



## Higher National Unit specification

### General information for centres

**Unit title:** Bricklaying: Underpinning and Shoring in Alteration and Refurbishment work

**Unit code:** F8MA 33

**Unit purpose:** This Unit is designed to enable the candidate to develop their knowledge and skills relevant to systems and processes used to underpin and shoring walling during alteration and repair work. The candidate will also enhance their practical experience by constructing a dead shore.

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

- 1 Explain techniques used to carry out underpinning and shoring operations.
- 2 Construct a dead shoring system for forming an opening in a structural wall.

**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 centres. However it is recommended that candidates have completed the Professional Development Award in Bricklaying at SQF level 6 or have the equivalent level of industrial experience and prior learning.

**Core Skills:** There are opportunities to develop the Core Skills of *Communication, Numeracy* and *Problem Solving* all at SCQF level 5 and *Information and Communication Technology* at SCQF level 4 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 in the subject area of the Group Award to which it contributes. This Unit forms part of the Professional Development Award in Bricklaying at SCQF level 8 and is aimed at candidates following a career in brickwork and with current industrial experience.

## **Higher National Unit Specification: General information for centres (cont)**

**Unit title:** Bricklaying: Underpinning and Shoring in Alteration and Refurbishment work

**Assessment:** The candidate will be given the opportunity to enhance their skills and knowledge in bricklaying by learning about underpinning and shoring operations and constructing a dead shore. The principles and sequences of operations for dead shoring to structural walls should be explained throughout the practical activities. The learning and teaching approaches used should ensure that the candidate is acquiring the underpinning knowledge required for the Unit.

This Unit is assessed on the candidates actual performance of constructing a dead shore to a structural wall and the ability to meet the Evidence Requirements in all Outcomes.

In order to achieve this Unit, candidates are required to present sufficient evidence that they have met all the knowledge and/or skills elements for each Outcome. Details of these requirements are given for each Outcome.

The assessment instruments used should follow the general guidance offered by the Scottish Qualifications Authority (SQA) assessment model and an integrative approach to assessment is encouraged. (See references at the end of support notes).

Evidence will be gathered through an assignment for Outcome 1 and observation of work processes and assessment of the completed work. Assessment should be carried out under controlled, supervised conditions. Candidates must achieve all of the Knowledge and/or Skills and Evidence Requirements specified for each Outcome to gain this Unit. Centres may use the instruments of assessment which they consider to be most appropriate but are advised to use the Bricklaying Training and Assessment Programme (TAP) which has been developed centrally by SQA. Any other instruments of assessment used must be comparable to the TAP and have been through prior verification.

Accurate records should be made of the assessment instruments used showing how evidence is generated for each Outcome and giving marking schemes, checklists and recorded candidate feedback. Records of candidates' achievements should be retained. These records must be made available for external verification

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

**Unit title:** Bricklaying: Underpinning and Shoring in Alteration and Refurbishment Work

**Unit code:** F8MA 33

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

### **Outcome 1**

Explain techniques used to carry out underpinning and shoring operations.

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

- ◆ Checks to be undertaken prior to underpinning and shoring operations
- ◆ Sequence of operations for traditional methods of underpinning
- ◆ Traditional shoring methods
- ◆ Modern underpinning systems
- ◆ Modern shoring systems
- ◆ Sequences of operations for dead shoring
- ◆ Safe working practices
- ◆ Sustainability/site waste management

#### **Evidence Requirements**

Candidates will need to provide evidence to demonstrate their knowledge and/or skills by showing that they can:

- ◆ explain the purpose of checks undertaken before during and after underpinning and shoring operations
- ◆ compare and contrast techniques and sequence of operations relevant to underpinning operations
- ◆ select appropriate shoring systems for specific scenarios
- ◆ identify safe working practices relevant to underpinning and shoring
- ◆ outline methods used to minimise waste during underpinning and shoring operations

All the Evidence Requirements must be met and all items in the Knowledge and Skills covered. Evidence should be gathered through an assignment outlining the processes, techniques and practices, health and safety and sustainability requirements relevant to underpinning and shoring. Assessment should be conducted under open-book supervised conditions.

#### **Assessment Guidelines**

In this assessment candidates will be required to complete an assignment based on drawings and specifications for an actual work project. This could be conducted as an in class assignment lasting up to three hours.

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

**Unit title:** Bricklaying: Underpinning and Shoring in Alteration and Refurbishment Work

### **OUTCOME 2**

Construct a dead shoring system for forming an opening in a structural wall.

