



**Australian Government**

**MEM05046 Perform welds to code standards using manual metal arc welding process**

**Release: 2**

# MEM05046 Perform welds to code standards using manual metal arc welding process

## Modification History

Release 2. Quantum of hours of workplace practice removed. Supersedes and is equivalent to MEM05046 Perform welds to code standards using manual metal arc welding process (Release 1).

Release 1. Supersedes and is equivalent to MEM05046B Perform welds to code standards using manual metal arc welding process.

## Application

This unit of competency defines the skills and knowledge required to prepare and produce welds to code standards using manual metal arc welding (MMAW) 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 of AS 1796-2001 (R2016) Certification of welders and welding supervisors, Certificates 1, 1E, 3 and 3E.

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
MEM05012	Perform routine manual metal arc welding
MEM05015	Weld using manual metal arc welding process
MEM05016	Perform advanced welding using manual metal arc welding process
MEM05026	Apply welding principles
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	<b>Determine job requirements</b>	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	<b>Prepare welding materials and equipment for MMAW welding</b>	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.

**to code standard**

- |   |  |
|---|--|
| <b>3 Weld joints using MMAW to procedure specifications</b> | <b>3.1</b> Weld materials in accordance with weld procedure specification    |
|   | <b>3.2</b> Rectify discontinuities to ensure compliance to code requirements |
|   | <b>3.3</b> 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 leads and hand pieces are in good condition and the correct current carrying capacity

**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
- stainless steel
- low alloy steel

## Unit Mapping Information

Release 2. Supersedes and is equivalent to MEM05046 Perform welds to code standards using manual metal arc welding process (Release 1).

Release 1. Supersedes and is equivalent to MEM05046B Perform welds to code standards using manual metal 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>