



## Higher National Unit specification

### General information for centres

**Unit title:** Wall and Floor Tiling: Specialist Cement Work

**Unit code:** F8MT 34

**Unit purpose:** This Unit is designed to enable candidates to develop their knowledge, understanding and skills of the application of cement render and screed in a variety of specialist contexts. This Unit is primarily designed to give candidates the practical skills and competence to carry out practical tasks in the application of cement render and screed in complex situations. All applications should be suitable to receive tilework. On completion of this Unit candidates should be able to:

- 1 Demonstrate knowledge and understanding of cement render and screed for tilework.
- 2 Apply sand and cement render to circular columns.
- 3 Apply sand and cement render to curved backgrounds.
- 4 Apply sand and cement screed to gradients

**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 will be at the discretion of the centre. It would be beneficial if candidates have successfully completed the Professional Development Award (PDA) in Wall and Floor Tiling at SCQF level 6 (G9AP 46) or have the equivalent level of industrial experience and prior learning.

**Core Skills:** There are opportunities to develop the Core Skills of *Working with Others*, *Information and Communication Technology* and *Numeracy* at SCQF level 4 and *Problem Solving* and *Communication* at SCQF level 5 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. This Unit was developed as part of the Professional Development Award in Wall and Floor Tiling at SCQF level 7 and is aimed at candidates following a career in Wall and Floor Tiling and receiving complementary industrial experience.

## General information for centres (cont)

**Assessment:** This Unit is assessed on the candidate's actual performance of applying sand and cement mortar and screed in complex situations. The candidate will also have to show knowledge and understanding of the associated backgrounds, surfaces, aggregates, cements and chemical enhancers, cement manufacturing process and capillarity.

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 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. Centres may use the instruments of assessment which they consider to be most appropriate but are advised to use the Wall and Floor Tiling Training and Assessment Programme (TAP) SCQF level 7 which has been developed centrally by SQA. Any other instruments of assessment used must be comparable to the TAP 7.

Accurate records should be made of the assessment instruments used showing how evidence is generated for each Outcome and given marking schemes, checklists and recorded candidate feedback. Records of candidates' achievements should be retained. These records must be made available for external verification.

## Higher National Unit specification: statement of standards

**Unit title:** Wall and Floor Tiling: Specialist Cement Work

**Unit code:** F8MT 34

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

### Outcome 1

Demonstrate knowledge and understanding of cement render and screed for tilework

#### Knowledge and/or Skills

- ◆ Types of background and surfaces
- ◆ Preparation of backgrounds and surfaces
- ◆ Aggregates, cements and chemical enhancers
- ◆ Cement manufacturing processes
- ◆ Capillarity

#### Evidence Requirements

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

- ◆ identify different types of wall backgrounds for which cement render is applied to and describe the preparation methods used prior to the application of cement render
- ◆ identify different types of floor surfaces for which cement screed is applied to and describe the preparation methods used prior to the application of cement screed
- ◆ identify the various aggregates, cements and chemical enhancers used in cement work for tilework and explain where and why they would be used.
- ◆ identify and explain the constituents and manufacturing process of portland cement.
- ◆ explain the effects of capillarity in cement work

Evidence must be gathered under controlled, supervised, open-book conditions. Candidates may bring to the event any notes that they have made personally. They may not bring textbooks, handouts or other material not prepared by them.

#### Assessment Guidelines

The assessment could be in the form of an exercise where the candidate will identify three wall backgrounds and three floor surfaces. They could describe the different preparation methods used in each prior to the application of cement render and screed. Candidates should also identify two types of aggregates, cements and chemical enhancers and explain where and when they would be used. The constituents and manufacturing process of Portland cement should be identified and described in a suitable exercise. The effects of capillarity in cement work should also be explained

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

**Unit title:** Wall and Floor Tiling: Specialist Cement Work

### Outcome 2

Apply sand and cement render to circular columns

#### Knowledge and/or Skills

- ◆ Workshop drawing and specification interpretation
- ◆ Preparation of columns
- ◆ Manufacture of templates
- ◆ Application of a scratch coat
- ◆ Application of screeds
- ◆ Application of sand and cement render
- ◆ Surface finishing
- ◆ Current Health and Safety legislation
- ◆ Sustainability considerations

#### Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can accurately interpret a workshop drawing and specification to prepare and render circular column using cement render. The column must be a minimum 1500mm in height and minimum 300mm in diameter and should be finished by candidates to a standard suitable for receiving tiles. Candidates must work in a safe and organised manner.