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

- ◆ Sequence of operations
- ◆ Checks prior to dead shoring
- ◆ Cut needle holes
- ◆ Construct dead shore
- ◆ Dismantle shoring
- ◆ Completion checks
- ◆ Safe working practices
- ◆ Sustainability/site waste management
- ◆ Working to specifications/tolerances

#### **Evidence Requirements**

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ apply correct sequence of operations for dead shoring
- ◆ carry out shoring checks
- ◆ position and cut needle holes
- ◆ erect dead shoring
- ◆ dismantle dead shoring
- ◆ follow current safe working practices
- ◆ minimise the waste of materials throughout practical work
- ◆ work to specified tolerances identified in the specification

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

### Unit title: Bricklaying: Underpinning and Shoring in Alteration and Refurbishment Work

The following will assist the assessor in judging the candidate performance against the Evidence Requirements

Safe working practices relevant to the task	observed throughout
Correct sequence of work	observed throughout work
Setting out opening	± 5mm in overall width
Needle holes positioned correctly	as specified
Needle holes cut neatly	as specified
Needle holes correct number	as specified
Needles level	±2mm
Props plumb	± 15mm
Positioning of lintels, correct height	± 5mm
Lintels level	± 3mm
Dismantling of shoring	safe sequence
Work area kept clean	at all times
Appropriate PPE worn	at all times
Sufficient Resources used	waste kept to a minimum

Evidence will be gathered through observation of work processes and assessment of the completed work. Assessment should be carried out under controlled, supervised conditions. In order to achieve this Outcome candidates are required to present sufficient evidence that they have met all the knowledge and/or skills elements. An assessor observation checklist should be completed to ensure that the candidate has met the required specification and tolerances and this observation checklist should be retained as evidence.

#### Assessment Guidelines

This Outcome is assessed on the candidate's actual performance of constructing a dead shore in a structural wall to a given specification and required tolerances.

Candidates should be provided with drawings and specifications for the practical task. Assessment should be carried out in a suitable workshop environment. Timing for this assessment should be determined prior to commencement. An observation checklist should be completed to ensure the candidate has evidenced all the knowledge and skills included in this Outcome to the specification and tolerances required.

## Administrative Information

**Unit code:** F8MA 33

**Unit title:** Brickwork: Underpinning and Shoring in Alteration and Refurbishment Work

**Superclass category:** TG

**Original date of publication:** August 2010

**Version:** 01

### History of changes:

Version	Description of change	Date

**Source:** SQA

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

### **Unit title: Bricklaying: Underpinning and Shoring in Alteration and Refurbishment Work**

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 has been developed as an optional Unit in the Professional Development Award in Bricklaying at SCQF level 7.

Outcome 1 requires the candidate to explain and illustrate techniques used to carry out underpinning and shoring operations.

Outcome 2 involves practical bricklaying and shoring skills and should be delivered in an appropriate workshop environment. The main emphasis of this Outcome is the ability to safely set out and erect a dead shoring system for forming an opening in a structural wall.

Checklist items such as setting out, cutting needle holes, erecting props, plumb and level are assessed, but the key focus of the of this Outcome is the ability to carry out surveys and determine safe sequences of operations prior to carrying out the shoring.

Candidates will also be required to demonstrate their knowledge of terminology, types of shoring, traditional methods of underpinning, erecting and dismantling dead shores, safe sequences of operations, PPE, safe working practices, modern underpinning and shoring systems and processes. This assessment will be conducted under controlled, closed-book supervised conditions.

All equipment should be supplied for the candidate to use in order to complete all 2 Outcomes. It is fundamental to this Unit that professional discussions on appropriate setting out techniques, construction practices and sequences of building is used for the erection of dead shoring and that the candidate is given time to develop their methodology prior to assessment.

This Unit has been developed to allow candidates to gain knowledge, understanding and skills required to underpinning and shoring in a safe manner. This will improve the candidate's ability to undertake dead shoring tasks to a high standard.

This Unit will be undertaken in a situation where candidates will be expected to acquire underpinning knowledge and skills relating to underpinning and shoring and is complemented by other Units dealing with related aspects of bricklaying. The competences and underpinning knowledge gained in successfully completing this Unit would be transferable across a range of disciplines within the Professional Development Award in Bricklaying at SCQF level 8.

Candidates must meet the minimum Evidence Requirements as specified in the statement of standards section. Whilst it is not mandatory for a centre to use this list of topics it is strongly recommended that it does so to ensure continuity of teaching and learning across the Units and because the assessment exemplar pack for this Unit is based on the knowledge and/or skills and list of topics in each of the Outcomes.

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

### **Unit title: Bricklaying: Underpinning and Shoring in Alteration and Refurbishment Work**

Health and Safety and Sustainability are integral and key to the Construction Industry therefore throughout the Unit emphasis will be placed where appropriate on the application of Health and Safety and Sustainability. Safety working practices should be looked at in accordance with current safety codes of practice and regulations. Sustainability should include reference to criteria affecting sustainability, impact of not implementing sustainability on the environment and the legislation promoting sustainability.

### **Guidance on the delivery and assessment of this Unit**

Centres may use the instruments of assessment which they consider to be most appropriate but are advised to use the Bricklaying Training and Assessment (TAP) which has been developed centrally by SQA. Any other instruments of assessment used must be comparable to the TAP and have been through prior verification.

Where this Unit is incorporated into other Group Awards it is recommended that it be delivered in the context of the specific occupational area that the award is designed to cover. Details on approaches to assessment are given under Evidence Requirements and Assessment guidelines under each Outcome in the Higher National Unit specification: statement of standards section. It is essential that these sections be read carefully before proceeding with assessment of candidates.

