



National Unit specification: general information

Unit title: Roofing: Plain Tiling of Hips, Valleys and Curved Eaves
(SCQF level 6)

Unit code: H10J 12

Superclass: TG

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Summary

This Unit is suitable for candidates working towards a Modern Apprenticeship in Roofing Occupations and will develop the candidates craft skills in plain tiling of hips, valleys and curved eaves. This Unit is designed to provide candidates with competence in the use of tools and equipment to using plain tiling materials. It is also designed to enable candidates to develop their knowledge and understanding in roofing terminology, techniques and sequencing of operations.

Outcomes

- 1 Demonstrate knowledge and understanding of roofing terminology, components, techniques and sequences of operations for the plain tiling of hips, valleys, curved eaves.
- 2 Prepare a pitch roof surface prior to plain tiling.
- 3 Cut and fix plain tiles and components to a hip, valley and curved eaves.
- 4 Set out and fix ridge tiles to a three way mitre.

Recommended entry

While entry to the Unit 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.

General information (cont)

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Credit points and level

2 National Unit credits at SCQF level 6 (12 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.*

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 of Hips, Valleys and Curved Eaves
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Acceptable performance in this Unit will be the satisfactory achievement of the standards set out in this part of the Unit specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

Outcome 1

Demonstrate knowledge and understanding of roofing terminology, components, techniques and sequences of operations for the plain tiling of hips, valleys, curved eaves.

Performance Criteria

- (a) Define roofing terminology related to the plain tiling of hips, valleys and curved eaves.
- (b) Describe the sequence of operations required for plain tiling hips, valleys and curved eaves.
- (c) Define the basic health and safety requirements related to roofing.

Outcome 2

Prepare a pitch roof surface prior to plain tiling.

Performance Criteria

- (a) Form curved eaves correctly.
- (b) Prepare roof surface accurately prior to plain tiling.
- (c) Cut and dress lead to form an open valley detail accurately.
- (d) Set out roof surface correctly.
- (e) Comply with current health and safety and building regulations throughout activity.

Outcome 3

Cut and fix plain tiles and components to a hip, valley and curved eaves.

Performance Criteria

- (a) Cut tiles and components to hip, valley and curved eaves accurately.
- (b) Fix tiles and components to hip, valley and curved eaves correctly.
- (c) Comply with current health and safety and building regulations throughout activity.

Outcome 4

Set out and fix ridge /hip to form wet and dry details.

Performance Criteria

- (a) Cut, bed and point ridge tiles at the hip and ridge correctly.
- (b) Form a three way mitre at ridge junction.
- (c) Form hip and ridge using dry fix system accurately.
- (d) Comply with current health and safety and building regulations throughout activity.

National Unit specification: statement of standards (cont)

Unit title: Roofing: Plain Tiling of Hips, Valleys and Curved Eaves (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 of hips, valleys, curved eaves. 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, 3 and 4, 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
- ◆ Set out and fix underlay felt
- ◆ Set out and fix timber counter batten
- ◆ Set out and fix timber cross batten
- ◆ Set out and fix a plain tile roof covering
- ◆ Mark out and cut tiles
- ◆ Set out and fix bonnet hip tiles and purpose made valley tiles
- ◆ Set out, cut, bed, point and mechanically fix hip and ridge tiles
- ◆ Form hip and ridge using dry fix system
- ◆ Minimise wastage of materials to improve sustainability and efficiency
- ◆ Behave in a safe manner at all times

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

Summary of Standards for plain tile purpose-made hip and valley (working towards industrial tolerances)

Setting out and preparation

Felt hip and valley	Fixed without tears and large wrinkles
Overlap at hip	Minimum 150 mm
Covering strip at hip	Minimum 600 mm
Covering strip	Centred over hip ± 10 mm
Overlap at valley	300 mm ± 5 mm
Overhang of felt at eave	50 mm ± 5 mm
Overlap of felt	75 mm + 5 mm
Vertical lap of felt	150 mm + 5 mm
Fix felt	Nailed in correct position without punctures

National Unit specification: statement of standards (cont)

