



Australian Government

MEM05006 Perform brazing and/or silver soldering

Release: 1

MEM05006 Perform brazing and/or silver soldering

Modification History

Release 1. Supersedes and is equivalent to MEM05006C Perform brazing and/or silver soldering

Application

This unit of competency defines the skills and knowledge required to perform brazing (including braze welding) and/or silver soldering and includes the preparation of materials and equipment and the inspection of the completed work.

It applies to silver soldering and brazing using all grades of silver solder and braze.

Where the interpretation of technical drawings is required unit MEM09002 Interpret technical drawing should also be selected.

Where the selection and use of engineering measuring equipment is required unit MEM12023 Perform engineering measurements should also be selected.

Where the selection and use of tools is required see unit MEM18001 Use hand tools and unit MEM18002 Use power tools/hand held operations, should also be selected as appropriate.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Band: A

Unit Weight: 2

Pre-requisite Unit

MEM11011	Undertake manual handling
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information

Competency Field

Fabrication

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
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Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
1	Determine job requirements	1.1	Follow standard operating procedures (SOPs)
		1.2	Comply with work health and safety (WHS) requirements at all times
		1.3	Use appropriate personal protective equipment (PPE) in accordance with SOPs
		1.4	Identify job requirements from specifications, sketches, job sheets or work instructions
2	Prepare heating equipment	2.1	Select the correct process to meet the job specifications
		2.2	Ensure heating equipment is in safe working condition
		2.3	Assemble heating equipment and set up according to SOPs
		2.4	Determine and set gas pressures
3	Prepare materials	3.1	Select and prepare consumables
		3.2	Prepare materials using appropriate tools and techniques
		3.3	Assemble/align materials to meet specifications
		3.4	Identify distortion prevention measures and take appropriate action
		3.5	Undertake test run and verify
4	Braze and/or silver solder	4.1	Preheat materials as required
		4.2	Apply consumables using appropriate techniques
		4.3	Apply jointing material in appropriate quantities
		4.4	Anneal material where required

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Performance criteria describe the performance needed to demonstrate achievement of the element.

5 Inspect joints

5.1 Remove excess jointing materials

5.2 Inspect joints and report/record inspection results according to SOPs

Foundation Skills

This section describes those required skills (reading, writing, oral communication and numeracy) that are essential to workplace performance in this unit of competency.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Materials include one (1) or more of the following:

- ferrous
- non-ferrous

Fuel gases include one (1) or more of the following:

- acetylene
- liquefied petroleum gas (LPG)
- hydrogen

Heating equipment includes the following:

- gas cylinders
- hoses
- blowpipes
- tips and nozzles
- regulators
- flashback arrestors

Consumables include one (1) or more of the following:

- fluxes (resin or powder)
- all types of silver solder
- brazing grades

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Process includes one (1) or more of the following:

- brazing
- braze welding
- silver soldering

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM05006C Perform brazing and/or silver soldering

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>

Assessment Requirements for MEM05006 Perform brazing and/or silver soldering

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria on at least two (2) occasions and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- checking condition of equipment
- setting up:
 - gas cylinders
 - hoses
 - blowpipes
 - tips and nozzles
 - regulators
 - flashback arrestors
- preparing to braze and/or silver solder by assembling/aligning materials in an appropriate manner and applying distortion prevention methods to meet specifications
- applying consumables and brazing and/or silver soldering ferrous and non-ferrous materials
- annealing material using appropriate techniques
- inspecting joints and removing excess jointing materials and recording the results.

Knowledge Evidence

Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include knowledge of:

- safe work practices and procedures and use of personal protective equipment (PPE)
- potential equipment faults
- reasons for selecting specific methods of assembly/alignment
- procedures for minimising distortion of the materials being brazed/braze welded/silver soldered
- procedures for assembling and setting up the specific heating equipment and reasons for selection
- reasons for selecting specific consumables
- procedures for preheating the materials to be joined and precautions to be observed

- conducting test runs
- procedures for normalising the temperature of jointed materials and the consequences of inappropriate techniques
- typical applications of brazing/braze welding and silver soldering processes
- procedures for removing excess jointing material
- effects of the use of inappropriate techniques and quantities of jointing material on the performance of the jointed materials
- procedures for inspecting brazed/braze welded/silver soldered joints.

Assessment Conditions

- Assessors must:
 - have vocational competency in performing brazing and or silver soldering at least to the level being assessed with relevant industry knowledge and experience
 - satisfy the assessor requirements in the *Standards for Registered Training Organisations 2015* or its replacement and comply with the *National Vocational Education and Training Regulator Act 2011*, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory as the case requires
- Where possible assessment must occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

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