



Australian Government

MEM05044 Perform welds to code standards using gas tungsten arc welding process

Release: 2

MEM05044 Perform welds to code standards using gas tungsten arc welding process

Modification History

Release 2. Quantum of hours of workplace practice removed. Supersedes and is equivalent to MEM05044 Perform welds to code standards using gas tungsten arc welding process (Release 1).

Release 1. Supersedes and is equivalent to MEM05044B Perform welds to code standards using gas tungsten arc welding process.

Application

This unit of competency defines the skills and knowledge required to prepare and produce welds to code standards using gas tungsten arc welding (GTAW) 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. The unit, together with unit MEM05026 Apply welding principles, may satisfy the requirements of AS 1796-2001 (R2016) Certification of welders and welding supervisors, Certificate 7.

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

MEM05007	Perform manual heating and thermal cutting
MEM05019	Weld using gas tungsten arc welding process
MEM05020	Perform advanced welding using gas tungsten arc welding process
MEM05026	Apply welding principles
MEM05049	Perform routine gas tungsten arc 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	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 GTAW 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

Elements describe the essential outcomes.

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

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|---|---|-----|---|
| 3 | Weld joints using GTAW to procedure specifications | 3.1 | Weld materials in accordance with weld procedure specification |
| | | 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 hand piece, gas shroud and flow meter are in good condition

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

- flame cut and ground or machined
- preheating
- setting up of jigs, fixtures and clamps

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

- carbon/manganese steel on plate, pipe and rolled sections
- low alloy steel on plate, pipe and rolled steel sections
- aluminium on plate, pipe and rolled sections

Unit Mapping Information

Release 2. Supersedes and is equivalent to MEM05044 Perform welds to code standards using gas tungsten arc welding process (Release 1).

Release 1. Supersedes and is equivalent to MEM05044B Perform welds to code standards using gas tungsten arc welding process.

Links

Companion Volume implementation guides are found in VETNet -

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