



Australian Government

MEM05048 Perform advanced welding using flux core arc welding process

Release: 1

MEM05048 Perform advanced welding using flux core arc welding process

Modification History

Release 1. Supersedes and is equivalent to MEM05048B Perform advanced welding using flux core arc welding process

Application

This unit of competency defines the skills and knowledge required to carry out advanced welding using flux core arc welding (FCAW).

Welds are associated with a range of structural sections and/or plate and/or pipe for general fabrication using ferrous materials. Weld quality would typically conform to AS 1554 Structural Purpose or equivalent.

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

Band: A

Unit Weight: 4

Pre-requisite Unit

MEM05007	Perform manual heating and thermal cutting
MEM05047	Weld using flux core arc welding process
MEM05051	Select welding processes
MEM05052	Apply safe welding practices
MEM05056	Perform routine flux core arc welding
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 materials for welding	2.1	Prepare materials to achieve the required weld requirements
		2.2	Assemble/align materials to specification, where required
3	Select, assemble and set up welding equipment and consumables	3.1	Identify and select welding equipment and consumables appropriate to the material
		3.2	Assemble and adjust appropriate welding equipment
4	Minimise and rectify distortion	4.1	Apply appropriate distortion prevention measures
		4.2	Rectify any distortion using appropriate techniques

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
5	Weld joints to specifications using FCAW	5.1	Ensure welds are deposited to specifications
		5.2	Clean joints to specifications
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 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.

Welds include the following:

- fillet and butt in horizontal, vertical and overhead positions

Welding equipment includes the following:

- gases, settings, electrodes and related equipment selected in accordance with welding procedure

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

- low carbon
- cast iron
- stainless and low alloy steel

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

- preheating
- setting up of jigs
- fixtures and clamps

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Rectify includes the use of one (1) or more of the following:

- oxy acetylene
- air arc equipment
- grinding devices

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM05048B Perform advanced welding using flux core 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>

Assessment Requirements for MEM05048 Perform advanced welding using flux core arc 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 advanced welding using flux core arc welding process (FCAW) to the specified standard
- selecting appropriate weld and joint preparation methods
- consistently weld materials to the specified standard or equivalent using semi-automatic welding machines and electrodes while preventing distortion
- rectifying any defects
- completing and maintaining weld records related to FCAW Structural Purpose 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)
- in-depth knowledge of the properties and characteristics of a wide range of materials
- requirements to conform to AS 1554 Structural Purpose or equivalent
- weld procedures and requirements
- purpose of pre-welding and/or post-welding heating and the methods of application
- instructions, symbols, specifications, including bead size, bead placement, reinforcement and weld procedure sheet
- discontinuities in relation to standards/requirements
- different welder identification systems, including numbering, bar coding, paint coding and letter stamps.

Assessment Conditions

- Assessors must:

- have vocational competency in performing advanced FCAW 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
- Where possible assessment must occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, 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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