



Australian Government

Department of Education, Employment and Workplace Relations

MEM05006C Perform brazing and or silver soldering

Release: 1

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Modification History

Corrections to descriptor and range to clarify inclusion of 'brazing welding'.

Unit Descriptor

Unit descriptor	This unit covers performing brazing (including brazing welding) and silver soldering. It includes the preparation of materials and equipment and the inspection of the completed work.
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Application of the Unit

Application of the unit	<p>This unit applies to silver soldering and brazing using all grades of silver solder and braze. It also includes soldering of copper and refrigeration work. Work includes the preparation of materials and equipment and the inspection of the completed work.</p> <p>Work is undertaken in a production or maintenance environment using predetermined standards of quality, safety and work procedures.</p> <p>Band: A</p> <p>Unit Weight: 2</p>
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Prerequisite units		

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 materials and equipment	1.1.Job requirements are determined from specifications and/ or instructions. 1.2.Materials are correctly prepared using appropriate tools and techniques. 1.3.Materials are correctly assembled/aligned to meet specifications as required. 1.4.Distortion prevention measures are identified and appropriate action is taken as required. 1.5.Heating equipment is assembled and set up safely and correctly in accordance with standard operating procedures. 1.6.Correct and appropriate consumables are selected and prepared. 1.7.Test run is undertaken and verified as required.
2. Braze and/or silver solder	2.1.The correct process is selected to meet specifications. 2.2.Materials are preheated as required. 2.3.Consumables are applied using correct techniques. 2.4.Jointing material is applied correctly and in appropriate quantities to meet job/specifications. 2.5.Material temperature is annealed using correct and appropriate techniques.
3. Inspect joints	3.1.Excess jointing materials are removed using correct and appropriate techniques. 3.2.Inspection of joints is undertaken to standard operating procedures. 3.3.Inspection results are reported/recorded using standard operating procedures as required.

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:

REQUIRED SKILLS AND KNOWLEDGE

- preparing materials
- performing brazing, braze welding, silver soldering
- undertaking visual inspection
- reading and interpreting routine information on written job instructions, specifications and standard operating procedures
- following oral instructions

Required knowledge

Look for evidence that confirms knowledge of:

- the reasons for selecting specific methods of assembly/alignment
- the procedures for minimising distortion of the materials being brazed/braze welded/silver soldered
- the procedures for assembling and setting up the specific heating equipment
- the reasons for selecting specific heating equipment
- the reasons for selecting specific consumables
- conducting test runs
- typical applications of brazing/braze welding and silver soldering processes
- the procedures and precautions for preheating the materials to be joined
- the effects of the use of inappropriate techniques on the performance of the jointed materials
- the effect of inappropriate quantities of jointing material on the performance of the jointed materials
- the procedures for normalising the temperature of jointed materials
- the consequences of using inappropriate techniques to normalise the temperature of the joint
- the procedures for removing excess jointing material
- the procedures for inspecting brazed/braze welded/silver soldered joints
- use and application of personal protective equipment for silver soldering and brazing/braze welding
- 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 brazing (including braze welding) and silver soldering.

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. Where assessment occurs off the job, i.e. the candidate is not in productive work, then appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered 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 brazing (including braze welding) and/or silver soldering 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.

Guidance information for

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.

Materials	Ferrous and non-ferrous
Heating	Oxy acetylene and fuel gas, cylinders, connections, hoses, tips and nozzles
Consumables	Fluxes (resin or powder), all types of silver solder and brazing grades, etc.
Process	Brazing, braze welding and silver soldering

Unit Sector(s)

Unit sector

Co-requisite units

Co-requisite units	

Competency field

Competency field	Fabrication
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