

## Higher National Unit specification

### General information for centres

**Unit title:** Kiln Preparation

**Unit code:** F1X6 33

**Unit purpose:** This Unit is designed to enable candidates to develop the skills and knowledge required to prepare and operate kilns. It is suitable for candidates following a course in art glass work or working in the hot glass field of art glass production.

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

- 1 Describe different types of kilns.
- 2 Select items of kiln furniture.
- 3 Prepare kiln shelves and ancillary kiln furniture.
- 4 Configure and operate kiln controls.

**Credit points and level:** 1 HN credit at SCQF level 6: (8 SCQF credit points at SCQF level 6\*)

*\*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. Candidates require no prior knowledge of kilns.

**Core Skills:** There are opportunities to develop the Core Skills of Problem Solving, Working with Others and Communication 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 a written/oral assignment.

Outcomes 2, 3 and 4 are assessed by practical assignments. Performance evidence will be generated under studio working conditions with candidates adhering to relevant health and safety regulations. The practical evidence for Outcome 4 will be supported by the compilation of two firing schedules.

## **Higher National Unit specification: statement of standards**

**Unit title:** Kiln Preparation

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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**

Describe different types of kilns

#### **Knowledge and/or Skills**

- ◆ Types of kilns
- ◆ Kiln structure
- ◆ Kiln characteristics
- ◆ Power supplies
- ◆ Kiln performance
- ◆ Cleaning and preparation of kilns
- ◆ Safe working practices

#### **Evidence Requirements**

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can, with reference to a specific task, correctly:

- ◆ identify types of kilns
- ◆ compare kiln structures
- ◆ describe kiln characteristics
- ◆ identify power supplies
- ◆ evaluate kiln performance
- ◆ describe cleaning and preparation processes for kilns
- ◆ describe the related health and safety requirements

This assessment should be carried out under open-book conditions.

#### **Assessment Guidelines**

This Outcome could be assessed by responses to short answer questions or by the submission of a report, of no less than 500 words, relating to types of kilns, kiln structures, kiln characteristics, power supplies evaluation of kiln performance, cleaning and preparation techniques and related health and safety requirements. Alternately, the assessment could be conducted orally where the candidates' responses could be recorded and noted on a detailed checklist.

## **Higher National Unit specification: statement of standards (cont)**

**Unit title:** Kiln Preparation

### **Outcome 2**

Select items of kiln furniture

#### **Knowledge and/or Skills**

- ◆ Shelves
- ◆ Surfaces
- ◆ Posts and props
- ◆ Safe working practices

#### **Evidence Requirements**

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can, with reference to a specific task/tasks, correctly:

- ◆ select kiln shelves
- ◆ identify types of surfaces to match a specific task
- ◆ identify types of posts and props for specific tasks
- ◆ work in a safe manner

Assessment should be carried out in studio working conditions and evidence of candidate performance, with accompanying narrative, should be recorded on an observation schedule. Candidates should maintain a record of actions and results.

#### **Assessment Guidelines**

The assessment could be conducted orally where the candidates' responses could be recorded and noted using a centre devised observation schedule. Alternatively the candidate could provide written evidence of their explanations for their choice of shelves, surfaces, posts and props and could be observed setting up the kiln for a specific task. Candidates should be encouraged to retain a workshop log or workbook to record details of what they did and the results from the functions they carried out. By the end of the course, this will have built into a valuable record.

### **Outcome 3**

Prepare kiln shelves and ancillary kiln furniture

#### **Knowledge and/or Skills**

- ◆ Shelf primers and kiln washes
- ◆ Tools
- ◆ Safety equipment
- ◆ Preparation methods
- ◆ Curing techniques

## Higher National Unit specification: statement of standards (cont)

**Unit title:** Kiln Preparation

### Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can prepare kiln shelves and ancillary kiln furniture for **two** specific tasks which involve different methods of applying kiln wash and **two** different methods of curing. Candidates should demonstrate that they can:

- ◆ use appropriate tools for each task
- ◆ select appropriate shelf primer for given task
- ◆ remove old batt wash to base material
- ◆ apply batt wash as recommended by the manufacturers' instructions
- ◆ select appropriate curing technique to match the method of application
- ◆ wear appropriate safety equipment for the process being followed

Evidence should be generated through practical activities carried out under studio working conditions. Candidate performance should be recorded on an observation schedule.

### Assessment Guidelines

The assessment of this Outcome should include at least two different methods of applying kiln wash and two methods of curing techniques. A centre devised checklist could be used to record the candidates' performance.

