



National Unit specification: general information

Unit title: Bricklaying: Install Drainage (SCQF level 6)

Unit code: H08R 12

Superclass: TH

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Summary

This Unit is suitable for candidates working towards a Modern Apprenticeship in Bricklaying and will develop the candidate's skills and knowledge in installing drainage. This Unit is designed to provide candidates with competence in the use of tools and equipment to prepare for, install and test new or replacement drainage and the ability to apply these skills in the workplace.

Outcomes

- 1 Demonstrate knowledge and understanding of terminology, materials, construction practice and techniques used in installing and testing of drains.
- 2 Demonstrate knowledge and understanding of drainage systems.
- 3 Set out and install drainage

Recommended entry

While entry to this Unit is at the discretion of the centre, candidates undertaking the Professional Development Award in Bricklaying at SCQF level 6 must meet the requirements of the Modern Apprentices which include being employed in the relevant craft industry.

Credit points and level

1 National Unit credit at SCQF Level 6(6SCQF 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.*

General information (cont)

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Core Skills

There is no automatic certification of Core Skills or Core Skill components in this Unit. Opportunities for developing aspects of the following Core Skills are highlighted in Support Notes of this Unit.

- ◆ Problem Solving at SCQF level 4
- ◆ Working with others at SCQF level 4
- ◆ ICT at SCQF level 3
- ◆ Numeracy at SCQF level 4
- ◆ Communications at SCQF level 4

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 of terminology, materials, construction practice and techniques used in installing and testing of drains.

Performance Criteria

- (a) Identify terminology, materials, pipework and drainage components.
- (b) Describe construction practices and techniques used to install drainage.
- (c) Outline methods used to test drains.

Outcome 2

Demonstrate knowledge and understanding of drainage systems.

Performance Criteria

- (a) Identify terminology, materials, tools and equipment related to drainage systems.
- (b) Describe techniques and construction practices used to install drainage systems.
- (c) Select drain pipework and components for drainage systems.

Outcome 3

Set out and install drainage

Performance Criteria

- (a) Interpret drawings, specifications and schedules for installing drainage.
- (b) Select resources, tools and equipment required to install drainage in accordance with the specification.
- (c) Measure, mark-out, lay align, joint, and test drainage in accordance with the specification.
- (d) Comply with current Health and Safety and Sustainability requirements during all work methods and activities.

National Unit specification: statement of standards (cont)

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Evidence Requirements for this Unit

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

Evidence is required to demonstrate that the candidates have achieved this Unit to the standard specified all Outcomes and Performance Criteria.

Written and/or oral recorded evidence is required to demonstrate that the candidate has achieved Outcomes 1 to the standard specified in the Performance Criteria. Candidates will be required to demonstrate their knowledge of terminology, materials, construction practice and techniques used in installing and testing of drains by successful completion of a question paper relating to installing drainage. This assessment will be conducted under controlled, closed-book supervised conditions.

Written and/or oral recorded evidence is required to demonstrate that the candidate has achieved Outcomes 2 to the standard specified in the Performance Criteria. Candidates will be required to demonstrate their knowledge of drainage systems by successful completion of a question paper relating to drainage systems. This assessment will be conducted under controlled, closed-book supervised conditions.

Product and performance evidence is required to demonstrate that the candidate has achieved Outcomes 3 to the standards specified in the Performance Criteria. On completion the drainage installation candidates will have developed skills to interpret drawings and specifications, select tools, resources and equipment to measure, mark-out, lay align, joint and test drainage in accordance with the specification.

The completed drain can be foul or surface water system using either clay concrete, metal or plastic pipes, including a drain run of 20m and an inspection chamber. Candidates will work in pairs. Assessment of these Outcomes will be evidenced through observation of work processes and assessment of the completed work. Candidates must meet the given standards during the practical assessment. An assessor observation checklist must be used to record this evidence. Assessment should be conducted under controlled, supervised conditions.

