



Australian Government

Department of Education, Employment and Workplace Relations

CUVOPA205A Complete pre-cutting processes for opal doublets and triplets

Release: 1

CUVOPA205A Complete pre-cutting processes for opal doublets and triplets

Modification History

Version	Comments
CUVOPA205A	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 select and prepare opal and backing materials for cutting as doublets or triplets and complete all pre-cutting processes.

Application of the Unit

The skills and knowledge covered by this unit are applied in a workshop environment and include completing pre-cutting processes for opal doublets and triplets.

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

Element	Performance Criteria
<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

1. Select opal for cutting as an opal doublet or triplet	1.1 Select <i>suitable materials</i> for cutting as a doublet or triplet based on market requirements and characteristics of the stone 1.2 Determine best play of colour and mark that side 1.3 Check for flaws with powerful light source and correct if necessary 1.4 Follow <i>general OHS principles and safe operating procedures</i> when using machinery for opal cutting
2. Flatten opal and base	2.1 Flatten opal on marked side until surface is free of potch and impurities and is completely down to the colour bar using <i>appropriate equipment</i> 2.2 Select <i>backing materials</i> and flatten 2.3 Lap opal and base until flat satin finish is obtained 2.4 Clean and dry opal and base
3. Cement components together	3.1 Blacken flattened surface with appropriate <i>blacking agent</i> 3.2 Mix <i>adhesive</i> in line with manufacturers' instructions 3.3 Ensure stone is cemented with the best colour face down 3.4 Cement flattened surfaces together eliminating excess adhesive and air bubbles 3.5 Allow adhesive to harden following manufacturers' instructions
4. Pre-form opal doublet	4.1 Grind stone to expose join between opal and backing 4.2 Grind stone to expose best colour 4.3 Grind to rough shape
5. Convert doublet to triplet	5.1 Manufacture a triplet working with a very thin opal layer 5.2 Lap the colour surface of the opal until a thin layer of opal remains on the backing 5.3 Clean and dry stone 5.4 Cement manufactured <i>triplet top</i> or preferred alternative to the opal surface, eliminating excess adhesive and air bubbles 5.5 After curing, grind the stone to expose both joins

Required Skills and Knowledge

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

Required skills

- planning and organising skills to select and prepare opal backing materials for cutting
- problem-solving skills to identify and address common problems associated with pre-cutting processes
- numeracy skills to use numerical features of machinery
- technical skills to:
 - complete pre-cutting processes for opal doublets and triplets using correct technique and equipment
 - work safely with opal-cutting equipment and materials.

Required knowledge

- characteristics of opal gemstone structure
- processes, materials and consumables needed for making doublets and triplets
- 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.

Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the ability to: • select appropriate materials for making opal doublets and triplets • complete pre-cutting processes using safe work practices.
Context of and specific resources for assessment	Assessment must ensure access to an opal-cutting workshop with stones and equipment.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • observation of processes and procedures • oral and/or written questioning on underpinning knowledge and skills • evaluation of the final product and other methods as required • review of portfolios of evidence • review of third-party workplace reports of on-the-job performance by candidate. 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).
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector workplace and job role is recommended.

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.

<i>Suitable materials</i> may include:	• multiple bars of colour with potch between • off-cuts from solid production • opal from unsuitable boulder iron stone • opal prone to crack (triplet only) • opalised shell skins • thin bar of colour in potch • thin seam opal • weak colour on a clear base (jelly opal).
<i>General OHS principles and safe operating procedures</i> may include:	• complying with the safe operating procedures for each machine • good housekeeping • using personal protective equipment (PPE) where required.
<i>Appropriate equipment</i> may include:	• diamond grinder • diamond saw • free-hand saw • silicon carbide grinder • slab saw • trim saw.
<i>Backing materials</i> may include:	• black jade • black potch • boulder iron stone • clear or transparent potch • dark grey potch • glass (triplet only) • obsidian (black) • vitrolite (triplet only).
<i>Blacking agent</i> may include:	• black epoxy additives • black permanent markers • nigrosine.
<i>Adhesive</i> may include:	• Loctite UV 358 or 363 (triplet top to opal) • UHU Plus 24hr (opal to backing) • other glues, such as: • UHU Quickset

	• Megapoxy 69 • Epoxy 330 • Tenax+ super glue • Bond 527 • Tite On.
<i>Triplet top</i> may include:	• clear quartz • commercial standards size triplet tops • glass, plain or plate • lead crystal glass • synthetic spinel, corundum and topaz.

Unit Sector(s)

Opal cutting and polishing