



## Higher National Unit specification

### General information for centres

**Unit title:** Stonemasonry: Repair of High Level Masonry

**Unit code:** F8PP 34

**Unit purpose:** This Unit is designed to enable the candidate to develop their knowledge, understanding and skills relevant to the repair of high level masonry. The candidate will demonstrate their understanding of techniques and practices as well as their practical abilities in the repair of high level masonry components.

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

- 1 Prepare a Repair Strategy.
- 2 Take down chimney cans, copes and masonry.
- 3 Prepare wall head and rebuild chimney.
- 4 Rebuild Stone Balustrade.

**Credit points and level:** 1 HN credit 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 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 Stonemasonry 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, Working with Others* 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 was developed as part of the Professional Development Award in Stonemasonry at SCQF level 7 and is aimed at candidates following a career in stonemasonry and with current industrial experience.

## General information for centres (cont)

**Assessment:** The candidate will be given the opportunity to enhance their skills and knowledge in stonemasonry by undertaking a repair strategy for high level masonry including chimneys, chimney cans, copings and balustrades. Candidates will be assessed on the safe handling and dismantling of unstable masonry components. Candidates will be expected to set aside masonry components

Rebuild and fix components

The principles and techniques should be explained throughout the practical activities.

This Unit is assessed on the candidates' performance of producing a relevant repair strategy for unstable masonry and the safe working practices in taking down and re-building masonry components to set tolerances, 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 observation of work processes and assessment of 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 instrument of assessment which they consider to be most appropriate but are advised to use the Stonemasonry 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 will be made available for external verification.

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

**Unit title:** Stonemasonry: Repair of High Level Masonry

### **Outcome 1**

Prepare a Repair Strategy

#### **Knowledge and/or skills**

- ◆ Identify components
- ◆ Record masonry
- ◆ Identify repairs
- ◆ Produce strategy

#### **Evidence Requirements**

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

- ◆ identify a range of high level masonry components
- ◆ record all suspect loose and damaged masonry components
- ◆ identify type and extent of repairs
- ◆ produce a comprehensive repair strategy for the works

Evidence should be generated through assessments under supervised conditions. Candidates need to demonstrate their knowledge of all aspects of recording and re-use of information.

All working practices must be in line with current and relevant health and safety legislation and regulations.

The evidence for this should be obtained under closed-book, supervised conditions at an appropriate point in the Unit.

#### **Assessment Guidelines**

All the Evidence Requirements must be met and all items in the knowledge and skills covered.

Evidence should be generated through assessments under supervised conditions. Candidates need to demonstrate their knowledge in all aspects of High Level masonry and relevant Health and Safety issues. This can be assessed by question papers. Candidates will also be assessed in their skills in developing a repair strategy for this Outcome.

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

**Unit title:** Stonemasonry: Repair of High Level Masonry

### **Outcome 2**

Take down chimney, chimney cans and copes

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

- ◆ Removal of materials
- ◆ Protection methods
- ◆ Soluble sulphate issues
- ◆ Testing
- ◆ Tools and equipment
- ◆ Safe working practices

#### **Evidence Requirements**

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

- ◆ dismantle, remove and store materials in appropriate locations
- ◆ carry out temporary protection measures for rainwater outlets and flashings
- ◆ identify soluble sulphate issues with masonry and requirements to overcome same
- ◆ identify testing, by smoke bombs or the like, for broken bridges
- ◆ use appropriate tools and equipment for this exercise
- ◆ all working practices must be in line with current and relevant health and safety legislation and regulations

All the Evidence Requirements must be met and all items in the knowledge and skills covered. Evidence should be generated through assessments under supervised conditions. Candidates need to demonstrate their knowledge in all aspects of stone cladding. This can be assessed by a drawing and question papers. The evidence for this should be obtained under closed-book, supervised conditions at an appropriate point in the Unit.

#### **Assessment guidelines**

Candidates will demonstrate their skills by carefully taking down chimney and stone balustrade in sequence. Candidates must be observed in the attainment of all Outcomes and Evidence Requirements.

Each candidate will be observed in their ability to carry out given tasks correctly and safely. The evidence may be produced on one assessment occasion or on more than one occasion and should be carried out under supervised conditions. Candidates must be observed in the attainment of all Outcomes and Evidence Requirements.

