



National Unit specification

General information

Unit title: Stonemasonry: Building with Stone (SCQF level 5)

Unit code: HA2W 45

Superclass: TG

Publication date: February 2016

Source: Scottish Qualifications Authority

Version: 01

Unit purpose

This Unit is suitable for learners with no experience in the subject area and introduces learners to building natural stone masonry walling. Designed to develop the learner's ability to undertake setting out and building of block work backing structures and traditional Random Rubble stone walling. It also develops knowledge and awareness of the various materials, tools and equipment used in the stonemasonry craft.

Throughout this Unit, learners will develop the skills to identify any potential hazards and will adhere to health and safety, sustainability and waste management regulations and legislation at all times.

Outcomes

On successful completion of the Unit the learner will be able to:

- 1 Demonstrate knowledge and understanding required to build random rubble stonewalling.
- 2 Set out and build block work backing structure.
- 3 Set out and build random rubble.

Credit points and level

1 National Unit credit at SCQF level 5: (6 SCQF credit points at SCQF level 5)

Recommended entry to the Unit

While entry is at the discretion of the centre, basic *Numeracy*, *Communication* and *Problem Solving* skills at SCQF level 4 would be beneficial.

National Unit specification: General information (cont)

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Core Skills

Opportunities to develop aspects of Core Skills are highlighted in the Support Notes for this Unit specification.

Achievement of this unit gives automatic certification of the following Core Skills component:

| | |
|----------------------|-----------------------------------|
| Complete Core Skill | None |
| Core Skill component | Critical Thinking at SCQF level 5 |

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.

Equality and inclusion

This Unit specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence.

Further advice can be found on our website www.sqa.org.uk/assessmentarrangements.

National Unit specification: Statement of standards

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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 knowledge and understanding required to build random rubble stonewalling.

Performance Criteria

- (a) Identify and select terminology related to setting out of structures.
- (b) Identify and select practices relating to the building of block walls.
- (c) Identify methods used to build natural stone rubble walling.

Outcome 2

Set out and build block work backing structure.

Performance Criteria

- (a) Set out block walling in accordance with the given specification.
- (b) Build corners of block walling plumb, straight and level.
- (c) Build courses of block walling plumb, straight and level.
- (d) Insert wall ties.
- (e) Tools are selected and handled correctly

Outcome 3

Set out and build random rubble.

Performance Criteria

- (a) Measure and set out random rubble walling in accordance with given specification.
- (b) Build random rubble walling straight.
- (c) Walling is plumb at ends and face and level across the top.
- (d) Uniform joints
- (e) Correct bond
- (f) Wall is pointed with lime mortar.
- (g) Tools are selected and handled correctly.

National Unit specification: Statement of standards

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Evidence Requirements for this Unit

Learners must adhere to relevant Health and Safety regulations and legislation relating both to working practices within the construction environment, as well as those specific to any practical task they are requested to carry out (such as emphasising the importance of selecting and using the correct PPE at all times).

Evidence is required to demonstrate that learners have achieved all Outcomes and Performance Criteria.

For Outcome 1 written and/or oral recorded evidence is required to demonstrate learners' knowledge of terminology, construction practices, tools, equipment and work methods relating to building with stone against block backing. Assessment will be conducted under controlled, closed-book, supervised conditions.

For Outcomes 2 and 3 product and performance evidence is required to demonstrate that the learner has achieved all Outcomes to the standards specified or given by centres and within the Performance Criteria. Learners will be required to set out and build a random rubble wall suitably tied to a blockwork backing structure.

Assessment of these Outcomes will be evidenced through observation of work processes and assessment of completed work model. Learners must meet the given standards and tolerances during the practical assessments. An assessor observation checklist must be used to record this evidence. Assessment should be conducted under controlled, supervised conditions.