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Battening

Fix counter-battens	Fixed straight and true
Fix counter-battens	Fixed without splits
Fix counter-battens at hip and valley	Parallel ± 5 mm
Batten eave course overhang	50 mm ± 5 mm
Batten joints hip and valley	Cut straight and parallel finished tight ± 3 mm
Batten at struck lines	Straight ± 3 mm
Fix battens	Nailed to every rafter and without splits
Nail tiles	Fixed to lecturer's instructions

Tiling Plain, Hips and Valleys

Position valley tiles	Straight ± 8 mm (valley centre)
Cut tiles at valley	No cut less than 1/2 tile width
Cut tiles at valley	Straight without ragged edges
Position bonnet tiles	Tails in line with plain tiles — 5 mm
Cut tiles at hip	No cut less than 1/2 tile width
Cut tiles at hip	Straight without ragged edges
Fix bonnets	Correctly nailed/bedded in mortar
Fix bonnets	Straight up hip ± 6 mm
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 tile to a three way mitred hip and open valley (working towards industrial tolerances) also apply:

Setting out and preparation

Felt at valley	Overhang 50 mm, ± 5 mm
Felt at curve	Neatly cut to form curve overhang 50 mm ± 5 mm
Cover strip at hip	600 mm minimum — centred ± 10 mm on hip
Fixing felt	Nailed correctly to rafters correct nail spacing maintained

Battening

Set ridge course battens	Correct position from ridge — 5 mm
Calculate gauge	Correctly states number of courses

National Unit specification: statement of standards (cont)

Unit title: Roofing: Plain Tiling of Hips, Valleys and Curved Eaves (SCQF level 6)

Tiling, plain eaves, curved eaves, hips and valley

Tiles at eave and valley	Overhang 50 mm \pm 5 mm
Tiles at curve	Overhang 50 mm \pm 5 mm
Tiles at curve	Neat curve free from ragged edges
Tiles at hip	Cut straight to hip — 6 mm
Bonding tiles	Half bonded \pm 5 mm
Bonding under-eave tiles	Half bonded \pm 5 mm
Nailing tiles	Fixed to lecturer's instructions
Nailing tiles	Valley, lead free from nail punctures

Ridging

Fix hip iron	Securely fixed to hip
Cut hip tile	Cut level with eave course
Bed hip tiles	Junction between ridges bedded solid 100 mm
Form 3-way mitre	Cuts straight and parallel
Bed hip and ridge tiles	Joints 10–15 mm
Bed ridge tiles	Level 5–20 mm
Point ridge tiles	Left off smooth with trowel
Fix dry hip and ridge	To manufacturer's instructions

Valley

Form valley in lead	Lead free from heavy dress marks
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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 of Hips, Valleys and Curved Eaves (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 80 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 provide candidates with the required underpinning knowledge and skills relating terminology, components, component function, legislation and material estimation in relation to marking out, positioning and fixing of plain tiles to hips, valleys and curved eave 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 to a Gabled Roof* (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.

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.

National Unit specification: support notes (cont)

Unit title: Roofing: Plain Tiling of Hips, Valleys and Curved Eaves (SCQF level 6)

Outcome 1

This Outcome should introduce the candidate into the terminology, components techniques and sequence of operations of plain tiling to hips, valleys, curved eaves. Terminology and components could include those indicated below:

Terminology: Underlay, breather membrane, bonding, tile camber, purpose-made valley, open valleys, bonnet hip, wet/dry hip, wet/dry ridge, insulation and roof ventilation.

Components: Purpose-made valley tiles, bonnet hip tiles, eave ventilation, ventilation tiles, half round ridge tile, segmental ridge tile, dry fix system, fixings and lead.

Outcomes 2, 3 and 4

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 3 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*

National Unit specification: support notes (cont)

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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 and sequence of operations for plain tiling hip and valley surfaces would be through a question paper incorporating multiple choice questions.

For Outcomes 2, 3 and 4 the candidate's ability to set out and plain tile hips, valleys, curved eaves 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.

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* 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, 3 and 4. Candidates can agree responsibilities and provide support and information to each other during the practical group activities.

National Unit specification: support notes (cont)

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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

History of changes to Unit

Version	Description of change	Date

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