Assessment should be carried out in a suitable workshop environment. Timing for this assessment should be determined prior to commencement.

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

**Unit title:** Stonemasonry: Repair of High Level Masonry

### **Outcome 3**

Prepare wall head and rebuild chimney

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

- ◆ Dimension
- ◆ Prepare wall head
- ◆ Rebuild chimney and flue
- ◆ Bed copes
- ◆ Fit chimney cans
- ◆ Pointing
- ◆ Exposure levels
- ◆ Tools and equipment
- ◆ Safe working practices
- ◆ Sustainability
- ◆ Working to specifications/tolerances

#### **Evidence Requirements**

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

- ◆ record and dimension masonry units for production by others
- ◆ level wall head in preparation for re-build of chimney
- ◆ re-build chimney and flues from roof level using traditional mortar and materials
- ◆ re-bed and fix chimney copes using appropriate fixings
- ◆ fit chimney can using appropriate techniques
- ◆ point up stonework and complete fillet around chimney can
- ◆ identify exposure levels associated with high level repair and re-building work
- ◆ select, use, clean and store all tools used in the task
- ◆ follow current safe working practices
- ◆ minimise the waste of materials throughout practical work
- ◆ work to specified tolerances identified in the specification

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.

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

**Unit title:** Stonemasonry: Repair of High Level Masonry

### **Assessment Guidelines**

This Outcome is assessed on the candidates' actual performance of rebuilding chimney stack incorporating two flues, fixing chimney copes and cans to given specification and required tolerances.

Candidates should be provided with 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.

### **Outcome 4**

Rebuild Stone Balustrade

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

- ◆ Temporary works
- ◆ Remove and re-bed masonry
- ◆ Rebuild masonry
- ◆ Fixings
- ◆ Tools and equipment
- ◆ Safe working practices
- ◆ Sustainability
- ◆ Working to specifications/tolerances

#### **Evidence Requirements**

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

- ◆ install temporary works in accordance with drawings
- ◆ remove masonry associated with fixing ties or restraints
- ◆ rebuild masonry elements to line plane and level
- ◆ undertake fixing of ties and straps securely with minimum intervention or disruption to the original fabric
- ◆ select, use, clean and store all tools used in the task
- ◆ follow current safe working practices
- ◆ minimise the waste of materials throughout practical work
- ◆ work to specified tolerances identified in the specification

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.

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

**Unit title:** Stonemasonry: Repair of High Level Masonry

### **Assessment Guidelines**

This Outcome is assessed on the candidates' actual performance taking down and rebuilding balustrade incorporating positioning and fixing restraint ties to given specification and required tolerances.

Candidates should be provided with 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 specifications and tolerances required.

## Administrative Information

**Unit code:** F8PP 34

**Unit title:** Stonemasonry: Repair of High Level Masonry

**Superclass category:** TG

**Original date of publication:** August 2010

**Version:** 01

### History of changes:

Version	Description of change	Date

**Source:** SQA

© Scottish Qualifications Authority 2010

This publication may be reproduced in whole or in part for educational purposes provided that no profit is derived from reproduction and that, if reproduced in part, the source is acknowledged.

SQA acknowledges the valuable contribution that Scotland's colleges have made to the development of Higher National qualifications.

Additional copies of this Unit specification can be purchased from the Scottish Qualifications Authority. Please contact the Customer Contact Centre for further details, telephone 0845 279 1000.



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

### **Unit title: Stonemasonry: Repair of High Level Masonry**

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 Stonemasonry at SCQF level 7 and can also be delivered as a freestanding Unit.

This Unit has been developed as an optional Unit in the Professional Development Award in Stonemasonry and may be delivered in a sequence suitable to individual candidates and centres.

This Unit is designed to enable the candidate to develop their knowledge, understanding and skills relevant to conservation practices on high level masonry regarding the re-building and stabilisation of masonry components.

Candidates following a career in stonemasonry and with current industrial experience will benefit from undertaking this Unit.

The knowledge and skills for this Unit should be incorporated with modern methods and materials associated with historic high level masonry, applied Terminology commonly associated with these practices should be used throughout this Unit.

It is vitally important that candidates gain an understanding and knowledge of the sequencing of operations with regard to down taking and rebuilding of high level masonry structures.

