



## National Unit specification: general information

**Unit title:** Roofing: Plain Tiling to a Gabled Roof (SCQF level 6)

**Unit code:** H10K 12

**Superclass:** TG

**Publication date:** March 2012

**Source:** Scottish Qualifications Authority

**Version:** 01

## Summary

This Unit is suitable for candidates working towards a Modern Apprenticeship in Roofing Occupations and is designed to provide candidates with competence in the use of tools and equipment to prepare, set out and cover boarded gabled roofs using plain tiling materials. It is also designed to enable candidates to develop their knowledge and understanding of roofing terminology, techniques and sequence of operations.

## Outcomes

- 1 Demonstrate knowledge and understanding of roofing terminology, components, techniques and sequence of operations for the application of plain tiles to gabled roofs incorporating an abutment and a Solar collector.
- 2 Prepare a pitch gabled roof surface prior to plain tiling.
- 3 Set out and fix plain tiles to a gabled roof surface.

## Recommended entry

While entry is at the discretion of the centre, candidates undertaking the Professional Development Award in Roofing Occupations 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 (6 SCQF 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)**

**Unit title:** Roofing: Plain Tiling to a Gabled Roof (SCQF level 6)

### **Core Skills**

Achievement of this Unit gives automatic certification of the following:

Complete Core Skill            None

Core Skill component        Critical Thinking @ SCQF level 4

There are also opportunities to develop aspects of Core Skills which are highlighted in the Support Notes of this Unit Specification.

## **National Unit specification: statement of standards**

**Unit title:** Roofing: Plain Tiling to a Gabled Roof (SCQF level 6)

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 roofing terminology, components, techniques and sequence of operations for the application of plain tiles to gabled roofs incorporating an abutment and a Solar collector.

#### **Performance Criteria**

- (a) Define roofing terminology related to plain tiling a gable to abutment roof surface.
- (b) Describe the sequence of operations required for covering a pitched roof surface gable to abutment incorporating a Solar collector.
- (c) State basic health and safety requirements related to roofing.

### **Outcome 2**

Prepare a pitch gabled roof surface prior to plain tiling.

#### **Performance Criteria**

- (a) Prepare roof surface correctly prior to plain tiling.
- (b) Set out roof surface correctly.
- (c) Position and fix fibre cement undercloak and dry verge/ridge system.
- (d) Install abutment flashings accurately.
- (e) Install solar collector correctly.
- (f) Comply with current health and safety and building regulations throughout activity.

### **Outcome 3**

Set out and fix plain tiles to a gabled roof surface.

#### **Performance Criteria**

- (a) Fix plain tiles to a gable roof surface correctly.
- (b) Fix plain tiles to a stepped eaves detail correctly.
- (c) Fix tiles at abutment correctly.
- (d) Fix Solar collector correctly.
- (e) Comply with current health and safety and building regulations throughout activity.

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

**Unit title:** Roofing: Plain Tiling to a Gabled Roof (SCQF level 6)

### Evidence Requirements for this Unit

Evidence is required to demonstrate that the candidates have achieved this Unit to the standard specified in all the Outcomes and Performance Criteria. All working practices must be in line with relevant and current Health and Safety legislation and regulations.

Written and/or oral evidence is required for Outcome 1 which demonstrates that the candidate can define and describe roofing terminology, components, techniques and sequence of operations associated with plain tiling to a gable to abutment roof surface and fixing of a Solar collector. The evidence for this Outcome will take the form of a question paper and be obtained under closed-book supervised conditions.

Performance and product evidence for Outcomes 2 and 3, supplemented with an assessor observation checklist, should be used to confirm the candidate has individually met the standards specified in the Performance Criteria and summary of standards. Candidates will be observed to show that they can achieve the following through the delivery of the Unit:

- ◆ Measure roof out accurately
- ◆ Setting out and fix underlay felt
- ◆ Setting out and fix timber counter batten
- ◆ Setting out and fix a fibre cement undercloak and dry verge.
- ◆ Install weatherproof flashing to abutment.
- ◆ Bedding and weather pointing tiles to undercloak at verge
- ◆ Setting out and fix a plain tile roof covering including a Solar collector.
- ◆ Bedding, pointing and the mechanical fixing of ridge tiles
- ◆ Install dry ridge system
- ◆ Minimise wastage of materials to improve sustainability and efficiency
- ◆ Behave in a safe manner at all times

Competence will be based on the candidate completing the practical activities in accordance with the stated tolerances. Candidates must achieve the following standards:

