



Higher National Unit specification

General information for centres

Unit title: Wall and Floor Tiling: High Density Materials and Substrates

Unit code: F8MR 34

Unit purpose: This Unit is designed to enable candidates to develop their knowledge, understanding and skills of high density materials and substrates and their installation. The Unit explores the behaviour and characteristics of high density materials and substrates and how they affect fixing specifications and techniques. It also covers manufacture, raw materials, and material enhancement and is primarily aimed at developing the practical skills required for installation. On completion of this Unit candidates should be able to:

- 1 Demonstrate knowledge and understanding of high density materials and substrates.
- 2 Prepare high density substrates for wall and floor tiling.
- 3 Apply high density materials to various substrates.
- 4 Cut, core and shape high density materials.

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 *Information and Communication Technology, Working with Others, Problem Solving, Communication and Numeracy* 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. 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 the preparation, application, cutting, coring and shaping of high density materials and substrates. The candidate will also have to show knowledge and understanding of the associated materials, methods, procedures and high density tile manufacture.

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: High Density Materials and Substrates

Unit code: F8MR 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 high density materials and substrates

Knowledge and/or Skills

- ◆ Types of high density materials
- ◆ Types of high density substrates
- ◆ Types of adhesives and fixings required for high density materials and substrates
- ◆ Suitability of backgrounds to receive high density materials
- ◆ Weight calculations
- ◆ High density tile manufacturing process

Evidence Requirements

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

- ◆ identify three high density materials and three substrates
- ◆ specify suitable fixing resources for high density materials and substrates
- ◆ describe modifications high density backgrounds require prior to tiling.
- ◆ calculate weights of high density materials including fixing compounds on six occasions
- ◆ describe the processes and raw materials used in the manufacture of high density tiles

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 a series of exercises. The candidate will be asked to identify types of high density materials and high density substrates. They must describe modifications that must occur prior to fixing and also specify suitable fixing materials. Candidates must also calculate the weights of high density materials and describe processes and materials used in the manufacture of high density materials in a suitable exercise.

Higher National Unit specification: statement of standards (cont)

Unit title: Wall and Floor Tiling: High Density Materials and Substrates

Outcome 2

Prepare high density substrates for wall and floor tiling

Knowledge and/or Skills

- ◆ Surface identification
- ◆ Surface preparation
- ◆ Bonder and primer application
- ◆ Mechanical keying
- ◆ Increasing contact surface areas
- ◆ 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 identify and prepare a high density surface using mechanical means and through the use of bonders and primers. The surface area on completion must have an increased surfaced contact area and be suitable for receiving tiles. Candidates must work in a safe and organised manner.

Summary of standards (working towards industrial tolerances)

- ◆ surfaces — identified and assessed correctly
- ◆ surfaces — prepared correctly
- ◆ bonders and primers — applied as per manufacturers' instruction
- ◆ mechanical key — applied correctly
- ◆ contact surface area- adhesion enhanced
- ◆ 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 complete all activities.

Assessment Guidelines

Candidates will be required to work individually to identify, assess and prepare the surfaces in accordance with the specification and tolerances required for this Outcome. Candidates will also be required to apply bonders and primers and apply a mechanical key to the required specification. 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 following the requirements of Outcomes 2, 3 and 4. Candidates should be provided with specifications for the practical task and the assessment should be carried out in a suitable workshop environment.

Higher National Unit specification: statement of standards (cont)

Unit title: Wall and Floor Tiling: High Density Materials and Substrates

Outcome 3

Apply high density materials to various substrates

Knowledge and/or Skills

- ◆ Specification interpretation
- ◆ Producing a workshop drawing
- ◆ Surface preparation
- ◆ High density product identification
- ◆ Fixing and grouting material selection
- ◆ Mix and apply adhesives
- ◆ Mix and apply grout
- ◆ 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 tile a surface using high density materials. The tiled surface must be a minimum area of 1500mm × 1500mm. Candidates must also demonstrate that they can grout the tiled area leaving a bloom free finish and must work in a safe and organised manner.

Summary of standards (working towards industrial tolerances)

- ◆ interpret specification correctly
- ◆ produce workshop drawing correctly
- ◆ prepare background correctly
- ◆ identify tiles correctly
- ◆ set out correctly
- ◆ mix and apply adhesives — as per manufacturers' specification
- ◆ fix tiles using suitable adhesives ± 3 mm
- ◆ mix and apply grout — as per manufacturers' specification
- ◆ grouting — bloom free finish
- ◆ 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.

Higher National Unit specification: statement of standards (cont)

Unit title: Wall and Floor Tiling: High Density Materials and Substrates

Assessment Guidelines

Candidates will be required to work individually to prepare the surface in accordance with the specification and tolerances required for this Outcome. Candidates will be required to work individually fixing and grouting the tilework using high density materials. 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 following the requirements of Outcomes 2, 3 and 4. Candidates should be provided with 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: High Density Materials and Substrates

Outcome 4

Cut, core and shape high density materials

Knowledge and/or Skills

- ◆ Specification interpretation
- ◆ Producing a workshop drawing
- ◆ Measuring and marking
- ◆ Cutting high density materials using specialised power tools
- ◆ Coring high density materials using specialised power tools
- ◆ 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 measure and mark high density materials. Candidates must cut a minimum of eight straight cuts, three core cuts and two equilateral extrusions in high density tiles. Candidates must also demonstrate that they can cut and core high density materials using power tools and must work in a safe and organised manner:

Summary of standards (working towards industrial tolerances)

- ◆ interpretate specification correctly
- ◆ workshop drawing — produced correctly
- ◆ high density material — measured correctly
- ◆ high density material — marked correctly
- ◆ high density material — cut correctly
- ◆ high density material — cored correctly
- ◆ 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 will be required to work individually to measure and mark the materials in accordance with the specification and tolerances required for this Outcome. Candidates will be required to work individually cutting, shaping and coring the high density materials. 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 following the requirements of Outcomes 2, 3 and 4. Candidates should be provided with specifications for the practical task and assessment should be carried out in a suitable workshop environment.

