



Higher National Unit specification

General information for centres

Unit title: Stonemasonry: Tracery Cutting

Unit code: F8PM 35

Unit purpose: This Unit is designed to enable the candidates to develop their knowledge, understanding and skills in tracery cutting. Candidates will develop their ability to set out and produce scale drawings, produce templates and cut and build tracery stone. This Unit will provide candidates with competence in the use of tools and equipment to set out and build tracery and the ability to apply these skills in the workplace. It is also designed to enable the candidate to develop their skills and understand and use of stonemasonry terminology, techniques and practices related to setting out and building a stone tracery model.

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

- 1 Produce full size and scale drawings of tracery.
- 2 Produce working templates.
- 3 Cut tracery stone.
- 4 Building tracery stone.

Credit points and level: 1 HN credit at SCQF level 8: (8 SCQF credit points at SCQF level 8*)

**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 the centre. However, it is recommended that candidates have completed the Professional Development Award in Stonemasonry at SCQF level 6 or have the equivalent level of Industrial experience and prior learning.

Core Skills: 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.

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. The Unit forms part of the Professional Development Award in Stonemasonry at SCQF level 7 and is aimed at candidates following a career in stonemasonry and receiving complementary industrial experience.

General information for centres (cont)

Assessment: The candidate will be given the opportunity to enhance their skills and knowledge in stonemasonry by learning about Tracery setting out and cutting. Techniques and practices used to set out and cut tracery should be integrated in the practical tasks undertaken. The principles and techniques should be explained throughout the practical activities.

This Unit is assessed on the candidates' performance of setting out and tracery cutting 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: Tracery Cutting

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

Outcome 1

Produce full size and scale drawings of tracery

Knowledge and/or Skills

- ◆ Sequence of work
- ◆ Drawing tools and equipment
- ◆ Tangents and normals
- ◆ Determination of centers using loci
- ◆ Circles within circles and pointed arches
- ◆ Geometrical shapes

Evidence Requirements

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

- ◆ plan the sequence of work and select drawing tools and equipment
- ◆ produce drawings from a given specification and size

All the Evidence Requirements must be met and all items in the knowledge and skills covered. Evidence should be gathered through the production of one full size drawing and scale drawings of tracery which will include tangents and normals also determination of centre points, circles and geometrical shapes. Assessment should be conducted under open-book, supervised conditions.

Assessment Guidelines

In the 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 assignment in a classroom environment lasting up to three hours.

This Outcome is assessed on the candidates ability to produce drawings of tracery to given specification.

Candidates should provided with details of what is to be included in the drawings and specification. Assessment should be carried out in suitable classroom environment. Timing for this assessment should be determined prior to commencement. Drawings should be retained as evidence that the candidate has met all knowledge and skills included in this Outcome.

Higher National Unit specification: statement of standards (cont)

Unit title: Stonemasonry: Tracery Cutting

Outcome 2

Produce working templates

Knowledge and/or Skills

- ◆ Details and dimension
- ◆ Template production
- ◆ Tools and equipment

Evidence Requirements

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

- ◆ extract details and dimensions from a drawing.
- ◆ select and use tools and equipment for template production
- ◆ cut templates in accordance with the drawing

All the Evidence Requirements must be met and all items in the knowledge and skills covered. Evidence should be gathered through the production of templates which should be cut to a tolerance of +/- 1 mm. Assessment should be conducted under closed-book supervised conditions.

Assessment Guidelines

In the assessment candidates will be required to complete an assignment based on template production for an actual work project. This could be conducted as an assignment in a classroom/workshop environment lasting up to three hours.

This Outcome is assessed on the candidates ability to produce templates for tracery to given specifications.

Candidates should be provided with details of the templates required, drawings and specification. Assessment should be carried out in a suitable classroom/workshop environment. Timing for this assessment should be determined prior to commencement.

Higher National Unit specification: statement of standards (cont)

Unit title: Stonemasonry: Tracery Cutting

Outcome 3

Cut tracery stone

Knowledge and/or Skills

- ◆ Apply templates
- ◆ Cut tracery stones

Evidence Requirements

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

- ◆ cut tracery to specification
- ◆ prepare to specified finish
- ◆ follow current safe working practices
- ◆ minimise the waste of materials throughout practical work
- ◆ work to specified tolerances identified in the specification

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

Apply templates and scribe outlines on stone	± 1mm
Face templates cut to shape	± 1mm
Joint template profile cut to	± 1mm
Foils of stone	± 1mm
Eyes of tracery cut to	± 2mm
Glazing check cut to	± 2mm
Stone prepare to receive dowels	± 2mm
Fixings	± 2mm

Evidence will be gathered through observation of work process 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 candidates, actual performance of preparing for, cutting and finishing tracery stone to a given specification and required tolerances.