#### Summary of standards (working towards industrial tolerances)

- ◆ interpret specification correctly
- ◆ interpret drawings correctly
- ◆ prepare column correctly to receive cement render
- ◆ manufacture a template  $\pm 4\text{mm}$
- ◆ control suction correctly
- ◆ apply scratch coat to column evenly — 6mm minimum and 12mm maximum thickness
- ◆ apply screeds correctly —  $\pm 4\text{mm}$
- ◆ apply sand and cement render to column —  $\pm 4\text{mm}$
- ◆ finish render to receive tilework —  $\pm 4\text{mm}$
- ◆ comply with health and safety throughout all activities
- ◆ sustainability considered

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. Evidence must be gathered under controlled, supervised conditions with candidates working individually to manufacture a template. Candidates can work in pairs to carry out all other activities.

#### Assessment Guidelines

Candidates will be required to individually produce an accurate template, although they may work in pairs to prepare, render and finish the column in accordance with the specification and tolerances required for this Outcome. Though the assessment of this Outcome could be assessed individually, this Unit affords the opportunity for centres to take a holistic approach in assessing this Unit by creating a combined project of the requirements of Outcomes 2, 3 and 4. Candidates should be provided with drawings and specifications for the practical task and assessment should be carried out in a suitable workshop environment.

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

**Unit title:** Wall and Floor Tiling: Specialist Cement Work

### Outcome 3

Apply sand and cement render to curved backgrounds

#### Knowledge and/or Skills

- ◆ Workshop drawing and specification interpretation
- ◆ Preparation of curved backgrounds
- ◆ Trammel set up
- ◆ Application of a scratch coat
- ◆ Application of screeds
- ◆ Application of sand and cement render
- ◆ Surface finishing
- ◆ Current Health and Safety legislation
- ◆ Sustainability considerations

#### Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can accurately interpret a workshop drawing and specification to prepare and render curved background using cement render. The curved background must be a minimum area of 1800mm x 1800mm and should be finished by candidates to a standard suitable for receiving tiles. Candidates must work in a safe and organised manner.

#### Summary of standards (working towards industrial tolerances)

- ◆ prepare a curved background correctly to receive cement render
- ◆ set up a trammel correctly
- ◆ control suction correctly
- ◆ apply scratch coat to background evenly — 6mm minimum and 12mm maximum thickness
- ◆ apply screeds correctly —  $\pm 4$ mm
- ◆ apply render to background —  $\pm 4$ mm
- ◆ finish render to receive tilework —  $\pm 4$ mm
- ◆ comply with health and safety throughout all activities
- ◆ sustainability considered

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. Evidence must be gathered under controlled, supervised conditions with candidates working individually to carry out all activities.

#### Assessment Guidelines

Candidates can work in pairs to set up the trammel and render the background in accordance with the specification and tolerances required for this Outcome. Though the assessment of this Outcome could be assessed individually, this Unit affords the opportunity for centres to take a holistic approach in assessing this Unit by creating a combined project of the requirements of Outcomes 2, 3 and 4. Candidates should be provided with drawings and specifications for the practical task and assessment should be carried out in a suitable workshop environment.

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

**Unit title:** Wall and Floor Tiling: Specialist Cement Work

### Outcome 4

Apply sand and cement screed to gradients

#### Knowledge and/or Skills

- ◆ Workshop drawing and specification interpretation
- ◆ Preparation of surface area
- ◆ Datum setting and datum sticks
- ◆ Controlling of suction
- ◆ Application of sand and cement screed
- ◆ Surface finishing
- ◆ Current Health and Safety legislation
- ◆ Sustainability considerations

#### Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can accurately interpret a workshop drawing and specification to prepare and screed a surface to a gradient using cement screed. The surface area must be a minimum area of 6m<sup>2</sup> and should be finished by candidates to a standard suitable for receiving tiles. Candidates must work in a safe and organised manner.

