



Australian Government

Department of Education, Employment and Workplace Relations

CUVOPA04B Cut and polish an opal solid

Release: 1

CUVOPA04B Cut and polish an opal solid

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit covers skills and knowledge required to cut and polish an opal solid to make a finished cabochon or other shapes from a preformed stone.

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

Application of the Unit

Application of the unit

The skills and knowledge covered by this unit are applied in a workshop environment and include all phases of the process for cutting a variety of opal shapes to accepted industry standards and the safe use of the equipment.

Where appropriate the outcomes of this unit could be contextualised to apply to other gemstones. Examples of aspects of the unit that may need to be adjusted would include:

- the specific properties of each gemstones
- industry and market requirements
- underpinning knowledge
- Range Statement.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units

This unit may be assessed on its own or it may be assessed with other units that cover related skills and knowledge.

Evidence is most relevant when provided through an integrated activity which combines the Elements of competency for the unit, or a cluster of units of competency.

Employability Skills Information

Employability skills

This unit contains employability skills.

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.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare to cut an opal solid.	<p>1.1 Identify and obtain <i>consumables</i> required for cutting an opal solid.</p> <p>1.2 Select tools, and <i>equipment</i> to be used.</p> <p>1.3 Determine <i>jewellers' cutting angle</i> requirements.</p> <p>1.4 <i>Dop</i> preform on appropriate dop stick using wax or adhesive as appropriate.</p>
2 Cut and polish top surface of opal.	<p>2.1 Fine grind <i>shape and dome</i> ensuring continuity of contour and maintaining jewellers setting angles.</p> <p>2.2 Sand opal to remove grinding marks using appropriate sanding papers or diamond wheel.</p> <p>2.3 Polish top surface of opal with polishing compound to a high lustre.</p>
3 Cut and polish back surface of opal.	<p>3.1 Remove stone from dop, turn over and replace on dop checking alignment.</p> <p>3.2 Grind the back of the stone to jewellers' standards maintaining continuity of form and alignment.</p> <p>3.3 Sand to remove grinding marks and polish if required.</p> <p>3.4 Remove the stone from the dop and clean.</p>
4 Treat opal (Andamooka type matrix opal) specimen.	<p>4.1 Select opal specimen for <i>treatment</i> and check to ensure it will benefit from treatment.</p> <p>4.2 Grind sand and polish selected area.</p> <p>4.3 Treat the selected area.</p> <p>4.4 Clean or neutralise as required.</p>
5 Follow OHS principles when operating opal cutting and polishing equipment.	<p>5.1 Follow all <i>general OHS principles and Safe Operating Procedures</i> when using tools, equipment, machinery and consumables for opal cutting.</p>

ELEMENT**PERFORMANCE CRITERIA****Required Skills and Knowledge****REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit.

Required skills:

- use of appropriate equipment
- ability to select the appropriate consumables.

Required knowledge:

- characteristics of opal gemstone structure
- processes and consumables needed for cutting and polishing opals.

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.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessment must confirm knowledge of the processes for cutting and polishing opals in a range of shapes and the skills to achieve a high quality finish that satisfies the requirements of the jewellery industry.

Context of and specific resources for assessment

This unit may be assessed in a work environment or in a simulated work environment or in a combination of these situations.

EVIDENCE GUIDE

Method of assessment

For valid and reliable assessment of this unit, evidence should be gathered through a range of methods to indicate consistent performance.

Assessment of this unit of competence will usually include observation of processes and procedures, oral and/or written questioning on underpinning knowledge and skills and other methods as required.

Assessment methods should closely reflect workplace demands (e.g. literacy) and the needs of particular groups (e.g. people with disabilities, and people who may have literacy or numeracy difficulties such as speakers of languages other than English, remote communities and those with interrupted schooling).

Competence in this unit must be assessed over a period of time in order to ensure consistency of performance over the range of variables and contexts applicable to the work environment.

Assessment of this competency requires access to:

- an opal cutting workshop
- a qualified workplace assessor or assessment team.

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.

Consumables may include:

- 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 may involve:

- appropriate ventilation
- grinding machinery
- personal protective equipment
- polishing machinery
- sanding machinery
- saws.

Jewellers' cutting angle requirements may include:

- 10° to 12° side angle (from setting edge to start of dome)
- 35° to 45° back setting edge (standard solid)
- all sharp edges or acute angles be slightly rounded (optional)
- flat or domed back
- high overall polish and free of defects
- proportions of low, medium and high domes be maintained
- sanded or polished back
- setting edge to be straight and parallel to back
- thickness of stone not to exceed 2/3 of width

RANGE STATEMENT

(standard solid)

- tolerance for standard millimetre sizes, 0.2mil. + or -
- when leaving patch or boulder on back of stone, maintain proportions in relation to stone size, i.e. approx. 2/3 of width.

Dop may include:

- hot or cold dopping

Note: cold dopping is preferred as hot dopping may damage the opal and cold dopping is preferable for long term stability.

Shape and dome may include:

- a variety of other shapes
- cabochon
- dome - high, medium, low
- free form
- rectangles
- shapes.

Treatment may include:

- Sugar and acid treatment or sugar and heat treatment for Andamooka matrix (other treatments are used but are not acceptable in the industry)

Note: if opal is treated or in any way altered other than cutting and polishing, the treatment must be disclosed to prospective buyers.

General OHS principles and Safe Operating Procedures may include:

- complying with the safe operating procedures for each machine or process
- good housekeeping
- using personal protection equipment where required.

Unit Sector(s)

Not Applicable

Competency field

Competency field Opal cutting and polishing