

SQA Advanced Unit Specification

General information

Unit title: Glass: Sandblasting

Unit code: J1MY 47

Source: Scottish Qualifications Authority

Version: 01

Unit purpose

This unit is designed to provide the candidate with the skills and knowledge required to prepare glass and use specialist sandcarving equipment to produce designs on glass using different techniques. It is suitable for candidates wishing to advance to a higher level of study or work in the cold glass field of glass art.

Outcomes

On successful completion of the unit, the learner will be able to:

- 1 Describe the function and component parts of a sandblasting unit
- 2 Produce designs to be sandblasted
- 3 Prepare resist materials for sandblasting
- 4 Produce sandcarved glass artefacts

Credit points and level

1 SQA unit credit(s) at SCQF level 7: (8 SCQF credit points at SCQF level 7*).

**SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from National 1 to Doctorates.*

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Recommended entry to the unit

Access to this unit is at the discretion of the centre. Candidates require no prior knowledge of sandblasting. However it would be beneficial if candidates had prior knowledge of working with glass.

Core Skills

There are opportunities to develop the Core Skills of Problem Solving at SCQF level 5 and Working with Others at SCQF level 5 in this unit, although there is no automatic certification of Core Skills or Core Skills components.

Context for delivery

If this unit is delivered as part of a group award, it is recommended that it should be taught and assessed within the subject area of the group award to which it contributes.

Assessment

Outcome 1 can be assessed by an oral/written assessment.

The assessment of Outcomes 2, 3 and 4 can be combined in practical activities carried out in a studio environment.

Equality and inclusion

This unit specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods, or considering alternative evidence.

Further advice can be found on our website www.sqa.org.uk/assessmentarrangements.

Statement of standards

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Acceptable performance in this unit will be the satisfactory achievement of the standards set out in this part of the unit specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

Where evidence for outcomes is assessed on a sample basis, the whole of the content listed in the knowledge and/or skills section must be taught and available for assessment. Learners should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

Outcome 1

Describe the function and component parts of a sandblasting unit.

Knowledge and/or skills

- ◆ Compressor characteristics
- ◆ Sandblasting systems
- ◆ Types of abrasives
- ◆ Equipment maintenance
- ◆ Safety requirements

Evidence requirements

Candidates will need to provide evidence to demonstrate their knowledge and/or skills by correctly describing:

- ◆ a compressor including its characteristics, structure, performance and suitability
- ◆ two types of sandblasting systems making reference to pressure and syphonic systems
- ◆ two sandblasting abrasives
- ◆ two types of nozzles
- ◆ how to perform minor maintenance procedures on a compressor
- ◆ the health and safety requirements which have to be followed when using a sandblasting unit

Assessment guidelines

The assessment could comprise of short answer questions, oral or written, relating to types of compressors, sandblasting units, structure, characteristics, abrasives, nozzle types and compressor suitability. Health and safety considerations which have to be considered when using the machinery should be detailed and should include information on any personal protection requirements.

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Outcome 2

Prepare resist materials for sandblasting.

Knowledge and/or skills

- ◆ Drawing
- ◆ Scale drawing
- ◆ Enlargement techniques

Evidence requirements

Candidates will need to provide evidence to demonstrate their knowledge and/or skills by showing that they can, to match a given brief:

- ◆ produce four thumbnail sketches
- ◆ develop the design from each of the thumbnail sketches

The designs for production should be accompanied by technical notes on the type of glass, grade of abrasive and stencil techniques to be used.

Assessment guidelines

The assessment of this Outcome can be combined with Outcomes 3 and 4, details of which are given under Outcome 4 below.

Outcome 3

Prepare resist materials for sandblasting.

Knowledge and/or skills

- ◆ Types of resist material
- ◆ Preparation methods
- ◆ Design cutting techniques
- ◆ Application methods
- ◆ Safety procedures
- ◆ Glass preparation

Evidence requirements

Candidates will need to provide evidence to demonstrate their knowledge and/or skills by showing that they can, with reference to **three** designs:

- ◆ select appropriate resist materials
- ◆ cut designs accurately on resist materials
- ◆ prepare glass correctly and in accordance with health and safety requirements
- ◆ apply resist material evenly using correct techniques and without distortion or air bubbles

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- ◆ adhere to correct health and safety procedures

At least one design must be cut by hand.

Evidence should be generated in a working studio environment and candidate performance recorded in a centre-devised observation checklist.

Assessment guidelines

The assessment of this Outcome can be combined with Outcomes 2 and 4, details of which are given under Outcome 4 below.

Outcome 4

Produce sandcarved glass artefacts.

Knowledge and/or skills

- ◆ Set up procedures
- ◆ Operating procedures
- ◆ Etching objectives
- ◆ Safety procedures

Evidence requirements

Candidates will need to provide evidence to demonstrate their knowledge and/or skills by producing **three** sandblasted artefacts which include light frosting, deep cutting, positive and negative designs.

The finished artefacts should be devoid of spatter, blemish free and the finish uniform.

Candidates should adhere to relevant health and safety procedures during the production of the artefacts.

Evidence should be generated in a working studio environment and candidate performance recorded in a centre-devised observation checklist.

