



Higher National Unit specification

General information for centres

Unit title: Art Glass Production: UV Bonding

Unit code: F1WS 35

Unit purpose: This Unit is designed to enable the candidate to develop skills and knowledge related to the UV bonding of glass including assessing glass suitability and types of UV adhesives available. It is suitable for candidates studying glasswork or working in the glasswork, glass processing or furniture industries.

On completion of the Unit the candidate should be able to:

- 1 Set up a glass edge working machine.
- 2 Prepare glass edges for the purpose of UV bonding.
- 3 Assemble and bond a glass artefact.

Credit points and level: 1 HN credit at SCQF level 8: (8 SCQF credit points at SCQF level 8*)

**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 Access 1 to Doctorates.*

Recommended prior knowledge and skills: Access to this Unit is at the discretion of the centre, however it is recommended that candidates should have previously achieved Units which involve accurate glass cutting at SCQF level 5/6 or have practical experience within the glass industry.

Core Skills: There are opportunities to develop the Core Skills of Problem Solving 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: The assessment for Outcomes 1, 2 and 3 in this Unit consists of practical tasks in which the candidate sets up and operates a glass edge working machine correctly and in a safe manner in order to prepare glass edges for the purpose of UV bonding. Candidates will then assemble and bond a glass artefact to meet a given brief.

Outcomes 1, 2 and 3 could be holistically assessed with one practical task. Candidate performance should be recorded in an observation schedule which should include evidence of candidates observing health and safety requirements throughout.

Higher National Unit specification: statement of standards

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The sections of the Unit stating the Outcomes, Knowledge and/or Skills, and Evidence Requirements are mandatory.

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. Candidates 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

Set up a glass edge working machine

Knowledge and/or Skills

- ◆ Edge working machines
- ◆ Types of belts
- ◆ Types of wheels
- ◆ Alignment
- ◆ Coolant
- ◆ Health and Safety

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and Skills by showing that they can safely set up a glass edge working machine in accordance with the manufacturer's instructions, ensuring that the belt or wheel alignment is true, with belt or wheel running freely without wavering.

Candidates will also have to demonstrate that they can change belts or wheels and set coolant flow to match the desired finish. The machine should be set up for float glass with a minimum thickness of 6 mm to meet a given specification.

Candidate performance should be recorded in an observation schedule which should include observing the candidate following all health and safety requirements.

Assessment Guidelines

See Outcome 3.

Higher National Unit specification: statement of standards (cont)

Unit title: Art Glass Production: UV Bonding

Outcome 2

Prepare glass edges for the purpose of UV bonding

Knowledge and/or Skills

- ◆ Types of edges
- ◆ Types of finishes
- ◆ Grades of belts and wheels
- ◆ Glass edgework machine operation
- ◆ Health and safety

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and Skills by showing that they can safely operate a glass edgework machine in accordance with manufacturer's instructions. Working from a given brief candidates must produce flat polished edges with arises to glass edges which have to be bonded and a polished finish to all exposed glass edges, without belt or wheel marks, turned ends or chips.

Candidate performance should be recorded in an observation schedule which should include evidence of candidates observing health and safety requirements throughout.

Assessment Guidelines

See Outcome 3.

Outcome 3

Assemble and bond a glass artefact

Knowledge and/or Skills

- ◆ Types of glass
- ◆ Types of adhesives
- ◆ Structural bonds
- ◆ Non-structural bonds
- ◆ Assembly tools
- ◆ Curing adhesive
- ◆ Methods of dealing with excess adhesive
- ◆ Fixtures and fittings

Higher National Unit specification: statement of standards (cont)

Unit title: Art Glass Production: UV Bonding

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and Skills by showing that they can produce, from a given brief:

- ◆ a UV bonded artefact which
 - has been cured to manufacturer's recommendations
 - is free from excess adhesive and grease marks with bonded edges free of air bubbles
- ◆ structural and non-structural bonds must be positioned as indicated by the UV adhesive manufacturer
- ◆ non bonded edges should have a uniform finish
- ◆ glass must be 6 mm thick

Health and safety requirements must be adhered to throughout and should be recorded along with candidate performance in an observation schedule.

Assessment Guidelines

Candidates could be given a brief which requires them to set up and operate a glass edge working machine. They could produce flat polished edges with arises in float glass that may then be assembled and UV bonded to produce a 3D glass artefact which has been cured to manufacturer's recommendations. This should be free from excess adhesive and grease marks and bonded edges without air bubbles. The glass should be at least 6 mm thick.

Administrative Information

Unit code: F1WS 35

Unit title: Art Glass Production: UV Bonding

Superclass category: WF

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Higher National Unit specification: support notes

Unit title: Art Glass Production: UV Bonding

This part of the Unit specification is offered as guidance. The support notes 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 Art Glass Production Group Awards frameworks.

Candidates studying this Unit will not only learn how to bond glass but will also learn how to use edge working machines. The types of edge working machines which could be used are: abrasive belt polishers, straight line edge machine.

Health and safety requirements and following manufacturer's instructions pertaining to abrasive wheels and to safety glasses must be followed at all times. Candidates should also be encouraged to research manufacturer's requirements for different types of adhesives and processes.

Candidates should be shown how to use different types of adhesives such as UV curable, low, medium and high viscosity glues and should become familiar with the processes used to deal with excess adhesive. Glass should be of a minimum thickness of 6 mm.

Guidance on the delivery and assessment of this Unit

Processes and safe working practices should be demonstrated to candidates and they should get the opportunity to practice their skills on small items building up their skills to working on a larger project.

Outcomes 1, 2 and 3 could be holistically assessed with one practical task. This Unit could be combined with a design project.

Health and Safety should be monitored and assessed with the aid of an observation schedule.

Opportunities for developing Core Skills

Problem Solving at SCQF level 5 is developed in this Unit. Candidates will have to plan, organise and complete a task. In following the processes involved, the candidate will have to evaluate the quality of the artefact at each stage in the production process.

Throughout the Unit candidates will require to communicate and work with others in a workshop environment. They will be required to co-operate and co-ordinate their work with others to ensure that everyone has the opportunity to use specialist equipment.

Higher National Unit specification: support notes (cont)

Unit title: Art Glass Production: UV Bonding

Open learning

This Unit is not suitable for Open Learning due to the specialist equipment and workshop health and safety requirements.

For further information and advice, please refer to the SQA document *Assessment and Quality Assurance for Open and Distance Learning* (www.sqa.org.uk).

Candidates with disabilities and/or additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering alternative Outcomes for Units. Further advice can be found in the SQA document *Guidance on Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs* (www.sqa.org.uk).

General information for candidates

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This Unit is designed to give you knowledge and the ability to bond glass to glass and to use specialist glass edge working equipment.

Throughout the Unit you will learn how important it is to follow any health and safety requirements relevant to the processes you are carrying out and this will be assessed in each Outcome.

For Outcome 1 you will learn how to set up either a belt or wheel glass edge working machine and gain knowledge of the types of belts or wheels which can be used.

For Outcome 2 you will learn to prepare glass edges for the purpose of UV bonding and you will learn about different types of edges and finishes which may be used.

For Outcome 3 you will produce, assemble and bond a glass artefact. In doing this you will learn about different types of glass adhesives, bonds and fixtures and fittings for UV bonding. You will also learn to part and final cure adhesive and how to clean off excess adhesive

In undertaking this Unit you will also develop the Core Skills of Problem Solving and Working with Others to SCQF level 5.