### Summary of Standards for plain tiles to wet verge (working towards industrial tolerances)

#### Setting out and preparation

|                     |  |
|---------------------|--|
| Check boarding      | Removes protruding nails                     |
| Removes roof debris | Brushes roof clean                           |
| Felt roof           | Fixed without tears and large wrinkles       |
| Felt roof eaves     | Overhang at eave 50 mm $\pm$ 5 mm            |
| Horizontal lap      | 75 mm $\pm$ 5 mm                             |
| Vertical lap        | 150 mm $\pm$ 5 mm                            |
| Fix felt            | Nailed in correct position without punctures |

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

**Unit title:** Roofing: Plain Tiling to a Gabled Roof (SCQF level 6)

### Battening

|                             |   |
|-----------------------------|---|
| Fix counter-battens         | Fixed straight and true without splits  |
| Batten eave course overhang | 50 mm $\pm$ 5 mm  |
| Batten at verge             | 25 mm $\pm$ 5 mm  |
| Batten at abutment          | Tight to -5mm   |
| Calculate batten gauge      | Correctly states gauge  |
| Calculate batten courses    | Correct number of courses maintained Batten at struck lines Straight $\pm$ 3 mm |
| Fix battens                 | Nailed without splits   |
| Fix Solar collector         | To manufacturer's instructions  |

### Tiling Plain, Wet /dry verge /dry ridge /abutment.

|                              |                                       |
|------------------------------|---------------------------------------|
| Perpendicular lines          | Mark and strike straight $\pm$ 3 mm   |
| Verge overhang               | 50 mm $\pm$ 5 mm                      |
| Tile bond                    | Half bonded $\pm$ 5 mm                |
| Cut tiles to verge detail    | Straight without ragged edges         |
| Cut tiles at abutment detail | Straight without ragged edges         |
| Cut tiles at verge           | No cut less than 1/2 tile width       |
| Fix dry verge system         | To manufacturer's instructions        |
| Cut tiles at abutment        | No cut less than 1/2 tile width       |
| Nail tiles                   | Fixed to lecturer's instructions      |
| Fix tiles at verge           | Correctly nailed and bedded in mortar |
| Fix Solar collector          | To manufacturer's instructions        |
| Cleanliness of roof          | Free from mortar stains               |

### Health and safety

|                   |                       |
|-------------------|-----------------------|
| Working area      | Clean at all times    |
| Health and safety | Complies at all times |

**In addition to these standards the following Summary of Standards for plain tiles to stepped eave, wet verge and wet ridge (working towards industrial tolerances) also apply:**

### Battening

|                              |                          |
|------------------------------|--------------------------|
| Batten stepped eave overhang | 50 mm $\pm$ 5 mm         |
| Fix ridge batten             | Correct to specification |

### Tiling Plain, stepped eave, wet verge, abutment and wet/dry ridge

|                                     |  |
|-------------------------------------|--|
| Verge, abutment and stepped details | Formed straight without ragged edges       |
| Fix tiles                           | Nail to lecturer's instructions            |
| Ridge tile                          | Mechanical fix end tiles                   |
| Ridge tile                          | Edge bedding 20 mm $\pm$ 5 mm              |
| Ridge tile                          | Joints 10 mm $\pm$ 5 mm                    |
| Ridge tile                          | End finish with dentil slips neatly formed |
| Pointing                            | Trowel finish with weather pointing        |
| Dry ridge                           | Fixed to manufacturer's instructions       |

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

**Unit title:** Roofing: Plain Tiling to a Gabled Roof (SCQF level 6)

### Health and safety

|                      |   |
|----------------------|---|
| Risk assessment      | Safety boots worn at all times                        |
| High visibility vest | Worn at all times                                     |
| Hard hat             | Worn at all times                                     |
| Method statement     | Working area clean at all times                       |
| Method statement     | Materials stacked correctly at all times              |
| Method statement     | Tools cleaned and stored safely at end of working day |

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

## **National Unit specification: support notes**

**Unit title:** Roofing: Plain Tiling to a Gabled Roof (SCQF level 6)

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 Roofing Occupations at SCQF level 6.

This Unit would be offered to candidates from the construction and related services industries. 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. It should be delivered as part of a structured programme of training and orientated to the context of the candidates work and area of responsibility.

The successful completion of this Unit will help provide candidates with the required underpinning knowledge and skills relating to the terminology, preparation and application of plain tiles to gable to abutment roof with stepped eave, Solar collector, wet/dry verge and wet/dry ridge details.

The context of this Unit allows for a holistic integrated approach into other Units within the PDA in Roofing Occupations. Therefore there are opportunities to integrate this Unit with aspects of *Roofing: Plain Tiling of Hips, Valleys and Curved Eaves* (SCQF level 6).