Assessment guidelines

The assessment of this Outcome can be combined with Outcomes 2 and 3.

Candidates could be asked to design and make three small glass panels with a thematic approach.

They could be given three sandblasting briefs to design and complete which include light frosting, deep cutting, and positive and negative designs. The finished items should be devoid of spatter, blemish free and the finish uniform. Relevant health and safety procedures could be assessed orally or in writing and should be monitored throughout the unit and recorded in a centre-devised observation checklist.

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Candidates could maintain a work book throughout the unit and record technical details from the procedures carried out.

Support notes

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Unit support notes are offered as guidance and are not mandatory.

While the exact time allocated to this unit is at the discretion of the centre, the notional design length is 40 hours.

Guidance on the content and context for this unit

This unit is an optional unit in the HNC/HND in Art Glass Production group awards frameworks. It may also be offered as a standalone unit.

Its purpose is to introduce candidates to the different types of sandblasting units, such as gravity-fed and suction machines; compressors and their characteristics; component parts, such as different types of nozzles; and relevant ancillary tools like electric vinyl iron and hand tools, that are available for sandblasting processes.

While it is appreciated that there may be only one type of compressor available for demonstration purposes the candidates should be able to describe, if not use, other types that are available on the market. Candidates should also be made aware of the need for regular maintenance of compressor and ancillary equipment. Manufacturers' catalogues and periodicals could complement discussions on tools and equipment.

Candidates should be encouraged not only to follow health and safety requirements in the workplace but to research any specific manufacturer's instructions supplied with equipment and material. The internet could be used as a source of reference for materials and equipment.

Guidance on approaches to the delivery of this unit

Each Outcome can be assessed individually or the assessment of Outcomes 2, 3 and 4 can be combined. Practical evidence should be recorded on centre-devised checklists. Oral or written questions could be used to supplement the practical elements of the unit.

Candidates should be encouraged to build up their skills with small individual tasks using different techniques and abrasives.

This unit could be delivered alongside any other unit where glass processes are used eg Painting, Staining and Firing.

It is envisaged that Outcomes 2, 3 and 4 will be assessed holistically by the production of three sandblasting artefacts.

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Tutor demonstration using different techniques and tools would be followed by tutor-led discussions and the opportunity for candidates to practise their practical skills. DVDs and videos could also be used to help candidates develop their skills.

Centres are reminded that prior verification of centre-devised assessments would help to ensure that the national standard is being met. Where learners experience a range of assessment methods, this helps them to develop different skills that should be transferable to work or further and higher education.

Opportunities for e-assessment

E-assessment may be appropriate for some assessments in this unit. By e-assessment, we mean assessment which is supported by Information and Communication Technology, such as e-testing or the use of e-portfolios or social software. Centres wishing to use e-assessment must ensure that the national standard is applied to all learner evidence and that conditions of assessment — as specified in the evidence requirements — are met, regardless of the mode of gathering evidence. The most up-to-date guidance on the use of e-assessment to support SQA's qualifications is available at: www.sqa.org.uk/e-assessment

Opportunities for developing Core and other essential skills

Candidates can develop their problem solving skills by determining the materials, tools and equipment which should be used to meet the specification given. These skills will be developed throughout the unit by presenting candidates with mini-briefs to work to, so that they make decisions, plan their work and organise the resources needed to carry out tasks. Candidates develop analytical skills by visual examination of their sandblasting trials.

This unit will also involve candidates working with others to negotiate the use of the sandblasting unit and equipment.

History of changes to unit

Version	Description of change	Date

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SQA acknowledges the valuable contribution that Scotland's colleges have made to the development of SQA Advanced Qualifications.

Further information

Call SQA's Customer Contact Centre on 44 (0) 141 500 5030 or 0345 279 1000. Alternatively, complete our [Centre Feedback Form](#).

General information for learners

Unit title: Glass: Sandblasting

This section will help you to decide whether this is the unit for you by explaining: what the unit is about; what you should know or be able to do before you start; what you will need to do during the unit; and opportunities for further learning and employment.

In this unit you will learn how to operate a sandblasting unit and associated equipment. You will work on your own and at times with your colleagues and tutor.

Outcome 1 looks at the function and component parts of a sandblasting unit.

In Outcome 2 you will select and prepare glass for specific tasks.

Outcome 3 covers the selection, preparation and application of resist materials.

Outcome 4 involves the production of sandblasted glass artefacts.

You will be expected to think for yourself and demonstrate your willingness to work with others by negotiating use of tools and machinery. The sharing of information is helpful and you should exchange data with your colleagues where appropriate.

You will be expected to safely work around a sandblasting unit and operate its controls. As you will be working with a machine that produces compressed air, health and safety issues are important in this unit.

You will learn about health and safety procedures which have to be followed in the workshop for your own protection and the protection of your colleagues. You should observe all Health and Safety at Work Act (HASWA) regulations and conform to workshop codes of practice throughout this unit and you will be observed by your tutor to make sure that you do follow accepted procedures.

Outcome 1 can be assessed by a written/oral task. The assessment of Outcomes 2, 3 and 4 can be combined in a practical activity undertaken in a studio environment.

You will be given the opportunity to develop your Problem Solving skills and your skills in Working with Others in this unit.