



Australian Government

MEM19059 Complete pre-cutting processes for gemstone assemblies

Release: 1

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Modification History

Release 1. New unit.

Application

This unit of competency defines the skills and knowledge required to select and prepare gemstones and backing materials for cutting as assemblies. It is based on deleted unit CUVOPA205A Complete pre-cutting processes for opal doublets and triplets.

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.

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

Band: A

Unit Weight: 3

Pre-requisite Unit

MEM13015 Work safely and effectively in manufacturing and engineering

MEM16006 Organise and communicate information

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 assembly gemstones	2.1 Select materials suitable for cutting as a gemstone assembly based on market requirements and characteristics of the stone

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	2.2 Determine best colour and mark that side 2.3 Check for flaws with a powerful light source and correct if necessary
3. Flatten gemstone and base	3.1 Flatten gemstone on marked side until surface is suitable grinding or sawing equipment 3.2 Select backing materials and flatten in accordance with job requirements 3.3 Lap gemstone and base until flat satin finish is achieved 3.4 Clean and dry gemstone and base sufficient for further processing
4. Adhere components together	4.1 Choose adhesive and mix in line with manufacturers' instructions 4.2 Ensure stone is cemented with the best colour face down 4.3 Adhere flattened surfaces together eliminating excess adhesive and air bubbles 4.4 Allow adhesive to harden following manufacturers' instructions
5. Pre-form gemstones	5.1 Grind stone to expose join between gemstone and backing 5.2 Grind stone to expose best colour 5.3 Grind to rough shape to meet job requirements

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	<ul style="list-style-type: none"> • client requirements • job sheets
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or more of the following:	<ul style="list-style-type: none"> work instructions.
Suitable materials include one or more of the following:	<ul style="list-style-type: none"> multiple bars of colour with potch between off-cuts from solid production gemstone from unsuitable boulder iron stone gemstone prone to crack gemstone shell skins thin bar of colour in potch thin seam gemstone weak colour on a clear base (jelly gemstone) other gemstone minerals.
WHS requirements include:	<ul style="list-style-type: none"> complying with the safe operating procedures for each machine good housekeeping using personal protective equipment (PPE).
Equipment includes one or more of the following:	<ul style="list-style-type: none"> diamond grinder diamond saw free-hand saw silicon carbide grinder slab saw trim saw.
Backing materials include one or more of the following:	<ul style="list-style-type: none"> black jade black potch boulder iron stone clear or transparent potch dark grey potch glass obsidian (black) vitrolite other gemstone materials.
Adhesive includes one or more of the following:	<ul style="list-style-type: none"> UV setting slow setting quick setting epoxies polyester resin.
Requirements for pre-cutting of gemstones include:	<ul style="list-style-type: none"> producing a clean and dry gemstone and base cementing the base and stone grinding the stone.

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>