



Australian Government

Department of Education, Employment and Workplace Relations

MEM05048B Perform advanced welding using flux core arc welding process

Release: 1

MEM05048B Perform advanced welding using flux core arc welding process

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers preparing materials, selecting and setting up the welding equipment, carrying out advanced flux core arc welding (FCAW), inspecting for and correcting defects, and maintaining the weld records.
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Application of the Unit

Application of the unit	Work is carried out on a range of structural sections and/or plate and/or pipe for general fabrication and may include low carbon steel, stainless steel, low alloy steel, etc. As a guide, welds produced to the standard of this unit would typically conform to Australian Standard 1554 Structural Purpose, Bureau Det Norse Verticas or equivalent. Band: A Unit Weight: 4
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM05007C	Perform manual heating and thermal cutting
	MEM05047B	Weld using flux core arc welding process
	MEM05050B	Perform routine gas metal arc welding
	MEM05051A	Select welding processes
	MEM05052A	Apply safe welding practices
	MEM09002B	Interpret technical drawing
	MEM12023A	Perform engineering measurements
	MEM18001C	Use hand tools
	MEM18002B	Use power tools/hand held operations

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare welding materials and equipment	1.1. Welding equipment is prepared. 1.2. Appropriate welding equipment is assembled and adjusted correctly and safely. 1.3. Materials are prepared to achieve required weld specification.
2. Weld joints to code requirements using advanced FCAW	2.1. Weld requirements are interpreted correctly. 2.2. Welds are deposited correctly to specifications.
3. Assess weld quality and rectify faults	3.1. Weld joints are visually inspected against specifications. 3.2. Defects are removed using appropriate methods for the given task. 3.3. Weld records are correctly completed and maintained.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- depositing fillet and butt welds correctly
- performing all weld and preparation requirements
- identifying discontinuities that do not meet standard requirements
- repairing discontinuities
- using preheat methods
- interpreting weld requirements and specifications
- entering information onto proformas and standard workplace forms
- interpreting technical drawings and weld specifications relating to advanced FCAW
- using hand and power tools to prepare and weld material using FCAW
- using measurement and numeracy skills relating to advanced FCAW and preparation
- selecting equipment and consumables appropriate to task
- using visual identification of faults/defects

REQUIRED SKILLS AND KNOWLEDGE**Required knowledge**

Look for evidence that confirms knowledge of:

- in depth knowledge of the properties and characteristics of a wide range of materials
- requirements to conform to Australian Standard AS 1554 Structural Propose, Bureau Det Norse Verticas or equivalent
- weld procedures and requirements
- safe welding practices
- use and application of personal protective equipment for FCAW
- purpose of pre-welding and/or post-welding heating and the methods of application
- instructions, symbols, specifications including bead size, bead placement, reinforcement, weld procedure sheet
- discontinuities in relation to standards/requirements
- different welder identification systems such as numbering, bar coding, paint coding, letter stamps

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to carry out advanced FCAW, inspect for and correct defects, and maintain the weld records. Competency in this unit cannot be claimed until all prerequisites have been satisfied.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Context of and specific resources for assessment

This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate.

This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with performing advanced welding using flux core arc welding process or other units requiring the exercise of the skills and knowledge covered by this unit.

Method of assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

EVIDENCE GUIDE**Guidance information for
assessment****Range Statement****RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Welding equipment

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

Prepared

Preheating, setting up of jigs, fixtures, clamps, etc.

Materials

Low carbon, cast iron, stainless and low alloy steel

Welds

Fillet and butt in horizontal, vertical and overhead positions

Appropriate methods

Oxy acetylene and air act equipment, grinding devices

Unit Sector(s)**Unit sector****Co-requisite units****Co-requisite units**

Co-requisite units		

Competency field

Competency field	Fabrication
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