



Australian Government

MEM05075 Perform advanced welding using oxy acetylene welding process

Release: 1

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Modification History

Release 1. Unit code changed. Changes to prerequisites, performance evidence and knowledge evidence. Supersedes and is not equivalent to MEM05022 Perform advanced welding using oxy acetylene welding process.

Application

This unit of competency has been developed for engineering fabrication trade training and the recognition of trade skills in advanced welding using oxy acetylene welding.

It defines the skills and knowledge required to plan, prepare for, and carry out advanced welding using oxy acetylene welding as defined in the unit, in combination with its prerequisites. The required welding may be specified in a relevant Australian or international standard or code and/or in a relevant welding procedure specification (WPS).

Where the welding associated with this unit also requires advanced manual thermal cutting, gouging and shaping, the unit MEM05071 Perform advanced manual thermal cutting, gouging and shaping must also be selected. Where the welding associated with this unit also requires the application of welding to codes and standards, the unit MEM05062 Apply welding and welding related codes and standards must be selected. Where the welding associated with this unit also requires the welding to be undertaken according to a formal WPS, the unit MEM05068 Apply weld procedure specifications must also be selected. Where formal weld records associated with the application of this unit are required to be maintained, the unit MEM05065 Maintain weld records must also be selected.

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
MEM05007 Perform manual heating and thermal cutting
MEM05052 Apply safe welding practices
MEM05085 Select welding processes
MEM05097 Weld using oxy fuel gas welding process
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	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 including relevant standards and codes from specifications, drawings, job sheets or work instructions
2. Prepare materials for welding	2.1 Prepare materials to achieve the required weld requirements 2.2 Assemble and/or align materials to specification in accordance with SOPs
3. Select, assemble and set up welding equipment and consumables	3.1 Identify and select welding equipment and consumables according to job requirements 3.2 Assemble and set up welding equipment in accordance with SOPs
4. Weld joints to specifications using oxy acetylene welding	4.1 Apply appropriate distortion prevention measures 4.2 Ensure weld is to specifications 4.3 Clean joints to specifications 4.4 Rectify any distortion using appropriate techniques
5. Ensure weld conformance	5.1 Inspect weld joints visually for conformance to specifications 5.2 Rectify any cracks or defects with minimum loss of sound metal using correct and appropriate techniques and tools

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	5.3 Complete weld records in accordance with SOPs

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

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:	fillet and butt welds in the horizontal, vertical and overhead positions.
Materials include one or more of the following:	low carbon steel: • plate • pipe • tube • round bar.
Fuel gases include one or more of the following:	• acetylene • liquefied petroleum gas (LPG) • hydrogen.
Equipment includes the following:	• cylinders • regulators • hoses • torches • tips • flash back arrestors.
Consumables include the following:	• appropriate fuel gas • filler rods • fluxes.

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Preparation includes one or more of the following:

- pre-heating
- setting up of jigs, fixtures and clamps
- joint preparation

Distortion prevention measures include one or more of the following:

- pre-heating
- setting up of jigs
- fixtures and clamps.

Defects include one or more of the following:

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

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -

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