## Outcome 4

Configure and operate kiln controls

### Knowledge and/or Skills

- ◆ Programmers and controllers
- ◆ Purpose of pyrometers and thermocouples
- ◆ Heat work principles
- ◆ Firing objectives
- ◆ Firing schedules
- ◆ Safety procedures

### Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can correctly compile **two** firing schedules from information and data provided. The firing schedules should:

- ◆ differentiate between controllers and programmers
- ◆ relate the purpose of pyrometers and thermocouples
- ◆ relate firing objectives (time and temperature) to match the given task
- ◆ be in graphical form

## **Higher National Unit specification: statement of standards (cont)**

### **Unit title: Kiln Preparation**

Additionally candidates should be observed:

- ◆ configuring and operating the kiln controls to meet the firing schedules compiled
- ◆ complying with health and safety regulations

The candidate's practical performance should be recorded on an observation schedule.

### **Assessment Guidelines**

The practical element of the Outcome could be assessed by observation and recording candidate's performance on a centre devised checklist. The candidates should create no less than two firing schedules from information and data provided.

## Administrative Information

**Unit code:** F1X6 33  
**Unit title:** Kiln Preparation  
**Superclass category:** WF  
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### History of changes:

Version	Description of change	Date

**Source:** SQA

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## **Higher National Unit specification: support notes**

### **Unit title: Kiln Preparation**

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. Its purpose is to introduce candidates to the various types of kilns, kiln characteristics, component parts and relative kiln furniture and tools.

The kind of equipment which will be used in this Unit will include different types and makes of kilns, both electric and gas, with different ways of controlling heat. Candidates will prepare and use kiln furniture. Where possible the candidates should use different types of kiln programmers and controllers. 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 the delivery and assessment of this Unit**

This Unit is likely to be delivered as a stand alone Unit. It could be delivered as an optional Unit in the first year of the HND or in the HNC Art Glass Production programme.

Each Outcome should be assessed individually and evidence should be recorded on centre-devised checklists. Oral and written questions could be used to supplement the practical elements of the Unit. Alternatively the candidates could compile a report inclusive of all Outcomes. However, overall this is a practical Unit apart from Outcome 1 and candidates should be encouraged to describe orally their choices and actions throughout the Unit.

Candidates should be encouraged to maintain a log book throughout their workshop activities. This Unit could be delivered alongside any other Unit where hot glass processes are used eg Glass Fusing: An Introduction. Mini projects could be given to candidates building up their skills at preparing the kiln and ancillary equipment.

### ***Opportunities for developing Core Skills***

Candidates may develop their Problem Solving skills by determining the materials, tools and equipment which should be used to meet the specification given. These skills would 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. This would also involve candidates working with others to negotiate the use of kilns, kiln furniture, tools and equipment. Candidates develop analytical skills by disseminating data recorded from their trials. Additionally, the activities undertaken could be discussed within the class group.

## **Higher National Unit specification: support notes (cont)**

### **Unit title: Kiln Preparation**

Additionally candidates will be developing their Communication skills in this Unit. The candidates will have to develop their oral skills to negotiate timelines for using the kilns both with their tutors and with other members of their course group. When decisions are being made, the candidate can expect to be questioned on the techniques being used. Candidates will be required to respond to questions, either written or oral, and will have to explain and justify their decisions. Throughout the Unit, candidates should be encouraged to log all their work and the results, in a workbook/logbook.

### **Open learning**

This Unit is not suitable for Open learning due to the equipment used and it requires candidates to be observed and questioned by a qualified practitioner to meet health and safety requirements.

For further information and advice, please refer to the SQA guide *Assessment and Quality Assurance for Open and Distance Learning* [www.sqa.org.uk](http://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](http://www.sqa.org.uk)).



## **General information for candidates**

### **Unit title: Kiln Preparation**

In this Unit you will learn how to operate a kiln correctly. You will work on your own and at times with your colleagues and tutor.

Outcome 1 looks at the different types of kilns available including their structure and characteristics.

In Outcome 2 you will be required to select items of kiln furniture including shelves, surfaces, posts and props.

In Outcome 3 you will prepare kiln shelves and ancillary furniture.

In Outcome 4 you will be required to configure and operate kiln controls.

You will be expected to show evidence of data gathering and the ability to think for yourself. Your lecturer will encourage you to maintain a workbook or a logbook to record details of what you did and the results from the functions you carried out. 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 kiln and operate its controls so health and safety issues are important in this Unit. You should always be considerate to others working in a workshop and you will be expected to tidy up after yourself, and make sure you are not compromising the health and safety of your workmates.

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 Control of Substances Hazardous to Health (COSHH) codes of practice throughout this Unit and you will be observed by your lecturer to make sure that you do follow accepted procedures.

You will be assessed carrying out practical activities in a studio environment. Your practical work will be supported by written/oral assessments.

You will have the opportunity to develop the Core Skills of Problem Solving and Communication in this Unit.