#### Summary of standards (working towards industrial tolerances)

- ◆ prepare a surface correctly to receive cement screed
- ◆ set datum heights correctly
- ◆ control suction correctly
- ◆ set dots correctly
- ◆ set screeds correctly
- ◆ apply sand and cement screed to surface area —  $\pm 3\text{mm}$
- ◆ finish screed to receive tilework —  $\pm 3\text{mm}$
- ◆ comply with health and safety throughout all activities
- ◆ sustainability considered

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. Evidence must be gathered under controlled, supervised conditions with candidates working in pairs to carry out all activities.

#### Assessment Guidelines

Candidates can work in pairs to prepare, set datum's and screed the surface area. Though the assessment of this Outcome could be assessed individually, this Unit affords the opportunity for centres to take a holistic approach in assessing this Unit by creating a combined project of the requirements of Outcomes 2, 3 and 4. Candidates should be provided with drawings and specifications for the practical task and assessment should be carried out in a suitable workshop environment.

## Administrative Information

**Unit code:** F8MT 34

**Unit title:** Wall and Floor Tiling: Specialist Cement Work

**Superclass category:** TG

**Original date of publication:** August 2010

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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: Wall and Floor Tiling: Specialist Cement Work**

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 (PDA) in Wall and Floor Tiling at SCQF level 7.

This Unit is intended to equip candidates with all necessary underpinning knowledge and skills related to preparing and rendering columns and curved backgrounds. Candidates should also develop the underpinning knowledge and skills to apply screeds to gradients.

In Outcome 1, the candidate could be guided to understanding the importance of identifying different backgrounds and surfaces with an emphasis on the different preparation techniques required. Candidates should also be encouraged to investigate the various types of aggregates, cements and chemical enhancers used in cement work. The manufacturing process of Portland cement should be explained to the candidate with the candidate encouraged to research this using manufacturer's literature and the internet. The effects of capillarity should be explained and re-enforced with practical demonstration.

In Outcome 2 candidates' previous knowledge of cement rendering should be developed to help candidates manufacture a template and apply cement render to a column. The importance of accurate measurement should be emphasised and the importance of leaving the rendered column suitable for receiving tiles.

In Outcome 3 it should be stressed to candidates the importance of accurately setting up a trammel and of the importance of leaving the rendered background suitable for receiving tiles.

In Outcome 4 candidates should be guided on the setting of the datum line and the use of the datum stick in setting the screeds to gradients. Workshop drawings could be used to aid the candidate in the setting out of the screeds. The floor on completion should be suitable for receiving tiles.

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. Safe 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. Emphasis should be placed on appropriate areas such as waste management and effective sourcing and use of materials.

Where feasible, centres should also incorporate modern methods of construction used in industry. Candidates should be made aware of current industry practice and emerging practice or technology which may become main-stream in the future.

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

**Unit title:** Wall and Floor Tiling: Specialist Cement Work

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

As part of the Professional Development Award (PDA) in Wall and Floor Tiling at SCQF level 7, this Unit may be delivered in a sequence suitable to individual candidates and centres. When completing this Unit as part of the PDA it is recommended that, where possible, opportunity is taken to integrate aspects of Constructional Technical Communication Skills (DW4D 34).

This Unit is intended to equip candidates with all necessary underpinning knowledge and skills related to the application of cement render to columns and curved backgrounds and the application of cement screed on floors to gradients.

Outcome 1 could be delivered with the candidates working individually to generate the relevant evidence. This Outcome provides the candidate with the opportunity to use the internet to access the information required to satisfy the Outcome requirement. Candidates could also be encouraged to word process responses for summative assessments and could use digital images as part of their evidence.

In Outcome 2 candidates will be required to work in pairs, to generate practical evidence in applying sand and cement render to a column. Candidates will have to work individually in the manufacturing of the template. Guidance and instruction in the production of the template should be given by the lecturer.

In Outcome 3 candidates will be required to work in pairs, to set up the trammel and applying sand and cement render to the curved background. Guidance and instruction in the setting up of the trammel and in the importance of accurate measurement should be given by the lecturer.

In Outcome 4 candidates will be required to work in pairs to prepare surface areas, set datums and apply sand and cement screed to a gradient. Guidance and instruction in the setting datums for gradients and the importance of accurate measurement should be given by the lecturer. Whilst a minimum area of 6m<sup>2</sup> is specified this Outcome affords the opportunity for candidates to work as part of a team to complete larger areas.

