



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **MEM05008C Perform advanced manual thermal cutting, gouging and shaping**

**Release: 1**

## MEM05008C Perform advanced manual thermal cutting, gouging and shaping

### Modification History

Not Applicable

### Unit Descriptor

<b>Unit descriptor</b>	This unit covers performing manual heating, thermal cutting and gouging to produce complex internal and external profiles. It includes the assembly/disassembly of plant and equipment, selection of settings and consumables and operation of the equipment.
------------------------	---

### Application of the Unit

<b>Application of the unit</b>	<p>This unit applies to the manual thermal cutting process used to produce complex internal and external profiles which satisfy predetermined shape, size and surface finish specifications.</p> <p>Items are cut, shaped or gouged by a variety of methods which may include oxy acetylene, oxy/hydrogen, plasma, carbon arc, etc. Predetermined standards of quality and safety are observed and work is carried out following standard operating procedures.</p> <p><b>Band: A</b></p> <p><b>Unit Weight: 2</b></p>
--------------------------------	--

### Licensing/Regulatory Information

Not Applicable

## Pre-Requisites

<b>Prerequisite units</b>		
<b>Path 1</b>	MEM05007C	Perform manual heating and thermal cutting

## Employability Skills Information

<b>Employability skills</b>	This unit contains employability skills.
-----------------------------	--

## 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.
---	--

## Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Assemble/disassemble plant, equipment for manual thermal cutting, gouging and shaping	1.1. Appropriate cutting process and procedure for material being worked are selected. 1.2. Accessories and equipment are correctly selected and assembled.
2. Select equipment settings and consumables	2.1. Correct equipment settings and consumables are selected from standard operating procedures.
3. Operate hand held thermal cutting and shaping equipment	3.1. All safety procedures are observed. 3.2. Equipment start-up procedures are followed correctly to standard operating procedures. 3.3. Material is cut to specification with shape/profile/surface finish to accepted workplace standards. 3.4. Cutting defects are identified and corrective action is taken to standard operating procedures. 3.5. Material is removed with minimum loss of sound metal.

## 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:

- obtaining, interpreting and following relevant job sheets, drawings, instructions and procedures
- selecting and assembling equipment and accessories
- following safety procedures
- safely checking, starting and operating equipment
- cutting material to specifications
- identifying and correcting cutting defects
- economising material and minimising waste

#### Required knowledge

**REQUIRED SKILLS AND KNOWLEDGE**

Look for evidence that confirms knowledge of:

- cutting processes and procedures appropriate to various material
- heating and cutting specifications
- procedures for heating and cutting
- specifications for cutting and surface finish
- use and applications of tools, equipment and techniques for heating and cutting
- assembling procedures for equipment and accessories
- equipment settings
- application of various consumables
- sources of information on equipment settings and consumables
- hazards and control measures associated with manual heating and thermal cutting
- use and application of personal protective clothing and equipment
- equipment pre-checks and operation
- procedures for adjusting heating and cutting equipment
- cutting allowances and reasons for applying them
- procedures for minimising waste material
- reasons for minimising waste material
- cutting defects and their causes
- procedures for correcting cutting defects
- tools, equipment and techniques required to correct cutting defects
- use and application of personal protective equipment
- safe work practices and procedures

## 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 perform advanced manual thermal cutting, gouging and shaping. 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 advanced manual thermal cutting, gouging and shaping 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.


**Unit Sector(s)**

<b>Unit sector</b>	
--------------------	--

**Co-requisite units**

<b>Co-requisite units</b>		

**Competency field**

<b>Competency field</b>	Fabrication
-------------------------	-------------