Most of this Unit will be completed in a situation with candidates carrying out the procedures outlined in the Outcomes. Learning should be enhanced by the use of ICT, DVDs, site visits and hands-on experience and prior experience from the workplace.

Demonstrations and professional discussions by tutors/trainers especially in the application of practical aspects of Outcome 2 should reinforce and augment the candidate's previous knowledge. Safety factors should be highlighted where applicable during practical activities.

Candidates should be given as much practise as possible in bricklaying and shoring techniques and setting out techniques, prior to being set the assessments. Candidates will work in pairs during Outcomes 2.

Evidence will be gathered for Outcome 2 through observation of work processes and assessment of completed work, to confirm that the candidate has met the given standards and tolerances. An assessor observation checklist can be used to record this evidence. Assessment should be conducted under controlled, supervised conditions.



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

### **Unit title:** Bricklaying: Underpinning and Shoring in Alteration and Refurbishment Work

Candidates will also be required to demonstrate their knowledge of terminology, types of shoring, traditional methods of underpinning, erecting and dismantling dead shores, safe sequences of operations, PPE, safe working practices, modern underpinning and shoring systems and processes by successful completion of an assignment relating to underpinning and shoring. This assessment will be conducted under controlled, closed-book supervised conditions.

Where available, evidence from the workplace can also be incorporated to enhance the learning Outcomes, provided that this evidence is appropriate and authenticated as the student's own work.

It is the responsibility of the centre to satisfy themselves that the portfolio of evidence submitted for assessment is entirely original and solely the respective student's work.

Throughout the Unit emphasis will be placed, where appropriate, on the application of Health and Safety and Sustainability. Safe working practises should be looked at in accordance with current safety codes of practise and regulations. Sustainability should include reference to criteria affecting sustainability, impact of not implementing sustainability on the environment and the legislation promoting sustainability.

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

*Communication* skills at SCQF level 5 may be developed by the completion of the assignment for Outcome 1. Candidates are required to produce a written assignment outlining the processes, techniques, health and safety and sustainability requirements related to architectural and feature work.

*Information and Communication Technology* at SCQF level 4 may be developed by the candidates' carrying out individual research of modern and traditional features, construction techniques, health and safety legislation and sustainability relating to the task.

*Problem Solving* at SCQF level 5 could be developed as candidates take account of a range of factors in order to work efficiently and safely, such as the choice of tools, appropriate materials, safety issues, safety equipment and sustainability. Individual discussions with assessors will enhance the evaluation of efficient working practices.

*Numeracy* could be developed at SCQF level 5 when taking off dimensions from working drawings, measuring, calculating and setting out.

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

**Unit title:** Bricklaying: Underpinning and Shoring in Alteration and Refurbishment Work

### **Open learning**

Although this Unit could be delivered by distance learning, it would require a considerable degree of planning by the centre to ensure the sufficiency and authenticity of candidate evidence. Arrangements would have to be made to ensure that:

- ◆ the practical activities would have been supervised by a responsible person and clearly recorded (using an assessment checklist, or on video) for the assessor
- ◆ the assessor is, at some point, able to question the candidate on that performance (face to face, by telephone, online)
- ◆ the open-book assignment for Outcome 1 is conducted in a supervised environment

### **Disabled candidates and/or those with additional support needs**

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website

[www.sqa.org.uk/assessmentarrangements](http://www.sqa.org.uk/assessmentarrangements)

## General information for candidates

### Unit title: Bricklaying: Underpinning and Shoring in Alteration and Refurbishment Work

This Unit is designed to further your career in the construction industry by making you more competent and enhance your knowledge of underpinning and shoring processes. It will also give you a further appreciation through technical information and appropriate manufacturers information. The Unit will also allow you to get experience hands on in order to appreciate brickwork at an advanced level.

#### Outcome 1

You are required to explain and illustrate techniques used to carry out underpinning and shoring operations, such as:

- ◆ correct sequence of operations.
- ◆ terminology
- ◆ surveys prior to dead shoring
- ◆ modern shoring systems
- ◆ modern underpinning systems.
- ◆ erect dead shore
- ◆ dismantle shoring
- ◆ safe working practices
- ◆ knowledge of sustainability

Your work will be assessed via an assignment.

#### Outcome 2

Construct a dead shoring system for forming an opening in a structural wall.

Your work will be assessed via an observation/operational checklist to provide evidence that you completed work meets the required specification and tolerances for:

- ◆ safe working practices
- ◆ correct sequence of work
- ◆ setting out opening
- ◆ cut needle holes
- ◆ inserting needles 1
- ◆ erecting props plumb
- ◆ positioning lintels
- ◆ dismantling shoring
- ◆ cleanliness of work
- ◆ appropriate ppe
- ◆ minimising waste

There are opportunities to develop the Core Skills of Communication, Numeracy and *Problem Solving* all at SCQF level 5 and *Information and Communication Technology* at SCQF level 4 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.