Administrative Information

Unit code: F8MR 34

Unit title: Wall and Floor Tiling: High Density Materials and Substrates

Superclass category: TG

Original date of publication: August 2010

Version: 01

History of changes:

Version	Description of change	Date

Source: SQA

© Scottish Qualifications Authority 2010

This publication may be reproduced in whole or in part for educational purposes provided that no profit is derived from reproduction and that, if reproduced in part, the source is acknowledged.

SQA acknowledges the valuable contribution that Scotland's colleges have made to the development of Higher National qualifications.

Additional copies of this Unit specification can be purchased from the Scottish Qualifications Authority. Please contact the Customer Contact Centre for further details, telephone 0845 279 1000.

Higher National Unit specification: support notes

Unit title: Wall and Floor Tiling: High Density Materials and Substrates

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 high density materials and how to measure, mark, cut and core them.

In Outcome 1, the candidate could be guided to understanding the importance of identifying different types of high density materials and substrates and on the different modification techniques required. Candidates should also be encouraged to calculate the different weights of various types of high density materials used in wall and floor tiling. The processes and materials used in the manufacturing of high density materials should be explained to the candidate with the candidate being encouraged to research this using manufacturer's literature and the internet.

In Outcome 2 candidates' previous knowledge of preparing surfaces for tiling should be expanded upon. The importance of correct identification and correct use of primers and bonders should be emphasised with clear guidance given on the importance of following manufacturers' instructions. The importance of enhanced adhesion should be explained to candidates.

In Outcome 3 it should be stressed to candidates the importance of accurate preparation and correct selection of adhesives prior to the fixing of high density materials. Candidates should also be guided on correct grouting procedures and health and safety throughout all activities.

In Outcome 4 candidates should be guided on accurate measurement and marking of materials. The safe use of power tools whilst cutting and coring high density materials should be emphasised.

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 conventional in the future.

Higher National Unit specification: support notes (cont)

Unit title: Wall and Floor Tiling: High Density Materials and Substrates

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 could be delivered through a series of lectures, formative theory and practical examples which will involve the candidate carrying out the activities outlined in the Outcomes. Candidates should be encouraged to access and use visual evidence from the internet, textbooks and notes which illustrate the manufacture, preparation and use of high density materials in wall and floor tiling context.

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 individually to generate practical evidence in preparation of high density materials and substrates and the application and use of bonders and primers. Guidance and instruction in the use of bonders and primers should be given by the lecturer with an emphasis on the importance of referring to manufacturer's instructions.

In Outcome 3 candidates will be required to work individually, to prepare, and mix adhesives and grouts and the fixing of high density materials. Guidance and instruction in preparation and fixing methods and in the importance of health and safety should be given by the lecturer.

In Outcome 4 candidates will be required to work individually in the measuring, marking and cutting and coring of a variety of high density materials. Guidance and instruction in the safe use of power tools should be given by the lecturer.

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: High Density Materials and Substrates

Opportunities for developing Core Skills

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 high density tiles and the materials and process involved. 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 *Working with Others* at SCQF level 4, particularly during practical assessments where candidates are working alongside each other in a workshop environment in Outcomes 2, 3 and 4. Candidates can agree responsibilities and provide support and information to each other during the practical activities.

There are opportunities to develop the Core Skill of *Problem Solving* at SCQF level 4. 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 4 throughout this Unit by the candidates describing the processes and materials used in the manufacture of high density tiles. Candidates will interpret specifications and workshop drawings and will have to describe the modifications required of high density surfaces to enhance surface adhesion. 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.

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 in calculating the weights of high density materials in Outcome 1.

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)

Higher National Unit specification: support notes (cont)

Unit title: Wall and Floor Tiling: High Density Materials and Substrates

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: Wall and Floor Tiling: High Density Materials and Substrates

This Unit has been designed to further your career in the construction industry by developing your competencies and improving your knowledge of High Density Materials and Substrates used 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 preparing of high density substrates and the fixing of high density materials. This Unit will also help develop your skills in the cutting, shaping and coring of high density materials in a wall and floor tiling context.

You will be assessed on your knowledge and understanding of the preparation methods required for these materials and substrates. You will also be assessed on calculating the weights of high density materials and on the raw materials and processes used in the manufacture of high density tiles.

You will also be assessed practically in a workshop on preparing high density surfaces by using primers and bonders and by applying a mechanical key. You will also be assessed in the fixing of high density tiles and on the cutting, shaping and coring of these materials. You will be given all specifications required prior to undertaking the practical assessments.

This Unit requires you to be assessed on your ability to prepare, apply, cut, core and shape high density materials. 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 4 and *Working with Others* at SCQF level 4, *Communication* at SCQF level 4, *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.