



**Australian Government**

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

# **MEM06007B Perform basic incidental heat/quenching, tempering and annealing**

**Release: 1**

## MEM06007B Perform basic incidental heat/quenching, tempering and annealing

### Modification History

Not Applicable

### Unit Descriptor

<b>Unit descriptor</b>	This unit covers performing straightforward heating/quenching, tempering and annealing of ferrous and non-ferrous metals.
------------------------	---

### Application of the Unit

<b>Application of the unit</b>	<p>This unit applies to the heat treatment of ferrous and non-ferrous metals of various types and thicknesses by a range of methods. These may include oxy acetylene, LPG gas equipment, forge etc. used to heat/quench, temper and anneal materials to specifications.</p> <p>Work would normally cover one-off processes or processes undertaken as incidental to trade work (e.g. toolmaking, metal spinning etc.)</p> <p>For more comprehensive or complex heating treatment, Units MEM06003C (Carry out heat treatment) and MEM06004B (Select heat treatment processes and test finished product) should also be considered.</p> <p>For continuous or batch heat treatment of materials, Unit MEM07024B (Operate and monitor machine/process) should be selected.</p> <p><b>Band: A</b> <b>Unit Weight: 2</b></p>
--------------------------------	--

### Licensing/Regulatory Information

Not Applicable

## Pre-Requisites

<b>Prerequisite units</b>		

## 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. Determine job requirements	1.1. Job requirements are determined from engineering drawing, job sheet or verbal instructions.
2. Set up equipment for heat/quenching, tempering and annealing	2.1. Appropriate heating process and/or procedure is selected for the given job. 2.2. Equipment is set up according to standard operating procedures and manufacturers' instructions.
3. Operate heating equipment	3.1. All safety procedures are observed. 3.2. Appropriate heating equipment operating procedures are followed. 3.3. Appropriate equipment adjustments are made. 3.4. Material is treated to achieve required result.

## 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:

- reading, interpreting and following information on written job instructions, specifications, standard operating procedures, manufacturer instructions, charts, lists, drawings and other applicable reference documents
- checking and clarifying task-related information
- following verbal instructions
- orally reporting routine information
- selecting appropriate processes for heating/quenching, tempering, annealing
- setting up, adjusting and operating equipment

#### Required knowledge

Look for evidence that confirms knowledge of:

- characteristics and applications of heating/quenching, tempering, annealing processes
- specifications for heating, quenching, tempering, and annealing
- process for heating/quenching, tempering, annealing, different materials
- operating/adjusting heating equipment
- hazards and control measures associated with heating/quenching, tempering,

**REQUIRED SKILLS AND KNOWLEDGE**

- annealing, including housekeeping
- 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.

<p><b>Overview of assessment</b></p>	<p>A person who demonstrates competency in this unit must be able to perform basic incidental heat/quenching, tempering and annealing of ferrous and non-ferrous metals by a range of methods, which may include oxy acetylene, LPG gas equipment, forge, and use to heat/quench temper and anneal materials to specifications.</p>
<p><b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b></p>	<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>
<p><b>Context of and specific resources for assessment</b></p>	<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 heating/quenching, tempering and annealing ferrous and non-ferrous metals or other units requiring the exercise of the skills and knowledge covered by this unit.</p>
<p><b>Method of assessment</b></p>	<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,</p>

<b>EVIDENCE GUIDE</b>	
	product and manufacturing specifications, codes, standards, manuals and reference materials.
<b>Guidance information for assessment</b>	

## Range Statement

<b>RANGE STATEMENT</b>	
<p>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.</p>	
<b>Heating process</b>	Heating/quenching, tempering and annealing
<b>Heating equipment</b>	Oxy acetylene, LPG gas equipment, forge etc.
<b>Material</b>	Ferrous and non-ferrous metals of various types and thicknesses

## Unit Sector(s)

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

## Co-requisite units

<b>Co-requisite units</b>	

## Competency field

Competency field	Forging
------------------	---------