



Australian Government

Department of Education, Employment and Workplace Relations

CUVGLA503A Refine kiln cast glass techniques

Release: 1

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Modification History

Version	Comments
CUVGLA503A	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 design and produce a variety of glass forms using kiln casting techniques.

Application of the Unit

Glass artists apply the skills and knowledge in this unit. At this level they demonstrate a well-developed command of the specific techniques, tools and equipment used to produce kiln cast glass.

This work is carried out independently with mentoring and guidance as required.

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

<p>1. Develop ideas for kiln cast glass</p>	<p>1.1 Evaluate <i>work opportunities</i> offered by <i>kiln casting glass</i></p> <p>1.2 Research ideas for kiln cast glasswork from other historical and contemporary references</p> <p>1.3 Research, adapt and use relevant ideas and approaches with consideration of <i>intellectual property requirements</i></p> <p>1.4 Create <i>designs</i> for a range of kiln cast glass forms to meet professional practice needs</p>
<p>2. Establish requirements for kiln cast glass</p>	<p>2.1 Investigate safety issues for kiln cast glass</p> <p>2.2 Set up work space, <i>materials, tools and equipment</i> according to safety requirements</p> <p>2.3 Establish and follow <i>safe work practices</i></p> <p>2.4 Plan <i>firing schedules</i> for different forms</p> <p>2.5 Investigate and <i>test processes</i> for kiln cast glasswork</p> <p>2.6 Monitor key safety issues during the production of work</p>
<p>3. Kiln cast glass forms</p>	<p>3.1 Determine <i>suitable forming methods</i> or combination of techniques</p> <p>3.2 Make kiln cast glass items to design requirements in relation to form and function</p> <p>3.3 Define the form using glassworking techniques</p> <p>3.4 Prepare articles for further surface treatment and finishing</p> <p>3.5 Use appropriate finishing techniques on kiln cast items</p>
<p>4. Refine kiln cast glass techniques</p>	<p>4.1 Show command of kiln cast glass techniques within a <i>coherent body of glasswork</i></p> <p>4.2 Identify and resolve <i>technical problems</i> in kiln cast glass projects based on developing expertise</p> <p>4.3 Use ongoing experimentation with techniques to refine ideas</p> <p>4.4 Develop own ways of working with the kiln cast glass process to create individual style</p>
<p>5. Evaluate own kiln cast glasswork</p>	<p>5.1 Evaluate development of own kiln cast glasswork with others and seek feedback</p> <p>5.2 Identify <i>ways in which techniques may be further developed</i> as part of a professional glass practice and build ideas into future work</p>

Required Skills and Knowledge

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

Required skills

- communication skills to liaise with others about kiln cast glass practice and challenges
- critical thinking and analytical skills to:
 - evaluate the needs of particular work projects, including design briefs for work
 - research and evaluate historical and contemporary trends to inform ideas
- literacy skills to read specifications and requirements
- problem-solving skills to identify and resolve technical kiln cast glass problems
- numeracy skills to work with numerical features of kiln cast glass processes, including measurements of materials
- self-management, planning and organising skills to:
 - evaluate kiln cast glassworking opportunities in own practice
 - set up a kiln cast glasswork space
- technology skills to safely use kiln cast glass tools and equipment
- technical skills to produce single forms, larger forms and sets or families of forms, including:
 - multiples
 - related series
 - modular forms
 - assembled sectional forms.

Required knowledge

- features of advanced kiln cast glass techniques, including:
 - structural support for large scale work
 - making and joining modules
 - refractory mould-making techniques
 - combining kiln cast glass with glass components made using other techniques
 - adding colour to the casting glass
 - finishing techniques
- elements and principles of design and their specific application to the production of glassworking
- physical properties and capabilities of the range of materials, tools and equipment used in kiln cast glassworking
- kiln cast glass techniques, including:
 - use of open moulds
 - investment (closed) moulds
 - forms: flat, tall and hollow
 - thin and thick casts
 - simple and complex forms
- firing and annealing requirements of the kiln cast glass process
- work space requirements for glasswork, including ways of organising and maintaining space

- ways of exploring, adapting and extending techniques and materials to achieve different effects in kiln cast glass
- cleaning and maintenance techniques for tools and equipment used in glasswork
- intellectual property issues and legislation associated with professional glass practice
- sustainability considerations for professional glass practice
- OHS requirements for kiln cast glasswork.

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.