Outcome 3

Summary of standards (working towards industrial tolerances)	
Item	Measurement of standard
Interpret the given drawings and specifications.	All drainage pipework, materials and components selected accurately.
Selects the correct tools and equipment to carry out the work.	To allow correct installation.
Granular bed laid to correct depth.	$\pm 5\text{mm}$
Measure, mark-out and cut pipework	$\pm 10\text{mm}$ in 2 metres
Prefabricate pipework out with trench	As per specification
Install drain to correct gradient	Gradient maintained $\pm 10\text{mm}$ in 4m

National Unit specification: statement of standards (cont)

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Install drain to correct alignment	Aligned correctly \pm 10mm
Fit drainage components	In accordance with the specification
Joint drainage	Joints fitted correctly/watertight
Install an inspection chamber	In accordance with the specification
Test the completed drain	To current Building Control requirements
Health & Safety	
Risk assessment	
Safety boots	Worn at all times
Hard hat	Worn at all times
High visibility vest	Worn at all times
Gloves	Worn at all times
All other PPE	As risk assessed
Method statement	
Working area	Kept clear at all times
Materials	Stacked safely at all times
Tools (during working)	Handled correctly at all times
Tools (after work)	Cleaned and stored safely
Sustainability	
Waste	Kept to a minimum at all times.
Recycling	Materials recycled whenever possible.
Waste disposal	Waste disposed correctly/appropriately

National Unit specification: support notes

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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 6.

The successful completion of this Unit will provide candidates with the required knowledge and skills relating to installing drainage including, terminology, materials, construction practice and techniques used in installing and testing of drains.

This Unit would be offered to candidates working towards a Modern Apprenticeship in Bricklaying and will develop the candidate's skills in installing drainage. 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 installing drainage, including measuring, marking-out, laying aligning, jointing and testing foul or surface water drainage in either clay, concrete, metal or plastic pipework.

It 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 comply 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 learning and teaching approaches for this Unit

Candidates must be given the opportunity to further develop their skills in bricklaying by learning about installing drainage

Candidate centred learning and teaching approach are encouraged with candidates actively participating in practical activities after lecturer demonstration of key construction practices and principles.

The use of effective questioning techniques to confirm understanding of salient learning objectives should be central to learning and teaching approaches used in classrooms or workshops.

Candidates should be encouraged to learn at their own pace with e-learning opportunities available to suit their preferred learning style.

The use of e-learning as a teaching tool should be adopted by lecturers wherever possible to enable candidates to develop at their own pace using preferred learning styles.

National Unit specification: support notes (cont)

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Learning and Teaching approaches should ensure that candidates are acquiring the underpinning knowledge required for the Unit in tandem with undertaking practical workshop activities.

There are opportunities for candidates to develop co-operative working skills as the practical assessments may be carried out working in teams or in pairs. Candidates should take equal responsibility for activities and provide support and information to each other during assessments. After assessment, they should be encouraged to consider how effectively they supported each other.

Opportunities should be taken throughout delivery of this Unit to meet the requirements of the PDA generic Units and 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 and Handle Resources*

Guidance on approaches to assessment for this Unit

Detailed assessment material for this Unit will be found in the Bricklaying 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 Bricklaying 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 knowledge and understanding of terminology, materials, construction practice and techniques used in installing and testing of drains will be assessed through a question paper.

Candidates should be given as much practise as possible in installing drainage, prior to being set the assessment. Evidence will be gathered for Outcome 3 through observation that the candidates have met the given standards and tolerances during the practical assessment. An assessor observation checklist should 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* at SCQF level 4, 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 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 assessors will enhance the evaluation of productive work practices.

There are opportunities to develop the Core Skill of *Working with Others* at SCQF level 4, particularly in Outcome 3 as these practical assessments should be carried out in pairs. Candidates can agree responsibilities and provide support and information to each other during the practical group activities.

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, manufacturer's instructions and specifications, interpretation of drawings.

Numeracy at SCQF level 4 could be enhanced through the knowledge evidence in installing drainage and the practical use of calculation and measurement required for teaching and learning assessments for Outcomes 1 & 3.

There will be opportunities for candidates to develop the Core Skills of *Communications* at SCQF level 4 through the knowledge part of the assessment for Outcome 1. As candidates complete practical tasks in Outcome 3, they should be expected to communicate with others using the correct terminology, tone and style suited to the workplace while interpreting drawings,

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

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