



Australian Government

MEM19052 Produce complex objects using silversmithing techniques

Release: 1

MEM19052 Produce complex objects using silversmithing techniques

Modification History

Release 1. Supersedes and is equivalent to MEM19052A Produce complex objects using silversmithing techniques.

Application

This unit of competency defines the skills and knowledge required to design and create complex objects using a range of silversmithing techniques and includes assessing the application of the design brief in the final outcome.

This unit requires application of silversmithing techniques in the production of objects where consistency of outcomes is required across multiple items. For example, a cutlery set where a standard of quality and finish must be repeated across many pieces.

It also applies to the production of complex pieces, including tea or coffee sets or trophies, which require extensive soldering operations and complex finishing procedures.

This unit applies to individuals designing jewellery in a small or large-scale production context. They use and adapt both creative and technical skills and knowledge to produce work.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Band: A

Unit Weight: 4

Pre-requisite Unit

MEM13015 Work safely and effectively in manufacturing and engineering

MEM16006 Organise and communicate information

MEM19033 Create silversmithing objects

Competency Field

Jewellery

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>

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1. Determine job requirements	1.1 Follow standard operating procedures (SOPs) 1.2 Comply with work health and safety (WHS) requirements at all times 1.3 Use personal protective equipment (PPE) in accordance with SOPs 1.4 Determine requirements from the design brief, research and discussions with appropriate personnel
2. Design a complex object for silversmithing	2.1 Evaluate relevant research information, references and resources for the design process 2.2 Record concept development through drawings, notations and design options 2.3 Prepare production plans for selected design solution and refine design in response to production considerations 2.4 Produce a model or maquette of the selected design based on requirements of the brief 2.5 Determine and obtain resources and equipment to undertake the task
3. Apply silversmithing techniques	3.1 Determine appropriate silversmithing techniques and equipment through testing and experimentation 3.2 Select and apply silversmithing techniques and processes to produce the objects 3.3 Determine and apply soldering operations for complex items that require a large number of joins to be undertaken 3.4 Produce objects to design specifications and ensure consistency across items 3.5 Reduce the production of fire-scale during heating operations by using suitable temperatures 3.6 Identify and address production problems or inconsistencies based on knowledge of process and materials 3.7 Select and apply surface finishing techniques to the objects based on design requirements and prepare for presentation to the client 3.8 Apply appropriate control measures to hazardous substances according to environmental requirements
4. Evaluate objects for	4.1 Test objects for function against the design brief

Elements	Performance Criteria
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meeting the design brief	4.2 Assess consistency of outcome quality in multiple objects and design features 4.3 Re-work, repair or recycle non-compliant objects in accordance with workplace procedures 4.4 Evaluate and document design processes in accordance with workplace procedures 4.5 Clean up and maintain production environment and equipment in accordance with SOPs

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range of Conditions	
This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.	
Pieces include one or more of the following:	• tea or coffee service • cutlery set • ecclesiastical pieces • decorative boxes • trophies.
Appropriate personnel include one or more of the following:	• supervisor • manager • trainer • mentor • team member • client.
Silversmithing includes one or more of the	• maquette production • sinking

following:	• crimping • raising • planishing • spinning • forging • hinge making • fabricating • forming.
Silversmithing tools include one or more of the following:	• hammers • stakes • files • vices.
Surface finishing techniques include one or more of the following:	• electroplating • planishing • patination • polishing • burnishing • heat treating.
Environmental requirements include one or more of the following:	• liquid waste • solid waste • emissions (gas, fume, vapour, smoke, fugitive emissions or dust) • excessive noise • excessive energy and water use.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM19052A Produce complex objects using silversmithing techniques.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>

Assessment Requirements for MEM19052 Produce complex objects using silversmithing techniques

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- determining customer requirements
- researching information on designing complex pieces and confirming with appropriate personnel
- generating ideas and concepts
- sketching and interpreting drawings
- preparing production plan for selected design solution, producing a model or maquette and confirming with client
- selecting and applying appropriate silversmithing techniques to produce objects on at least two occasions
- determining and applying appropriate soldering operations for complex items that require a large number of joins to be undertaken on at least two occasions
- preparing and maintaining silversmithing tools and equipment
- producing work where fire-scale is controlled during production and applying a high standard of finishing skills on at least two occasions
- applying relevant surface finishing techniques
- achieving consistency in quality outcome across three or more pieces
- conducting tests and experiments for function against design brief
- evaluating and documenting design processes in accordance with SOPs.

Note: Where a volume and/or frequency is not specified, demonstration must be provided at least once.

Knowledge Evidence

Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include knowledge of:

- safe work practices and procedures and use of personal protective equipment (PPE)
- types of pieces produced by silversmithing
- concept development techniques
- appropriate personnel to consult during the development of the design

- methods used to determine customer requirements
- purpose, function and maintenance of silversmithing tools and equipment
- techniques and manufacturing methods for silversmithing production
- silversmithing surface finishing techniques
- materials and their applications and limitations in silversmithing
- soldering techniques for silversmithing
- control measures for fire-scale
- binding and locating technique
- environmental considerations during silversmithing.

Assessment Conditions

- Assessors must:
 - have vocational competency in producing complex objects using silversmithing techniques at least to the level being assessed with relevant industry knowledge and experience
 - satisfy the assessor requirements in the *Standards for Registered Training Organisations 2015* or its replacement and comply with the *National Vocational Education and Training Regulator Act 2011*, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory as the case requires.
- Where possible, assessment must occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications.
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

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