Health and Safety and Sustainability are integral and key to the Construction Industry and so 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 legislation affecting the conservation of the environment and its relevance to this trade and to the construction industry in general. Attention should also be drawn to the dangers of not implementing this legislation.

## National Unit specification: support notes (cont)

**Unit title:** Roofing: Plain Tiling to a Gabled Roof (SCQF level 6)

### Guidance on learning and teaching approaches for this Unit

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 candidate should be given the opportunity to further develop their skills through visual aids, electronic presentations, DVDs, e-learning, reference books, classroom exercises and group discussions.

Candidates should be encouraged to consider basic risk assessment prior to any practical activities taking place.

#### Outcome 1

This Outcome should introduce the candidate into the terminology, components, techniques and sequence of operations of plain tiling gable to abutment roof surfaces incorporating a Solar collector. Terminology and components could include those indicated below:

- ◆ Terminology:
  - underlay
  - breather membrane
  - bonding
  - tile camber
  - stepped eave
  - abutment
  - bedding
  - pointing
  - mechanical
  - fixing
  - wet verge and wet ridge and Solar collectors
  
- ◆ Components:
  - plain tiles
  - eave tiles
  - tile-and-a-half tile
  - abutment flashings
  - undercloak
  - Solar collector fixings
  - ridge tiles
  - dry verge and ridge systems.

It would be beneficial for candidates to sketch various elements related to the plain tiling gabled roof surfaces. This will help reinforce candidates' underpinning knowledge for this Unit.



## National Unit specification: support notes (cont)

**Unit title:** Roofing: Plain Tiling to a Gabled Roof (SCQF level 6)

### Outcomes 2 and 3

It is recommended that candidates work in pairs for these Outcomes. Candidates should be encouraged in self and peer evaluation of work and achievement of standards.

The candidate should be provided with a three-dimensional working drawing and specification outlining the content and Performance Criteria for the practical activities attempted.

Candidates should be made fully aware of current regulations and legislation in relation the roofing activities contained within this Unit.

It would be beneficial for lecturers to reinforce the appropriate disposal and re-use of roofing materials for sustainability considerations.

Candidates should be encouraged to calculate areas and quantities of roofing materials. This could take place in a classroom or a workshop environment. Candidates could take the opportunity to use spread sheets to compile and record information related to material estimating.

Lecturers should provide candidates with constructive feedback in relation to performance and the standard achieved. Areas for improvement should be clearly identified.

Opportunities should be taken throughout delivery of this Unit to meet the requirements of the generic Units of the Training and Assessment Programme including:

- ◆ *Conform to Productive Working Practices*
- ◆ *Conform to General Workplace Health, Safety and Welfare*
- ◆ *Move, Handle or Store Resources*
- ◆ *Confirm Work Activities and Resources for the Work*
- ◆ *Develop and Maintain Good Working Relationships*
- ◆ *Confirm the Occupational Method of Work*

### Guidance on approaches to assessment for this Unit

The Roofing Occupations Training and Assessment Programme (TAP) provides detailed assessment material for this Unit. It is 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 through prior verification. It is expected that candidates will be given as much practice as possible, prior to being set assessment tasks.

For Outcome 1 a suitable method of assessing the candidate's knowledge and understanding of roofing terminology, components and sequence of operations for plain tiling gable to abutment roof surfaces including a Solar collector, would be through a question paper incorporating multiple choice questions.

For Outcomes 2 and 3 the candidate's ability to set out plain tiling to gabled roof surfaces will be assessed through practical activities. An assessor observation checklist can be used to ensure and record that the candidates have met the given standards and tolerances during the practical activity.

## National Unit specification: support notes (cont)

**Unit title:** Roofing: Plain Tiling to a Gabled Roof (SCQF level 6)

### 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)*.

### Opportunities for developing Core Skills

There are opportunities to develop aspects of the Core Skill of *Problem Solving*. 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.

*Numeracy* skills at SCQF level 4 could be developed through roofing calculations for area and material estimating.

Opportunities also arise for candidates to develop the Core Skill of *Information and Communication Technology (ICT)* at SCQF level 3 through researching roofing terminology and techniques on the internet, spread sheets for materials information, e-learning and e-assessment.

There are opportunities for candidates to develop the Core Skill of *Working with Others* at SCQF level 4 through working in pairs for Outcomes 2 and 3. Candidates can agree responsibilities and provide support and information to each other during the practical group activities.

Candidates will have the opportunity to develop *Communication* skills at SCQF level 4 throughout practical tasks, as they should be expected to communicate 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 candidates achieve the Unit, their Core Skills profile will also be updated to show they have achieved Critical Thinking at SCQF level 4.

### 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)

## History of changes to Unit

| Version | Description of change | Date |
|---------|-----------------------|------|
|         |                       |      |
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