Current Health and Safety, sustainability and waste management issues should be fully emphasised throughout the delivery of this Unit.

Working to specified tolerances and methods of checking completed work should be demonstrated and undertaken by the candidate.

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

The principles and methods of this Outcome should enable the candidate to examine options of taking down and rebuilding of high level stone masonry structures and the sequencing of operations. The practise and methods adopted to ensure all surrounding masonry is protected will be assessed in the Outcomes. All aspects of this Outcome should be demonstrated to the candidate before summative assessment takes place.

The differing constraints candidates could encounter on site with various construction methods with regard to conservation practices should be fully explained.

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.

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

**Unit title:** Stonemasonry: Repair of High Level Masonry

### *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 prepare a repair strategy for the ongoing repair works outlining the processes, techniques, health and safety and sustainability requirements related to high level masonry components.

*Working with Others* at SCQF level 5 could be developed when working in pairs when taking down and rebuilding high level masonry components. Candidates can agree responsibilities and provide support and information to each other during the assessments. After assessment, they should be encouraged to consider how effectively they supported each other.

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

*Problem Solving* at SCQF level 5 could be developed as candidates compare and contrast modern and traditional methods and materials. Candidates will need to 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 masonry components, measuring, calculating and rebuilding.

### **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 activity in outcome 2 and 3 is 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 the performance (face to face, by telephone, online)
- ◆ the closed-book assignment for outcomes is conducted in a supervised environment

### **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:** Stonemasonry: Repair of High Level Masonry

This Unit is designed to develop your practical skills and knowledge of conservation practices and techniques used in the taking down and re-building of high level historic masonry structures. You will develop your understanding of modern materials and traditional practices that comply with sustainability issues and current Health and Safety legislation throughout the Unit.

You will have to demonstrate the required techniques in the taking down and re-building of high level masonry structures and to ensure no damage occurs to surrounding masonry. You will also demonstrate knowledge and skills required to rebuild masonry components using appropriate fixings and techniques.

You will learn about sustainability issues and how new materials, techniques and systems can have an impact on improving the sustainability in general and you will comply with current Health and Safety regulations and legislation throughout.

#### **Outcome 1**

Prepare a Repair Strategy

You will be assessed on the completion of an assignment in which you will be required to identify a range of high level masonry components and record. All damaged and loose masonry to be replaced or rebuilt. Identify extent and nature of the repairs and produce a comprehensive repair strategy for the works.

#### **Outcome 2**

Take down chimney, chimney cans and copes

You will be assessed on the completion of an assignment in which you will be required to dismantle, remove and store materials in appropriate locations. Carry out temporary protection measures for rainwater outlets and flashings. Identify soluble sulphate issues with masonry and requirements to overcome same. Identify testing, by smoke bombs or the like, for broken bridges

Use appropriate tools and equipment for this exercise.

All working practices must be in line with current and relevant health and safety legislation and regulations.

#### **Outcome 3**

Prepare wall head and rebuild chimney

You will be assessed on the completion of an assignment in which you will be required to record and dimension masonry units for production by others. Level wall head in preparation for re-build of chimney. Re-build chimney and flues from roof level using traditional mortar and materials. Re-bed and fix chimney copes using appropriate fixings. Fit chimney can using appropriate techniques. Point up stonework and complete fillet around chimney can. Identify exposure levels associated with high level repair and re-building work. Work to specified tolerances identified in the specification

## General information for candidates (cont)

**Unit title:** Stonemasonry: Repair of High Level Masonry

### Outcome 4

Rebuild Stone Balustrade

You will be assessed on the completion of an assignment in which you will be required to install temporary works in accordance with drawings. Remove masonry associated with fixing ties or restraints. Rebuild masonry elements to line plane and level. Undertake fixing of ties and straps securely with minimum intervention or disruption to the original fabric. Work to specified tolerances identified in the specification

You will be assessed in supervised workshop conditions to specified tolerances contained in an observation checklist. These tolerances should be fully explained and available prior to you commencing the assessment. You will be required to work individually for the assessment and where required in pairs. You will receive both oral and written feedback on your performance from the assessor.

There are opportunities for you to develop your Core Skills of *Communication, Numeracy, Working with Others* 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.