Candidates should be provided with drawings and specification 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 candidates have evidenced all the knowledge and skills included in this Outcome to the specification and tolerances required.

Higher National Unit specification: statement of standards (cont)

Unit title: Stonemasonry: Tracery Cutting

Outcome 4

Build tracery stone

Knowledge and/or Skills

- ◆ Build tracery stone
- ◆ Dowels and fixings

Evidence Requirements

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

- ◆ this outcome is assessed on the candidates, actual performance of preparing for, cutting and finishing tracery stone to a given specification and required tolerances build tracery stones to specification
- ◆ follow current safe working practice
- ◆ minimise the wastage of materials throughout practical work
- ◆ work to the specified tolerances in the specification

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

Vertical alignment (plumb) per 600mm	± 2mm
Level per meters	± 3mm
Alignment against straight edge	± 2mm
Pointing	as specified

Evidence will be gathered through observation of work process 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.

Assessment Guidelines

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. Candidates should be provided with drawings and specification 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: F8PM 35
Unit title: Stonemasonry: Tracery Cutting
Superclass category: TG
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History of changes:

Version	Description of change	Date

Source: SQA

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Higher National Unit specification: support notes

Unit title: Stonemasonry: Tracery Cutting

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 a mandatory Unit in the Professional Development Award in stonemasonry at SCQF level 7 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 setting out and tracery cutting.

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 of setting out and tracery cutting applied where possible. Terminology commonly associated with stonemasonry should also be used throughout this Unit.

It is vitally important that candidates gain an understanding and knowledge of the sequencing of operations with regard to setting out and tracery cutting.

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.

The candidate successfully completing this Unit should achieve a level of competence of someone who, from time to time, may be expected to carry out tracery cutting and building.

Guidance on the delivery and assessment of this Unit

The principles and methods of setting out and tracery cutting 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 setting out and tracery cutting 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.

Working tolerances should be explained as being the minimum standard which will be accepted and candidates should be encouraged to evaluate their own work.

Higher National Unit specification: support notes (cont)

Unit title: Stonemasonry: Tracery Cutting

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 working drawings as an assignment.

Working with Others at SCQF level 5 could be developed when working in pairs to produce the working drawings. 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 5 may be developed by the candidates' carrying out individual research of modern and traditional tracery cutting, 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 tracery cutting and construction techniques. 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 working drawings, measuring, calculating and setting out.

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 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 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

General information for candidates

Unit title: Stonemasonry: Tracery Cutting

This Unit is designed to develop your practical skills and knowledge of complex setting out and installation of tracery stones. You will develop your understanding of modern and traditional practices and techniques and comply with sustainability issues and current Health and Safety legislation throughout the Unit.

You will have to demonstrate the required techniques in setting out, producing templates, cutting and building tracery stones. Demonstrate your understanding of the traditional techniques and modern techniques of setting out and tracery cutting and building.

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: Produce full size and scale drawings of tracery

You will be assessed on the completion of an assignment in which you will be required to describe and explain in detail the methods used to set out, cut and build tracery. You will give detail sequence of operations required to set out, cut and build tracery.

The assessment for this Outcome will be open-book and will be carried out in a supervised environment. You will have access to your own notes that you have prepared personally for your own use. You will not be permitted to bring textbooks, handouts or other materials that you have not prepared yourself.

Outcome 2: Produce working templates

You will be assessed in your ability to:

- ◆ produce the correct templates
- ◆ work in a safe manner at all times
- ◆ meet given specifications and tolerances

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.

Outcome 3: Cut tracery stone

You will be assessed in your ability to:

- ◆ cut tracery stones
- ◆ work in a safe manner at all times
- ◆ meet given specifications and tolerances

General information for candidates (cont)

Unit title: Stonemasonry: Tracery Cutting

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.

Outcome 4: Build tracery stone

You will be assessed in your ability to:

- ◆ build tracery stones
- ◆ work in a safe manner at all times
- ◆ meet given specifications and tolerances

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.