



National Unit specification: general information

Unit title: Stonemasonry: Repair of Masonry Structures (SCQF level 6)

Unit code: H0TX 12

Superclass: TG

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Source: Scottish Qualifications Authority

Version: 02

Summary

This Unit is suitable for candidates working towards a Modern Apprenticeship in Stonemasonry and will develop the candidates craft skills and knowledge in the repair of masonry structures. This Unit is designed to provide candidates with competence in the use of tools and equipment to repair damaged or eroded stones with plastic repair, partial indent, and whole stone replacement and their ability to apply these skills in the workplace. It is also designed to enable candidates to develop their skills and understand and use Stonemasonry terminology, techniques and practices used in the repair of traditional masonry.

Outcomes

- 1 Demonstrate an understanding of terminology, techniques and practices used in the repair of masonry elements and structures.
- 2 Carry out a plastic repair to damaged or eroded stonework.
- 3 Carry out a partial indent to a damaged stone.
- 4 Carry out full stone replacement.

Recommended entry

Entry to this Unit is at the discretion of the centre.

General information (cont)

Unit title: Stonemasonry: Repair of Masonry Structures (SCQF level 6)

Credit points and level

2 National Unit credit at SCQF level 6 (12 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.*

Core Skills

Achievement of this Unit gives automatic certification of the following:

Complete Core Skill None

Core Skill component Critical Thinking @ SCQF level 4

There are also opportunities to develop aspects of Core Skills which are highlighted in the Support Notes of this Unit Specification.

National Unit specification: statement of standards

Unit title: Stonemasonry: Repair of Masonry Structures (SCQF level 6)

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.

Outcome 1

Demonstrate an understanding of terminology, techniques and practices used in the repair of masonry elements and structures

Performance Criteria

- (a) Define terminology related to the repair of masonry structures correctly.
- (b) Describe different techniques and support methods used in the repair of masonry elements and structures correctly.
- (c) Identify and explain conservation practices correctly, and the general philosophy behind these practices.

Outcome 2

Carry out plastic a repair to damaged or eroded stonework.

Performance Criteria

- (a) Prepare stone for repair mix in accordance with the given specification.
- (b) Match repair mix to existing stonework in accordance with the given specification.
- (c) Use the repair mix in accordance with the given specification.
- (d) Carry out the aftercare for the repair properly allowing the mix to properly cure with no visible cracking.
- (e) Comply with current Health and Safety legislation during all work methods and activities.

Outcome 3

Carry out a partial indent to a damaged stone.

Performance Criteria

- (a) Partial indent is prepared, and matches the original as close as possible in accordance with the given specification.
- (b) The indent is fixed in accordance with the given specification.
- (c) The partial indent is pointed and aftercare is carried out in accordance with the given specification.
- (d) Comply with current Health and Safety legislation during all work methods and activities.

National Unit specification: statement of standards (cont)

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Outcome 4

Carry out full stone replacement.

Performance Criteria

- (a) Stone replacement is prepared and a finish is applied that matches the original as close as possible in accordance with the given specification.
- (b) The new stone block is fixed in accordance with the specification.
- (c) The full stone replacement is pointed and aftercare is carried out in accordance with the given specification.
- (d) Comply with current Health and Safety legislation during all work methods and activities.

Evidence Requirements for this Unit

These Evidence Requirements will be met by the completion of the Stonemasonry Training and Assessment Programme (TAP).

Evidence is required to demonstrate that the candidate has achieved this Unit to the standard specified in all Outcomes and Performance Criteria.

Written and/or oral recorded evidence is required to demonstrate that the candidate has achieved Outcome 1 to the standard specified in the Performance Criteria. Candidates will be required to demonstrate their knowledge of terminology, techniques and practices in the repair of masonry elements and structures, to include repairs to straight and curved walling, openings, arches, tracery, copings, projecting features, the use of props and struts and shoring and wall slapping's. Assessment will take the form of a question paper which will be carried out under open-book, controlled, supervised conditions.

Product and performance evidence is required to demonstrate that the candidate has achieved Outcomes 2, 3 and 4 to the standards specified in the Performance Criteria. Candidates will be required to carry out plastic repairs, partial and full stone replacement.

Assessment of these Outcomes will be carried out in a workshop under supervised conditions.

National Unit specification: statement of standards (cont)

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Outcomes 2 and 4

Summary of standards (working towards industrial tolerances)	
Item	Measurement of standard
Plastic Repair	Yes/No
Background surface prepared for plastic repair	Yes/No
Finished repair matches existing stonework	Yes/No
Finished repair neat with no staining to surrounding stonework	Yes/No
Stone Replacement	
Stone replacement dressed to match existing	Yes/No
Piecing of indents to match existing	+/- 3 mm
Beds and joints to match existing	+/- 2 mm
Face of stone clean	Yes/No
Neat flush pointing	Yes/No

Outcome 3

Summary of standards (working towards industrial tolerances)	
Item	Measurement of standard
Partial indent	
Prepare damaged section of stone for indent	Yes/No
Indent cut to correct size	+/- 1 mm
Indent properly secured with stone adhesive and dowel/s	Yes/No
Piecing in of indent to match existing line of stone	+/- 2 mm
face of stone clean	Yes/No

Summary of standards (working towards industrial tolerances)	
Item	Measurement of standard
Health and Safety	Complies at all times
Risk assessment	Safety boots worn at all times Hard hats worn at all times High visibility vest worn at all times All other PPE as risk assessed
Method statement	Working area kept clean at all times Materials stacked safely at all times Tools handled correctly at all times Tools cleaned and stored safely at end of working day

National Unit specification: support notes

Unit title: Stonemasonry: Repair of Masonry Structures (SCQF level 6)

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 80 hours.