<p>Overview of assessment</p>	
<p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</p>	<p>Evidence of the ability to:</p> <ul style="list-style-type: none"> • evolve and refine kiln cast glass techniques through a demonstrated process of experimentation • produce a coherent body of professional glasswork that demonstrates well-developed kiln casting techniques to create both single works and multiples of related works • research kiln cast glass in the context of historical and contemporary glassworking as a source of ideas for own work • use safe and sustainable work practices.
<p>Context of and specific resources for assessment</p>	<p>Assessment must ensure access to:</p> <ul style="list-style-type: none"> • a safe work space for glassworking • materials, tools and equipment used to produce kiln cast glasswork.
<p>Method of assessment</p>	<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"> • evaluation of kiln casting technique within a body of work produced by the candidate • evaluation of processes used by the candidate to evolve and refine kiln casting technique • direct observation of kiln casting in progress, including exploration of, and experimentation with, techniques • questioning and discussion about candidate’s intentions and the work outcome • direct questioning combined with review of portfolios of evidence and third-party reports from experienced practitioners. <p>Assessment methods should closely reflect work place 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>

Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: <ul style="list-style-type: none">• CUVACD510A Manage kiln operations• CUVACD511A Make moulds and casts• CUVACD515A Manage specialised finishing processes• CUVGLA502A Investigate glassworking materials and processes.
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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><i>Work opportunities</i> may relate to:</p>	<ul style="list-style-type: none"> • brief for kiln cast glasswork • commissions from others • competitions • creation of individual items or sets • local demand • retail opportunities • self-generated ideas.
<p><i>Kiln casting glass</i> may include one-off and related ranges of:</p>	<ul style="list-style-type: none"> • architectural glass items • bowls and platters • cylinders • figurative and abstract sculptures • geometric forms • jewellery • lighting • modular forms • open and closed forms • related series • vessels.
<p><i>Intellectual property</i> requirements relate to:</p>	<ul style="list-style-type: none"> • copyright laws • design licensing regulations • extent to which the work may be used • moral rights law • procedures for seeking permission to use the work of others, including systems for the administration of copyright • protocols for the adaptation of work by others • trademarks regulations.
<p><i>Designs</i> may include:</p>	<ul style="list-style-type: none"> • drawings • maquettes.
<p><i>Materials</i> may include:</p>	<ul style="list-style-type: none"> • abrasives: <ul style="list-style-type: none"> • alumina • cerium oxide • powder and paper

	<ul style="list-style-type: none"> • silicon carbide • glass colours • glues: <ul style="list-style-type: none"> • UV glues • 2-part epoxies • mould-making and casting materials: <ul style="list-style-type: none"> • alginate • clay • microcrystalline wax • pottery plaster • resin • silicone • mould additives: <ul style="list-style-type: none"> • grog • sand • silica • wire • range of compatible clear and coloured casting glass • resist materials: <ul style="list-style-type: none"> • glue • latex • shellac • vinyl.
<p>Tools may include:</p>	<ul style="list-style-type: none"> • abrasive tools, including: <ul style="list-style-type: none"> • associated consumables • engravers • grinders • decorating tools • glass cutters and breaking tools • measuring devices • modelling, cutting and carving tools • mould-making tools • tools for applying pattern and texture • turntables.
<p>Equipment may include:</p>	<ul style="list-style-type: none"> • abrasive equipment, including: <ul style="list-style-type: none"> • consumables • grinders • finishers • polishers • compressor

	<ul style="list-style-type: none"> • electronic equipment for design work • kiln • personal protective equipment (PPE) • sandblaster • spray booth and spray gun.
<p><i>Safe work practices</i> may include:</p>	<ul style="list-style-type: none"> • correct disposal of waste materials • dust and fume extraction • ergonomic safety • managing risk • procedures for using kilns and other specialist equipment • reporting accidents and incidents • safely using tools and equipment • using clearly designated wet and dry areas • using PPE.
<p><i>Firing schedules</i> must take into account:</p>	<ul style="list-style-type: none"> • complexity of the form and its mould • glass manufacturer’s recommended annealing schedules • material condition of the mould • number of moulds in the kiln • thickness of the form • type of glass being used • type of kiln being used • type of mould: <ul style="list-style-type: none"> • open • closed.
<p><i>Test</i> may include:</p>	<ul style="list-style-type: none"> • making kiln cast glass maquettes to refine: <ul style="list-style-type: none"> • the form • investment processes • molten glass feeding methods • different casting glasses • applied and incorporated colours • finished work presentation.
<p><i>Processes</i> may include:</p>	<ul style="list-style-type: none"> • casting: <ul style="list-style-type: none"> • mould • plunge • reservoir • side flow • cold working • pâte de verre • plunge casting • using moulds:

	<ul style="list-style-type: none"> • investment • multi-piece moulds.
<i>Suitable forming methods</i> may include:	<ul style="list-style-type: none"> • assembly • finishing • kiln casting • model making • mould making.
<i>Coherent body of glasswork</i> is:	<ul style="list-style-type: none"> • conceptually resolved • technically resolved • thematically connected • documented in terms of its development • subject to critical feedback by others.
<i>Technical problems</i> may include:	<ul style="list-style-type: none"> • limitations of own technical skill required for: <ul style="list-style-type: none"> • model and mould-making processes • cold working techniques • limited availability of space for: <ul style="list-style-type: none"> • production of work • storage of work in progress • displaying finished results • other limitations, such as: <ul style="list-style-type: none"> • limited availability of and/or access to specialist tools and equipment • equipment and machinery breakdown • inadequate skills and knowledge required for selected firing processes.
<i>Ways in which techniques may be further developed</i> may include:	<ul style="list-style-type: none"> • collaboration • further study • intensive workshops • mentored guidance • new projects.

Unit Sector(s)

Visual communication – glass

Custom Content Section

Not applicable.