



Australian Government

MEM19058 Cut and polish solid gemstones

Release: 1

MEM19058 Cut and polish solid gemstones

Modification History

Release 1. New unit.

Application

This unit of competency defines the skills and knowledge required to cut and polish a solid gemstone to make a finished cabochon, or other shape, from a pre-formed stone. It is based on deleted unit CUVOPA204A Cut and polish solid opals.

This unit applies to individuals processing gemstones in a small or large-scale production context. They use and adapt technical knowledge and skills to produce work that meets pre-determined jewellers' requirements.

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

Band: A

Unit Weight: 8

Pre-requisite Unit

MEM13015 Work safely and effectively in manufacturing and engineering
MEM16006 Organise and communicate information
MEM19057 Research the gemstone market and complete pre-cutting processes

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>
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 Identify job requirements from specifications
2. Prepare to cut a gemstone solid	2.1 Select tools, machinery and equipment to be used based on job requirements 2.2 Identify and obtain consumables required for cutting a gemstone

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	solid 2.3 Use correct process to attach stone to a dop-stick
3. Cut and polish top surface of gemstone	3.1 Fine grind shape or dome ensuring continuity of contour and maintaining job requirements 3.2 Polish the gemstone to remove grinding marks using appropriate polishing mediums or diamond wheel according to job requirements 3.3 Polish top surface of gemstone to a high lustre with polishing compound
4. Cut and polish back surface of gemstone	4.1 Remove stone from dop, turn over and replace on dop checking alignment 4.2 Grind the back of the stone to job requirements maintaining continuity of form and alignment 4.3 Polish to remove grinding marks and polish based on job requirements 4.4 Remove the stone from the dop and clean the stone

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

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.

Specifications include one or more of the following:	• client requirements • job sheets • work instructions.
Consumables include one or more of the following:	• cerium or tin oxide • cleaning spirit

	• diamond or silicon carbide wheels (#220 or #360) • diamond polishing compound (#2400 to #100000) • diamond polishing wheels (#3000 to #50000) • diamond sanding wheels (#280 to #1200) • felt or leather buffs • silicon carbide sanding paper (#180 to #600) • wax or adhesives for dopping.
Equipment includes one or more of the following:	• appropriate ventilation • grinding machinery • personal protective equipment (PPE) • polishing machinery • saws.
WHS requirements include:	• complying with the safe operating procedures for each machine or process • good housekeeping • using PPE.
Shape or dome includes one or more of the following:	• a variety of other shapes • cabochon • dome – high, medium and low • free form • rectangles • shapes • faceted designs.

Unit Mapping Information

No equivalent unit.

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 MEM19058 Cut and polish solid gemstones

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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 standard operating procedures (SOPs) and complying with work health and safety (WHS) requirements at all times
- identifying, selecting and safely using consumables, tools, machinery and equipment appropriate to gemstone cutting tasks
- cutting, polishing and treating gemstones in defined shapes on at least two occasions to meet jewellers' standards.

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:

- consumables, equipment, tools and machinery used to cut and polish gemstones
- job requirements specific to the gemstone type
- process for cutting and polishing the top and back surfaces of gemstones
- safety issues associated with gemstone cutting and polishing machinery.
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Assessment Conditions

- Assessors must:
 - have vocational competency in cutting and polishing solid gemstones 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 that 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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