



Australian Government

Department of Education, Employment and Workplace Relations

MEM05001B Perform manual soldering/desoldering - electrical/electronic components

Release: 1

MEM05001B Perform manual soldering/desoldering - electrical/electronic components

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers performing manual soldering/desoldering for the installation and fabrication of electrical/electronic components.
------------------------	--

Application of the Unit

Application of the unit	Work is undertaken in a production or maintenance environment using predetermined standards of quality, safety and work procedures. Component protection procedures are predetermined. Depending on the actual soldering job, hand and power tools and measuring skills may be required. These are covered by other units such as Unit MEM18001C (Use hand tools), Unit MEM18002B (Use power tools/hand held operations) and appropriate measurement units. This unit does not include skills in silver soldering or brazing skills. These skills are covered in Unit MEM05006B (Perform brazing and/or silver soldering). Where soldering and desoldering is limited to the straightforward termination, disconnection or reconnection of electrical wiring then see Unit MEM10002B (Terminate and connect electrical wiring). Advanced specification and high reliability soldering associated with the installation of electrical/electronic components, in areas where reliability of connections is critical, is covered by Unit MEM05002B (Perform high reliability soldering and desoldering). Band: A Unit Weight: 4
--------------------------------	--

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
-----------------------------	--

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.
---	--

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare materials for soldering	1.1. Materials preparation instructions are followed. 1.2. Materials are prepared using correct tools, equipment, materials and procedures. 1.3. Materials are prepared to specifications using instruction or standard operating procedures.
2. Solder materials	2.1. Correct soldering techniques, procedures, materials and soldering tools are selected. 2.2. Materials to be jointed, mounted, shaped are to specification using standard operating procedures. 2.3. Solder is applied using correct and appropriate techniques. 2.4. Where appropriate, excess material is removed using correct tools and techniques. 2.5. Procedures for the protection of components are observed according to standard operating procedures.
3. Inspect solder joints	3.1. Inspection procedure is undertaken to standard operating procedures. 3.2. Inspection results are reported/recorded to standard operating procedures as required.
4. Undertake desoldering	4.1. Correct and appropriate techniques, procedures, desoldering tools and equipment are selected for given task. 4.2. Materials/components are desoldered using correct procedure and minimising damage to materials/components. 4.3. Material/components are removed and cleaned to specifications using standard operating procedures.

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:

- performing routine soldering
- performing desoldering
- undertaking material preparation

REQUIRED SKILLS AND KNOWLEDGE

- reading and interpreting routine information on written job instructions, specifications and standard operating procedures
- following oral instruction

Required knowledge

Look for evidence that confirms knowledge of:

- cleaning solutions and properties and cleaning procedures
- use and application of personal protective equipment for manual soldering/desoldering
- safe work practices and procedures
- methods of joint preparation
- properties of fluxes and their uses
- heat and damage protection procedures
- procedures for preventing electrostatic discharge damage
- soldered joint testing and inspection procedures
- reworking procedures and precautions

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 perform manual soldering/desoldering of electrical/electronic components.
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 manual soldering/desoldering for the installation and fabrication of electrical/ electronic components 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	
--	--

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.

Materials	Solder (solid, resin core and paste), flux (resin or powder) etc.
Instructions	Verbal or written job sheet
Tools	Soldering irons, cutters, brushes, files, soldering tips, solder syringes, holding devices etc.
Inspection procedures	Visual, mechanical or electric techniques with pre-setup equipment

Unit Sector(s)

Unit sector	
--------------------	--

Co-requisite units

Co-requisite units	

Competency field

Competency field	Fabrication
------------------	-------------