



Australian Government

MEM05058 Perform welds to code standards using oxy fuel gas welding process

Release: 2

MEM05058 Perform welds to code standards using oxy fuel gas welding process

Modification History

Release 2. Quantum of hours of workplace practice removed. Supersedes and is equivalent to MEM05058 Perform welds to code standards using oxy fuel gas welding process (Release 1).

Release 1. New unit.

Application

This unit of competency defines the skills and knowledge required to prepare and produce welds to code standards using oxy fuel gas welding on a range of materials.

Butt and fillet welds in the flat, horizontal, vertical and overhead positions would be applied to meet AS 1210-2010 Pressure vessels, AS 4041-2006 (R2016) Pressure piping, and American Society of Mechanical Engineers (ASME) IX or equivalent. This unit, together with Unit MEM05026 Apply welding principles, may satisfy the requirements AS 1796-2001 (R2016) Certification of welders and welding supervisors, Certificate 6.

Where advanced manual thermal cutting, gouging and shaping is required Unit MEM05008 Perform advanced manual thermal cutting, gouging and shaping should also be selected.

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

Band: B

Unit Weight: 6

Pre-requisite Unit

MEM05004	Perform routine oxy fuel gas welding
MEM05007	Perform manual heating and thermal cutting
MEM05022	Perform advanced welding using oxy acetylene welding process
MEM05026	Apply welding principles
MEM05051	Select welding processes
MEM05052	Apply safe welding practices
MEM05055	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 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, drawings, job sheets or work instructions
2	Prepare welding materials and equipment for GW welding to code standard	2.1	Prepare materials to produce weld to code standard
		2.2	Perform routine maintenance on welding equipment
		2.3	Set up welding equipment
3	Weld joints using GW to procedure	3.1	Weld materials in accordance with weld procedure specification

Elements describe the essential outcomes.

specifications

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

- 3.2 Rectify discontinuities to ensure compliance to code requirements
- 3.3 Maintain weld records 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.

Routine maintenance includes the following:

- ensuring oxy fuel gas welding equipment is in good condition

Equipment includes the following:

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

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

- joint preparation:
 - flame cut and ground
 - machined
- preheating
- setting up:
 - jigs
 - fixtures
 - clamps

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:

- carbon/manganese steel
- stainless steel
- low alloy steel

Unit Mapping Information

Release 2. Supersedes and is equivalent to MEM05058 Perform welds to code standards 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>

Assessment Requirements for MEM05058 Perform welds to code standards using oxy fuel gas welding process

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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
- identifying and interpreting specifications from drawings, sketches and verbal or written job instructions for performing welds using oxy fuel gas welding to code standards
- cleaning and preparing materials for welding to specifications
- setting up welding equipment, including performing routine maintenance
- consistently weld materials to specifications
- rectifying any discontinuities
- completing and maintaining weld records related to oxy fuel gas welding to code standards onto standard workplace forms.

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)
- requirements to produce welds to quality of AS 1210-2010 Pressure vessels, AS 4041-2006 (R2016) Pressure piping, and American Society of Mechanical Engineers (ASME) IX or equivalent
- relevant standards or codes
- purpose of and setting up requirements of:
 - gas cylinders
 - hoses
 - blowpipes
 - tips and nozzles
 - regulators
 - flashback arrestors
- methods for preparing plate for code standard welding

- causes of weld defects and methods of rectification
- pre-welding and post-welding heating methods and requirements for plate welding to code standard
- requirements for maintaining weld records to code standard.

Assessment Conditions

- Assessors must:
 - have vocational competency in performing welds to code standards using oxy fuel gas welding process 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.
- Assessment must occur in a functioning workplace. Where assessment in the workplace would be unsafe, impractical or threatens the environment, assessment must occur in a sufficiently rigorous simulated environment that reflects the circumstances that would be experienced in a functioning workplace. Assessment must cover all aspects of workplace performance, including 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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