relevant to plating products, treatment baths, settings
- characteristics of a variety of base materials that can be plated
- pre-treatment s, treatments and post treatments in relation to task requirements
- required equipment checks
- hazards and control measures associated with electroplating processes
- operational requirements of all plant and equipment associated with the relevant process
- the purpose and typical settings of different instruments/gauges
- sequences and requirements involved in moving materials
- the range of adjustments permissible for given operating parameters including voltage, current and temperature
- variances outside the control of the operator
- common faults and imperfections/deviations
- adjustments to suit specific process deviations
- effects of rust, corrosion and other contaminants
- the reasons for rejecting incorrectly loaded work
- safe operating procedures, safety and personal protective equipment, hazards of specific solutions

Evidence Guide

EVIDENCE GUIDE

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.

Overview of assessment

A person who demonstrates competency in this unit must be able to start up, operate and monitor an electroplating process. Competency in this unit cannot be claimed until all prerequisites have been satisfied.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

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.

Context of and specific resources for assessment

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.

This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with starting up, operating and monitoring an electroplating process or other units requiring the exercise of the skills and knowledge covered by this unit.

Method of assessment

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.

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.

Electroplating requirements	Coating thickness, appearance, ductility, hardness, corrosion resistance, wear
Untreated materials	Steel, copper, brass, cast iron, stainless steel
Electroplating treatment	<ul style="list-style-type: none"> • Pre-treatment • Electroplating operations • Post treatment
Checked	Equipment checking includes componentry, electrodes, circuitry equipment
Instruments and gauges	<ul style="list-style-type: none"> • Volt meters, AMP meters, temperature recorders/indicators • AMP per hour meters
Electroplating operations	Engineering coatings, protective finishes, decorative plating
Work instructions	Standard operating procedures, verbal and written job instructions, job cards, specifications, drawings
Adjustment	Time, temperature, current density, voltage
Visual inspection	Surface texture, brightness, free from roughness, pitting, cracking, machining marks

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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