



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **CUVOPA204A Cut and polish solid opals**

**Release: 1**

## CUVOPA204A Cut and polish solid opals

### Modification History

| Version    | Comments   |
|------------|--|
| CUVOPA204A | This version first released with <i>CUV11 Visual Arts, Craft and Design Training Package version 1.0</i> |

### Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to cut and polish a solid opal to make a finished cabochon or other shape from a pre-formed stone.

### 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 using equipment safely.

Where appropriate the outcomes of this unit could be contextualised to apply to other gemstones.

### Licensing/Regulatory Information

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

### Pre-Requisites

Not applicable.

### Employability Skills Information

This unit contains employability skills.

## Elements and Performance Criteria Pre-Content

| <b>Element</b>   | <b>Performance Criteria</b>   |
|--|---|
| <i>Elements describe the essential outcomes of a unit of competency.</i> | <i>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.</i> |

## Elements and Performance Criteria

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| <p>1. Prepare to cut an opal solid</p>        | <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 requirements</i></p> <p>1.4 Dop pre-form on appropriate dop stick using wax or adhesive as appropriate</p> <p>1.5 Follow <i>general OHS principles and safe operating procedures</i> when using tools, equipment, machinery and consumables for opal cutting</p> |
| <p>2. Cut and polish top surface of opal</p>  | <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>  |
| <p>3. Cut and polish back surface of opal</p> | <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 the stone</p>   |
| <p>4. Treat opal specimen</p>                 | <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>  |

## **Required Skills and Knowledge**

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

### **Required skills**

- planning and organising skills to plan work logically
- problem-solving skills to identify and address common cutting and polishing problems
- numeracy skills to use numerical features of machinery
- technical skills to cut and polish opals using correct technique.

### **Required knowledge**

- characteristics of opal gemstone structure
- processes and consumables needed for cutting and polishing opals
- safety issues associated with opal cutting and polishing machinery.

## 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.*

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|---|--|
| <b>Overview of assessment</b>   |  |
| <b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b> | <p>Evidence of the ability to:</p> <ul style="list-style-type: none"> <li>• apply knowledge of the processes for cutting and polishing opals in a range of shapes</li> <li>• achieve a high quality finish that satisfies the requirements of the jewellery industry.</li> </ul>   |
| <b>Context of and specific resources for assessment</b>   | <p>Assessment must ensure access to an opal-cutting workshop with stones and equipment.</p>  |
| <b>Method of assessment</b>   | <p>A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:</p> <ul style="list-style-type: none"> <li>• observation of processes and procedures</li> <li>• oral and/or written questioning on underpinning knowledge and skills</li> <li>• evaluation of the final product</li> <li>• review of portfolios of evidence</li> <li>• review of third-party workplace reports of on-the-job performance by candidate.</li> </ul> <p>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).</p> |
| <b>Guidance information for assessment</b>  | <p>Holistic assessment with other units relevant to the industry sector workplace and job role is recommended.</p>   |

## 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.*

|   |  |
|---|--|
| <p><b>Consumables</b> may include:</p>  | <ul style="list-style-type: none"> <li>• cerium or tin oxide</li> <li>• cleaning spirit</li> <li>• diamond or silicon carbide wheels #220 or #360</li> <li>• diamond polishing compound #2400 to #100000</li> <li>• diamond polishing wheels #3000 to #50000</li> <li>• diamond sanding wheels #280 to #1200</li> <li>• felt or leather buffs</li> <li>• silicon carbide sanding paper #180 to #600</li> <li>• wax or adhesives for dopping.</li> </ul>  |
| <p><b>Equipment</b> may involve:</p>  | <ul style="list-style-type: none"> <li>• appropriate ventilation</li> <li>• grinding machinery</li> <li>• personal protective equipment (PPE)</li> <li>• polishing machinery</li> <li>• sanding machinery</li> <li>• saws.</li> </ul>  |
| <p><b>Jewellers' cutting angle requirements</b> may include:</p>                | <ul style="list-style-type: none"> <li>• 10° to 12° side angle (from setting edge to start of dome)</li> <li>• 35° to 45° back setting edge (standard solid)</li> <li>• all sharp edges or acute angles to be slightly rounded</li> <li>• flat or domed back</li> <li>• high overall polish and free of defects</li> <li>• proportions of low, medium and high domes to be maintained</li> <li>• sanded or polished back</li> <li>• setting edge to be straight and parallel to back</li> <li>• thickness of stone not to exceed 2/3 of width (standard solid)</li> <li>• tolerance for standard millimetre sizes, 0.2mil. + or –</li> <li>• when leaving potch or boulder on back of stone, maintain proportions in relation to stone size, i.e. approx. 2/3 of width.</li> </ul> |
| <p><b>General OHS principles and safe operating procedures</b> may include:</p> | <ul style="list-style-type: none"> <li>• complying with the safe operating procedures for each machine or process</li> <li>• good housekeeping</li> <li>• using PPE where required.</li> </ul>   |
| <p><b>Shape and dome</b> may include:</p>                                       | <ul style="list-style-type: none"> <li>• a variety of other shapes</li> <li>• cabochon</li> </ul>  |

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|-------------------------------|--|
|                               | <ul style="list-style-type: none"><li>• dome – high, medium and low</li><li>• free form</li><li>• rectangles</li><li>• shapes.</li></ul> |
| <i>Treatment</i> may include: | <ul style="list-style-type: none"><li>• sugar and acid treatment</li><li>• sugar and heat treatment.</li></ul>                           |

## Unit Sector(s)

Opal cutting and polishing