An example of the standards required for the observation checklist in Outcomes 2 and 3 are listed but can be devised by the centre based on the work model, materials specification and health and safety requirements:

Outcome 2

| Summary of standards (working towards industrial tolerances) | |
|---|--------------------------------|
| Item | Measurement of standard |
| Set out block walling in accordance with the given specification | +/- 6 mm |
| Build corners of block walling plumb and level | +/- 6 mm |
| Build courses of block walling plumb and level | +/- 6 mm |
| Insert wall ties to given specification | Yes/No |
| Tools are selected and handled correctly | Yes/No |
| Health and safety is adhered to at all times | Yes/No |

National Unit specification: Statement of standards (cont)

Unit title: Stonemasonry: Building with Stone (SCQF level 5)

Outcome 3

| Summary of standards (working towards industrial tolerances) | |
|---|-------------------------|
| Item | Measurement of standard |
| Measure and set out random rubble walling in accordance with given specification. | +/- 6 mm |
| Build random rubble walling straight | +/- 6 mm |
| Walling is plumb at ends and face and level across the top. | +/- 6 mm |
| Uniform joints | Yes/No |
| Correct bond | Yes/No |
| Wall is pointed with lime mortar. | Yes/No |
| Tools are selected and handled correctly. | Yes/No |
| Health and safety is adhered to at all times. | Yes/No |

A suggested wall size would be 675 mm height from bottom arris to wall head and 2240 in length for both the block backing and random rubble cladding suitably tied.

At all times learners must comply with current health, safety and welfare, sustainability and waste management requirements and legislation. This includes the selection and use of appropriate personal protective equipment.



National Unit Support Notes

Unit title: Stonemasonry: Building with Stone (SCQF level 5)

Unit Support Notes are offered as guidance and 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

The content and context of this Unit is aimed at learners who are interested in pursuing a career in the craft of Stonemasonry.

The learner successfully completing this Unit will be given knowledge and understanding of terminology, construction practices and in the use of tools and equipment for the setting out and building of basic blockwork backing structures and a random rubble walling. Learners working in pairs will set out and erect a straight run of a blockwork backing structure with the insertion of wall ties and then set out and build random rubble walling as a cladding. Random rubble being a walling style used much in the past and continues to be used much today as a cladding to blockwork in Stonemasonry.

The learning environment for this Unit will be a combination of classroom and workshop based learning. The knowledge element of this Unit would be taught in a classroom environment and put into practice in the workshop in conjunction with practical Outcomes.

The content of the Unit is set at an introductory level so that learners can develop basic knowledge and understanding of Block and Rubble walling in a construction environment and can be used as a progression pathway into a Vocational Qualification in Stonemasonry.

Health and safety, sustainability and waste management are vital to working practices within the construction industry. Wherever appropriate during the delivery of this Unit, an emphasis will be placed on the correct application of health and safety, sustainability and waste management principals and processes, in accordance with current codes of practice and legislation.

This Unit does not fully comply with the following National Occupational Standard although does contain elements of:

COSVR190 — Erect basic external stonemasonry.

National Unit Support Notes (cont)

Unit title: Stonemasonry: Building with Stone (SCQF level 5)

Guidance on approaches to delivery of this Unit

The training for this Unit should take place in a separate training area independent of the productive work environment and using dedicated equipment and resources. This should cover theoretical and practical principles of setting out and building block and natural stone walling before the learner carries out any practical application of knowledge.

For all Outcomes, delivery should be set at introductory level and note that most students may be inexperienced to workplace or hazardous environments, so Health and Safety should be strictly adhered to. Any potential hazards, risks and the control methods should be conveyed to all learners/learners.

All knowledge element Outcomes can be delivered in a classroom environment with quality and up to date resources. A site visit to look at a variety of building styles and examples of random rubble walling would be beneficial.

For all practical based activities a learner centred learning and teaching approaches are encouraged with learners actively participating in practical activities after lecturer demonstration of key construction practices and principles. Emphasis should be placed on the importance of being able to read and use a spirit level, setting up and using a string line, setting out the first course of blockwork and the bonding arrangements of the stone during any practical activities and assessments.

Learners should be advised that, with the use of stone that may contain Silica dust, they must avoid trimming or working stone to an extent that silica dust becomes airborne and poses a risk to themselves and others. Reference should be made to **Control of Substances Hazardous to Health Regulations 2002**.

Guidance on approaches to assessment of this Unit

Centres may use the method of assessment which they consider to be most appropriate but are encouraged to use the Training Assessment Programme (TAP) developed centrally by SQA. It is expected that learners will have to demonstrate current knowledge and understanding of safe working practice and risk assessment methods, etc prior to being set the assessment tasks.