Guidance on the content and context for this Unit

This Unit has been developed as a mandatory Unit in the Professional Development Award in Stonemasonry at SCQF level 6.

The successful completion of this Unit will provide candidates with the required underpinning knowledge relating to conservation techniques and practices associated with repairs to straight and curved walling, openings, arches, tracery, copings, projecting features, the appropriate use of props and struts, with specific knowledge and skills in conserving stonework through plastic repair, partial indenting and full stone replacement.

This Unit should be offered to candidates from the construction and related services industries. The skills and knowledge and understanding are transferable within different working environments but the Unit is primarily aimed at candidates whose normal place of work would be a site, workshop, or similar environment.

The Unit deals with various conservation and repair techniques as detailed above and should be delivered as part of a structured programme of training and orientated to the context of the candidate's work and area of responsibility.

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.

National Unit specification: support notes (cont)

Unit title: Stonemasonry: Repair of Masonry Structures (SCQF level 6)

Guidance on learning and teaching approaches for this Unit

The achievement of skills and underpinning knowledge required for this Unit will be assisted by the provision of information sources in the form of:

- ◆ Oral and /or written instructions
- ◆ Graphic and photographic materials
- ◆ Technical information
- ◆ Hands-on task on uses of tools on stone to cut out damaged stonework
- ◆ Match existing finishes for indents and stone replacement
- ◆ Carry out plastic/mortar repairs

The teaching approach should ensure the candidate is acquiring the underpinning knowledge required for the Unit. Teachers/Lecturers should demonstrate practical elements step by step until the candidate is competent enough to attempt tasks under assessment conditions. Effective questioning should be encouraged throughout, focusing on skills in Stonemasonry practices and underpinning knowledge related to the repair of masonry structures.

It is recommended that this Unit be delivered in order of Outcomes as the order stated in the Statement of Standards.

Opportunities should be taken throughout delivery of this Unit to meet the requirements of the generic Units of the Training and Assessment Programme including:

- ◆ Conform to General Workplace Health, Safety and Welfare
- ◆ Confirm Work Activities and Resources for the Work
- ◆ Develop and Maintain Good Working Relationships
- ◆ Confirm the Occupational Method of Work
- ◆ Conform to Productive Working Practices
- ◆ Move, Handle or Store Resources

National Unit specification: support notes (cont)

Unit title: Stonemasonry: Repair of Masonry Structures (SCQF level 6)

Guidance on approaches to assessment for this Unit

Detailed assessment material for this Unit will be found in the Stonemasonry TAP. Centres may use the instruments of assessment which they consider to be most appropriate but are advised to use the Stonemasonry 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.

The candidates' knowledge and understanding of terminology, techniques and construction practices of Stonemasonry will be assessed through a question paper.

Candidates should be given as much practise as possible to develop Conservation techniques, prior to being set the assessment. Evidence will be gathered for Outcomes 2, 3 and 4 through observation that the candidates have met the given standards and tolerances during the practical assessments.

An assessor observation checklist can be used to record this evidence.

Opportunities for the use of 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 (ICT), such as e-testing or the use of e-portfolios or social software. Centres which wish to use e-assessment must ensure that the national standard is applied to all candidate evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. Further advice is available in *SQA Guidelines on Online Assessment for Further Education (AA1641, March 2003)*, *SQA Guidelines on e-assessment for Schools (BD2625, June 2005)*.

National Unit specification: support notes (cont)

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Opportunities for developing Core Skills

Components of the Core Skill of *Problem Solving*, such as Planning and Organising and Critical Thinking will be developed as candidates undertake this Unit. 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.

Opportunities also arise for candidates to develop the Core Skill of *Information and Communication Technology* at SCQF level 3, by researching Health and Safety legislation affecting their area of work.

Numeracy skills at SCQF level 4 will be developed through the interpretation of information from working drawings and specifications.

The Core Skill of *Communication* at SCQF level 4 will be developed as candidates will have the opportunity to develop written and/or oral communication skills for the knowledge part of the assessment for Outcome 1. As candidates complete practical tasks, they should be expected to communicate with others using the correct terminology, tone and style suited to the workplace.

This Unit has the Critical Thinking component of Problem Solving embedded in it. This means that when candidates achieve the Unit, their Core Skills profile will also be updated to show they have achieved Critical Thinking at SCQF level 4.

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

History of changes to Unit

Version	Description of change	Date
02	Amended to incorporate Shoring/Wall Slapping.	19/12/2016

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