



Australian Government

MEM05004 Perform routine oxy fuel gas welding

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Modification History

Release	Comments
2	Unit code updated in Application to reflect status.
1	This unit of competency was first released in MEM Manufacturing and Engineering Release 2.0.

Application

This unit of competency defines the skills and knowledge required to prepare materials and perform routine oxy fuel gas welding of mild/low carbon steel and cast iron where the welding is not required to meet an Australian Standard or equivalent.

Where welding is required to meet AS 1554 General Purpose or equivalent codes, work health and safety (WHS) regulations and/or licensing requirements MEM05097 Weld using oxy fuel gas welding process should also be selected.

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 unit MEM18001 Use hand tools and unit MEM18002 Use power tools/hand held operations should also be selected as appropriate.

Band: A

Unit Weight: 2

Licensing/Regulatory Information

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

Pre-requisite unit(s)

MEM11011 Undertake manual handling

MEM13015 Work safely and effectively in manufacturing and engineering

MEM16006 Organise and communicate information

Competency field(s)

Fabrication

Unit sector(s)

N/A

Elements and Performance Criteria

Elements	Performance Criteria
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 equipment for welding	2.1 Check condition of gas handling equipment 2.2 Assemble and set up fuel gas welding equipment according to SOPs 2.3 Determine and set gas pressures 2.4 Select consumables
3. Prepare materials for welding	3.1 Identify location of welds in accordance with job specifications 3.2 Clean and prepare materials ready for welding
4. Perform routine welding using oxy fuel gas	4.1 Weld materials to job requirements 4.2 Clean welds 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.	
Fuel gases include one (1) or more of the following:	• acetylene • liquefied petroleum gas (LPG) • hydrogen.
Materials include one (1) or more of the following:	• mild/low carbon steel • cast iron.
Consumables include one (1) or more of the following:	• filler rods • fluxes.
Welds include the following:	• butt • fillet.
Preparation includes one (1) or more of the following:	• preheating • setting up jigs • fixtures • clamps • joint preparation.
Fuel gas welding equipment includes the following:	• gas cylinders • hoses • blowpipes • tips and nozzles • regulators • flashback arrestors.

Unit Mapping Information

Current Code and Title	Previous Code and Title	Comments	Equivalence
MEM05004 Perform routine oxy fuel gas welding	MEM05004C Perform routine oxy acetylene welding	Supersedes and is equivalent to MEM05004C Perform routine oxy acetylene welding	Equivalent

Assessment Requirements for MEM05004 Perform routine oxy fuel gas welding

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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
- cleaning and preparing materials for welding
- setting up:
 - gas cylinders
 - hoses
 - blowpipes
 - tips and nozzles
 - regulators
 - flashback arrestors
- selecting settings and consumables
- butt and fillet weld materials to comply with specifications
- cleaning welds according to SOPs.

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 welding practices and procedures and use of personal protective equipment (PPE)
- preparatory requirements
- equipment and equipment settings

- purpose of, and setting up requirements, of:
 - gas cylinders
 - hoses
 - blowpipes
 - tips and nozzles
 - regulators
 - flashback arrestors
- fuel gas properties and applications
- weld characteristics.

Assessment Conditions

- Assessors must:
 - have vocational competency in performing routine oxy fuel gas welding 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.

Link

Companion volumes, including implementation guides, are found on the national training register - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=45a7f1d5-61a5-447a-9688-7abbd7e1a5c7>.