



**Australian Government**

# **MEM05049B Perform routine gas tungsten arc welding**

**Release: 1**

## MEM05049B Perform routine gas tungsten arc welding

### Modification History

Not Applicable

### Unit Descriptor

<b>Unit descriptor</b>	This unit covers preparing the materials and carrying out routine gas tungsten arc welding (GTAW).
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### Application of the Unit

<b>Application of the unit</b>	<p>This unit applies in a maintenance or manufacturing environment where the weld quality is not required to meet an Australian Standard. Fillet and butt welds would typically be performed on low carbon/mild steels and aluminium.</p> <p>Where welding is required to meet Australian Standard 1554 General Purpose or equivalent codes, occupational health and safety regulations and/or licensing requirements, Unit MEM05019D (Weld using gas tungsten arc welding process) should be selected.</p> <p><b>Band: A</b></p> <p><b>Unit Weight: 2</b></p>
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### Licensing/Regulatory Information

Refer to Application of the Unit

### Pre-Requisites

<b>Prerequisite units</b>	

<b>Prerequisite units</b>		

## Employability Skills Information

<b>Employability skills</b>	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. Identify weld requirements	1.1. Weld requirements are identified from job instructions. 1.2. The locations of welds are identified in accordance with standard operating procedures and job specifications.
2. Prepare materials for welding	2.1. Materials are cleaned and prepared ready for welding.
3. Prepare equipment for welding	3.1. Welding equipment is set up correctly. 3.2. Settings and consumables are selected to suit application.
4. Perform routine welding using GTAW	4.1. Safe welding practices are applied. 4.2. Materials are welded to job requirements. 4.3. Welds are cleaned to standard operating procedures.

## 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:

- preparing materials
- setting up welding equipment
- welding with GTAW
- reading and interpreting routine information on written job instructions, specifications and standard operating procedures
- using measurement skills for joint preparation and routine GTAW

#### Required knowledge

Look for evidence that confirms knowledge of:

- preparatory requirements
- properties and characteristics of materials and consumables
- equipment and equipment settings
- fuel gas properties and applications
- post welding treatments

**REQUIRED SKILLS AND KNOWLEDGE**

- weld characteristics
- safe welding practices
- use and application of personal protective equipment for routine GTAW

## Evidence Guide

<b>EVIDENCE GUIDE</b>	
<p>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.</p>	
<b>Overview of assessment</b>	<p>A person who demonstrates competency in this unit must be able to perform routine gas tungsten arc welding (GTAW).</p>
<b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b>	<p>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.</p>
<b>Context of and specific resources for assessment</b>	<p>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.</p> <p>This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with carrying out routine gas tungsten arc welding or other units requiring the exercise of the skills and knowledge covered by this unit.</p>
<b>Method of assessment</b>	<p>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.</p>
<b>Guidance information for</b>	

**EVIDENCE GUIDE**

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.

<b>Materials</b>	Mild and low carbon steel
<b>Prepared</b>	Preheating, setting up jigs, fixtures, clamps, joint preparation
<b>Equipment</b>	Hoses, welding leads and gas shrouds, electrodes, gas regulator, liners, contact tips
<b>Consumables</b>	Tungsten electrodes, filler wire, shielding gas
<b>Cleaned</b>	Slag, spatter

**Unit Sector(s)**

Unit sector

**Co-requisite units**

<b>Co-requisite units</b>	

## Competency field

Competency field	Fabrication
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