



National Unit Specification: general information

UNIT Roofing: Estimating (SCQF level 6)

CODE F7D6 12

SUMMARY

This Unit is suitable for candidates working towards a Modern Apprenticeship in Roofing Occupations and is designed to develop the candidate's skills in estimating materials, components and costs associated with roofing works. This Unit is also designed to provide candidates with basic knowledge and competence in calculations and techniques to produce a written estimate.

OUTCOMES

- 1 Demonstrate knowledge and understanding of estimates, specifications and common roofing materials and components.
- 2 Demonstrate knowledge and understanding of taking off roof dimensions for estimating purposes.
- 3 Produce material and component estimates from given drawings, specifications and costing data.

RECOMMENDED ENTRY

While entry is at the discretion of the centre, candidates undertaking the Professional Development Award in Roof Slating, Tiling and Cement Work at SCQF level 6 must meet the requirements of the Modern Apprentices which include being employed in the relevant craft industry.

CREDIT VALUE

1 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*

Administrative Information

Superclass: TF

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National Unit Specification: general information (cont)

UNIT Roofing: Estimating (SCQF level 6)

CORE SKILLS

While there is no automatic certification of Core Skills or Core Skills components in this Unit, opportunities for the developing aspects of the following Core Skills are highlighted in the Support Notes of this Unit:

- ◆ *Problem Solving* at SCQF level 4
- ◆ *Numeracy* at SCQF level 4
- ◆ *Information and Communication Technology* at SCQF level 3
- ◆ *Communication* at SCQF level 4

National Unit Specification: statement of standards

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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 estimates, specifications and common roofing materials and components.

Performance Criteria

- (a) Correctly describe the purpose of an estimate.
- (b) Correctly define a roofing specification using appropriate terminology.
- (c) Correctly identify common roofing materials and components.

OUTCOME 2

Demonstrate knowledge and understanding of taking off roof dimensions for estimating purposes.

Performance Criteria

- (a) Correctly state the common scales used in construction and roofing drawing.
- (b) Correctly identify common formulae used for estimating calculations.
- (c) Correctly take off appropriate dimensions from given drawings for use in calculating roofing materials and components.

OUTCOME 3

Produce material and component estimates from given drawings, specifications and costing data.

Performance Criteria

- (a) Correctly determine sloping lengths by calculation.
- (b) Correctly calculate roof areas by using numerical formula.
- (c) Correctly determine the quantities of materials and components.
- (d) Produce an accurate estimate for materials and components from given costing data, making allowance for waste, discounts and VAT.

National Unit Specification: statement of standards (cont)

UNIT Roofing: Estimating (SCQF level 6)

EVIDENCE REQUIREMENTS FOR THIS UNIT

Evidence is required to demonstrate candidates have achieved all Outcomes and Performance Criteria.

Written and/or oral evidence is required which demonstrates that the candidate has achieved all Outcomes to the standards specified in the Performance Criteria. The evidence for this Unit will take the form of numeracy and estimating related tasks and should be obtained under controlled, open book conditions.

Before producing a written estimate, Candidates must evidence:

- ◆ accurate sizing and area calculations
- ◆ correct calculation of required materials and components
- ◆ correct application of wastage
- ◆ correct use of discounts
- ◆ correct application of VAT

These evidence requirements will be met by the completion of the Training and Assessment Programme (TAP) Roof Slating, Tiling and Cement Work.

National Unit Specification: support notes

UNIT Roofing: Estimating (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 Roof Slating, Tiling and Cement work at SCQF level 6.

This Unit will be offered to candidates from the construction and related services industries. The skills and knowledge and understanding are transferable within the different working environments but the Unit is primarily aimed at candidates whose normal place of work would be site, workshop or similar environment. It should be part of a structured programme of training and orientated to the context of candidates work area of responsibility.

The successful completion of this Unit should provide candidates with the required underpinning knowledge and skills relating to the terminology, preparation and application of taking off quantities of materials and components from given drawings and specifications for use in estimating.

The context of this Unit allows for a holistic approach to all other Unit within the PDA in Roof Slating, Tiling and Cement Work. Estimating is an integral skill for a roofer and there are opportunities to integrate this Unit with all practical SCQF level 6 Units in the PDA.

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 classroom 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.

National Unit Specification: support notes (cont)

UNIT Roofing: Estimating (SCQF level 6)

Outcomes 1, 2 and 3

Candidates should be provided with appropriate drawings, specifications and costing data to allow them to complete these Outcomes.

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

Candidates should be made fully aware of current practices and legislation in relation to the work activities contained within this Unit.

Candidates could take the opportunity to use spreadsheets 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.

If possible, 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 Efficient Working Practices*
- ◆ *Conform to General Workplace Safety*
- ◆ *Move and Handle Resources*
- ◆ *Confirm Work Activities and Resources for the Work*
- ◆ *Develop and Maintain Good Working Relationships*
- ◆ *Confirm the Occupational Method of Work*

OPPORTUNITIES FOR CORE SKILL DEVELOPMENT

There are opportunities to develop aspects of the Core Skill of *Problem Solving* at SCQF level 4. Candidates will need to take account of a range of factors in order to efficiently take off roofing data from given information and provide accurate estimates. 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 calculations for area and volume material estimating.

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

Candidates will have the opportunity to develop *Communication* skills at SCQF level 4 as they should be expected to communicate with others using the correct terminology, tone and style suited to the workplace.

National Unit Specification: support notes (cont)

UNIT Roofing: Estimating (SCQF level 6)

GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

All sections of the Roof Slating, Tiling and Cement Work Training and Assessment Programme (TAP) provide tasks and tests that could be used to provide 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.

A suitable method of assessing the candidate's ability to estimate would be through a costing assignment. This could either be carried out from given information or integrated with a practical roofing Unit to give the candidate a more realistic experience.

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 e-checklists. 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)*.

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