If feasible, site visits or information about modern and potential future methods of construction would be beneficial. This approach could be used to enhance the candidate's experience and understanding of how their skills and knowledge might be applied in real industry situations.

Centres may use the instruments of assessment which they consider to be the most appropriate but are advised to use the Wall and Floor Tiling Training and Assessment (TAP) at SCQF level 7 which has been developed centrally by SQA. Any other instruments of assessment used must be comparable to the TAP 7.

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

**Unit title:** Wall and Floor Tiling: Specialist Cement Work

### *Opportunities for developing Core Skills*

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

There are opportunities to develop the Core Skill of *Information and Communication Technology* at SCQF level 4 in Outcome 1 where the candidates will be encouraged to access information through internet research particularly in the manufacturing process of Portland cement and the various aggregates, cements and chemical enhancers used in cement work. They could also be encouraged to word process responses for formative assessments and could use digital images as part of their evidence.

There are opportunities to develop the Core Skill of *Numeracy* at SCQF level 4 through the interpretation of information from working drawings and the practical use of calculation and measuring scales.

There are opportunities to develop the Core Skill of *Problem Solving* at SCQF level 5. 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 and the use of role play will enhance the evaluation of efficient working practices.

There are opportunities to develop the Core Skill of *Communication* at SCQF level 5 throughout this Unit by the candidates describing the manufacture of Portland cement and the effects of capillarity in cement work. In the workshop candidates will interpret specifications and workshop drawings. As candidates complete practical tasks, they should be expected to communicate with others using the correct terminology, tone and style suited to the workplace.

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

**Unit title:** Wall and Floor Tiling: Specialist Cement Work

### Open learning

Although this Unit could be delivered in part by distance learning, it would require considerable planning by the centre to ensure the sufficiency and authenticity of candidate evidence. Arrangements would have to be made to ensure that:

- ◆ candidates have access to a suitable workshop with suitable equipment and tools
- ◆ health and safety considerations are fully taken into account
- ◆ the practical activities are supervised by a responsible person and clearly recorded (using an assessment checklist for the assessor)
- ◆ the assessor is, at some point, able to question the candidate on that performance
- ◆ assessment is carried out under the stated conditions

For information on open learning arrangements, please refer to the SQA guide *Assessment and Quality Assurance of Open and Distance Learning* ([www.sqa.org.uk](http://www.sqa.org.uk))

### 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](http://www.sqa.org.uk/assessmentarrangements)

## General information for candidates

### Unit title: Wall and Floor Tiling: Specialist Cement Work

This Unit has been designed to further your career in the construction industry by developing your competencies and improving your knowledge of specialist cement work in Wall and Floor Tiling. It has been written as part of the Professional Development Award (PDA) in Wall and Floor Tiling at SCQF level 7, and is intended for experienced crafts persons working in the construction industry as Wall and Floor Tilers

The Unit will help develop your underpinning knowledge and skills related to the methods of applying sand and cement render to columns and curved backgrounds. The Unit will also help develop your skills applying then grading sand and cement screed to floors.

You will be assessed on your knowledge of identifying the different types of backgrounds and surfaces and the preparation methods required prior to applying cement render and screed. You will also be assessed on the aggregates and chemical enhancers used in specialist cement work with further assessment on the manufacturing of cement and the effects of capillarity in cement work.

You will also be assessed practically in a workshop on preparing, and then applying sand and cement render to a column and curved background and applying then grading sand and cement screed to floors. You will be given all specifications required prior to undertaking the practical assessments.

Though this Unit requires you to be assessed on your ability to apply sand and cement render and screed to both walls and floors, the centre where you are undertaking this Unit may assess all of these requirements individually or together as a combined project.

There are opportunities within the Unit to develop your Core Skills *Problem Solving* at SCQF level 5 and *Working with Others* at SCQF level 4, *Communication* at SCQF level 5, *Information and Communication Technology* and *Numeracy* at SCQF level 4 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

If you successfully complete this Unit and the full PDA at SCQF level 7, you will not only have advanced your craft skills, but will automatically receive some credit if you progress on to the HNC Construction.