



Australian Government

MEM05055 Weld using oxy fuel gas welding process

Release: 2

MEM05055 Weld using oxy fuel gas welding process

Modification History

Release 2. Quantum of hours of workplace practice removed. Supersedes and is equivalent to MEM05055 Weld using oxy fuel gas welding process (Release 1).

Release 1. New unit.

Application

This unit has been primarily developed for Engineering Tradesperson - Fabrication apprenticeship training and the recognition of trade-level skills in oxy fuel gas welding on heavy or light metal fabrications. It may also apply to other trade occupations requiring higher level oxy fuel gas welding skills.

Weld quality would typically conform to AS 1554 General Purpose and American Bureau of Shipping (ABS) or equivalent.

Where manual thermal processes associated with preparation, pre-heat and/or post-heat is required unit MEM05007 Perform manual heating and thermal cutting and unit MEM05008 Perform advanced manual thermal cutting, gouging and shaping, 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: 4

Pre-requisite Unit

MEM05004	Perform routine oxy fuel gas welding
MEM05051	Select welding processes
MEM05052	Apply safe welding practices
MEM09002	Interpret technical drawing
MEM11011	Undertake manual handling
MEM12023	Perform engineering measurements
MEM12024	Perform computations
MEM13015	Work safely and effectively in manufacturing and engineering
MEM14006	Plan work activities

MEM16006	Organise and communicate information
MEM18001	Use hand tools
MEM18002	Use power tools/hand held operations

Competency Field

Fabrication

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.								
1 Determine job requirements	<table><tr><td>1.1</td><td>Follow standard operating procedures (SOPs)</td></tr><tr><td>1.2</td><td>Comply with work health and safety (WHS) requirements at all times</td></tr><tr><td>1.3</td><td>Use appropriate personal protective equipment (PPE) in accordance with SOPs</td></tr><tr><td>1.4</td><td>Identify job requirements from specifications, drawings, job sheets or work instructions</td></tr></table>	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, drawings, job sheets or work instructions
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2 Prepare materials for oxy fuel gas welding oxy fuel gas	<table><tr><td>2.1</td><td>Prepare materials to achieve the required weld requirements</td></tr><tr><td>2.2</td><td>Assemble/align materials to specification, where required</td></tr></table>	2.1	Prepare materials to achieve the required weld requirements	2.2	Assemble/align materials to specification, where required				
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3 Select, assemble and set up welding equipment and consumables	<table><tr><td>3.1</td><td>Identify and select welding equipment and consumables appropriate to job requirements</td></tr><tr><td>3.2</td><td>Assemble welding equipment and set up in accordance with SOPs</td></tr></table>	3.1	Identify and select welding equipment and consumables appropriate to job requirements	3.2	Assemble welding equipment and set up in accordance with SOPs				
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4 Minimise and rectify distortion	<table><tr><td>4.1</td><td>Apply appropriate distortion prevention measures</td></tr><tr><td>4.2</td><td>Rectify any distortion using appropriate techniques</td></tr></table>	4.1	Apply appropriate distortion prevention measures	4.2	Rectify any distortion using appropriate techniques				
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| 5 | Weld to job specification using oxy fuel gas | 5.1 | Ensure weld deposit is to specifications |
| | | 5.2 | Clean joints to specifications |
| 6 | Ensure weld conformance | 6.1 | Inspect weld joints visually for conformance to specifications |
| | | 6.2 | Rectify any weld defects with minimum loss of sound metal using correct techniques and tools |
| | | 6.3 | Complete weld records, where required |

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.

Welds include the following:

- fillet
- butt

Weld positions include the following:

- horizontal
- vertical
- overhead

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

- ferrous materials
- non-ferrous metals
- alloys suitable for oxy fuel gas welding

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Preparation of materials includes one (1) or more of the following:

- pre-heating
- setting up of jigs
- fixtures and clamps
- joint preparation (e.g. bevelling)

Distortion prevention measures include one (1) or more of the following:

- pre-heating
- setting up:
 - jigs
 - fixtures
 - clamps

Equipment includes the following:

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

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

- porosity
- slag inclusions
- discontinuities
- lack of penetration
- undercut

Unit Mapping Information

Release 2. Supersedes and is equivalent to MEM05055 Weld using oxy fuel gas welding process (Release 1).

Release 1. New unit.

Links

Companion Volume implementation guides are found in VETNet -

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