



Australian Government

MEM05093 Weld using submerged arc welding process

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM05023 Weld using submerged arc welding process.

Application

This unit of competency defines the skills and knowledge required to carry out submerged arc welding (SAW) where the welds are more likely to be associated with heavy rather than with light fabrication.

Weld quality must conform to AS 1554 General Purpose (GP) or equivalent.

Where the interpretation of technical drawings is required unit MEM09002 Interpret technical drawing should also be selected.

Where the selection and use of tools is required, the unit MEM18001 Use hand tools and the unit MEM18002 Use power tools/hand held operations, must 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

MEM05052	Apply safe welding practices
MEM05057	Perform routine submerged arc welding
MEM05085	Select welding processes
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 from specifications, sketches, job sheets or work instructions
2. Prepare materials for welding	2.1 Prepare materials to achieve required weld requirements 2.2 Assemble and/or align materials to specifications in accordance with SOPs
3. Select, assemble and set up welding equipment and consumables	3.1 Identify and select welding machine settings and consumables from job requirements, welding procedures and specifications and/or technical drawings 3.2 Assemble and set up direct current (DC) welding equipment 3.3 Undertake test runs and verify in accordance with specifications
4. Minimise and rectify distortion	4.1 Apply appropriate distortion prevention measures 4.2 Rectify any distortion using appropriate techniques
5. Weld joints using submerged arc by correct process	5.1 Deposit pad, butt and fillet welds in flat, and fillet welds in horizontal position, to specification 5.2 Clean joints to specifications using techniques and tools appropriate to defect, material and process
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 Maintain weld records in accordance with 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.

Welds include:	fillet and butt in flat and horizontal positions.
Materials include:	carbon and stainless steel.
Preparation includes one or more of the following:	<ul style="list-style-type: none"> • pre-heating • setting up of jigs, fixtures and clamps • joint preparation.
Distortion prevention measures include one or more of the following:	<ul style="list-style-type: none"> • pre-heating • setting up of jigs • fixtures and clamps.
Rectify includes the use of one or more of the following:	<ul style="list-style-type: none"> • oxy acetylene • air arc equipment • grinding devices.
Defects include one or more of the following:	<ul style="list-style-type: none"> • porosity • slag inclusions • discontinuities • lack of penetration • undercut.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM05023 Weld using submerged 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>

