



Australian Government

MEM19005 Produce three-dimensional precision items

Release: 1

MEM19005 Produce three-dimensional precision items

Modification History

Release 1. Supersedes and is equivalent to MEM19005B Produce three-dimensional precision items

Application

This unit of competency defines the skills and knowledge required to produce one-off, three-dimensional handmade precision jewellery items using a range of metals and techniques common to industry practice.

Where soldering is required to be used unit MEM05006 Perform brazing and/or silver soldering should also be selected.

Where lathes are required to be used unit MEM07005 Perform general machining should also be selected.

Where production of three-dimensional precision jewellery masters is required unit MEM19013 Produce jewellery metal masters should also be selected.

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

Band: A

Unit Weight: 8

Pre-requisite Unit

MEM11011	Undertake manual handling
MEM13003	Work safely with industrial chemicals and materials
MEM13004	Work safely with molten metals/glass
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information
MEM18001	Use hand tools
MEM18002	Use power tools/hand held operations
MEM18003	Use tools for precision work

Competency Field

Jewellery and horological

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

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 appropriate personal protective equipment (PPE) in accordance with SOPs
		1.4	Identify job requirements from specifications, drawings, job sheets or work instructions
2	Prepare for production	2.1	Select process and technique for production of item
		2.2	Select item materials, tools and equipment
3	Produce one-off item	3.1	Develop construction plan to meet specifications and stages of process
		3.2	Prepare item components using appropriate techniques and procedures
		3.3	Produce and assemble item
4	Finish and inspect work	4.1	Check item for compliance with specifications and make repairs/adjustments as required
		4.2	Record product data using appropriate documentation
		4.3	Apply final finish and storage procedure

Foundation Skills

This section describes those required skills (reading, writing, oral communication and numeracy) that are essential to workplace performance in this unit of competency.

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

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.

Items include one (1) or more of the following:

- rings
- broaches
- bracelets
- neckpieces
- pendants
- earrings
- other decorative pieces

Materials include one (1) or more of the following:

- precious and non-precious metals
- solders and fluxes
- drills and blades
- polishing compounds
- cleaning and finishing materials
- adhesives

Tools and equipment include the following:

- all hand and power tools appropriate to construction and repair of jewellery items
- PPE

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.

Appropriate preparation and fabrication techniques include one (1) or more of the following:

- cutting
- folding
- bending
- curving
- dapping
- drawing
- rolling
- doming
- annealing
- melting
- granulation
- brazing
- silver soldering
- riveting

Documentation includes one (1) or more of the following:

- work instructions
- SOPs
- reference material for parts and components
- records of materials and consumables used
- time and record sheets
- drawings and illustrations
- customer verbal and written specifications

Final finish includes one (1) or more of the following:

- filing
- emery finishing
- high and satin polish
- embellishment finishes (sandblasting, brushed, burring, reticulation and burnishing)
- electroplating

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM19005B Produce three-dimensional precision items

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 MEM19005 Produce three-dimensional precision items

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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 on at least two (2) occasions and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- identifying and interpreting specifications, drawings, job sheets or work instructions to produce three-dimensional items
- selecting materials to meet design specifications
- selecting tools and equipment, including all hand and power tools appropriate to construction and repair of jewellery items
- applying appropriate fabrication procedures
- applying final finish to design item in accordance with design specifications
- completing documentation.

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)
- reasons for selecting particular metals, construction methods, manufacturing and finishing techniques
- tools and equipment required for processes
- planning and process stages
- working properties of precious and non-precious metals
- fine detail manufacturing processes
- components of jewellery items
- types and uses of measuring devices and recording methods
- procedures for final treatment, safe handling and storage of items.

Assessment Conditions

- Assessors must:

- have vocational competency in producing three-dimensional precision items 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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