Knowledge and Understanding of the processes involved in *Stonemasonry: Building with Stone (SCQF level 5)* should be assessed before any practical assignments are carried out by learners. This will include assessment of a learner's ability to prepare the work area for laying modular pavement.

Practical assignments should be carried out under supervised conditions and recorded in an assessor observation/operational checklist. Assessments should confirm that a learner has the ability to safely lay modular pavement using designated machinery or equipment correctly and safely, whilst adhering to current statutory Health and Safety regulations and legislation.

National Unit Support Notes (cont)

Unit title: Stonemasonry: Building with Stone (SCQF level 5)

Adherence to current statutory working regulations and Health and Safety procedures will be observed during the practical exercise carried out by the learner towards all Outcomes.

Detailed assessment material for this Unit will be found in the relevant Training and Assessment Programme (TAP). Centres may use the instruments of assessment which they consider to be most appropriate but are advised to use the TAP which has been developed centrally by SQA. Any other instruments of assessment used must be comparable to the TAP and have been prior verified.

Opportunities for 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 learner evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. The most up-to-date guidance on the use of e-assessment to support SQA's qualifications is available at www.sqa.org.uk/e-assessment.

Opportunities for developing Core and other essential skills

Components of the Core Skill of *Problem Solving* at SCQF level 5, Critical Thinking and Planning and Organising, may be developed as learners undertake this Unit. Learners will need to take account of a range of factors in order to work efficiently and safely, such as the interpretation of drawings, choice of tools and appropriate materials, application of scientific principles, risk assessments, health, safety and welfare and a sustainable approach. Individual discussions with tutors may enhance the evaluation of productive work practices.

There are opportunities to develop the Core Skill of *Working with Others* at SCQF level 5, particularly in Outcomes 2 and 3, as these practical assessments should ideally be carried out in pairs. Learners can agree responsibilities and provide support and information to each other during the practical group activities.

There are opportunities for learners to develop the Core Skill of *Numeracy* at SCQF level 5 could be enhanced through the knowledge evidence in the calculation of materials and equipment, measuring and setting out.

There are opportunities for learners to develop the Core Skill of *Communication* at SCQF level 5. As learners complete practical tasks they need to communicate effectively 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 learners achieve the Unit, their Core Skills profile will also be updated to show they have achieved Critical Thinking at SCQF level 5.

History of changes to Unit

| Version | Description of change | Date |
|---------|-----------------------|------|
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General information for learners

Unit title: Stonemasonry: Building with Stone (SCQF level 5)

This section will help you decide whether this is the Unit for you by explaining what the Unit is about, what you should know or be able to do before you start, what you will need to do during the Unit and opportunities for further learning and employment.

This Unit is an introduction to building with stone in the craft of Stonemasonry, the craft of being able to build and repair natural stone and work natural stone into geometric shapes typically undertaken in the Construction, Repair and Maintenance construction sectors.

This Unit will develop your ability to understand the tools, materials and procedures to set out and build natural stone Random Rubble with a blockwork backing that would be typically used in a new build construction stonemasonry project. It also develops knowledge and awareness of the various materials, tools and equipment used in the stonemasonry craft.

This Unit is suitable if you wish to gain a basic understanding and knowledge of stonemasonry setting out and building work through knowledge and understanding and practical tasks and assessments.

On completion of this Unit you will be able to:

- 1 Demonstrate knowledge and understanding required to build random rubble stone walling.
- 2 Set out and build block work backing structure.
- 3 Set out and build random rubble.

Assessment is through closed-book multiple-choice questions and in the completion of practical assignments.

Elements of Core Skills; *Problem Solving, Working with Others, Numeracy and Communication* will be developed in successful completion of this Unit, but they will not be assessed or certified.

This Unit is valuable in the potential for development of employability and citizenship in the new build and repair and maintenance constructions sectors. Employers are actively seeking learners that can demonstrate relevant knowledge, understanding and competency, which can be gained in the completion of this Unit.

This unit has the Critical Thinking component of Problem Solving embedded in it. This means that when you achieve the Unit, your Core Skills profile will also be updated to show you have achieved Critical Thinking at SCQF level 5.