

-SQA-SCOTTISH QUALIFICATIONS AUTHORITY

HIGHER NATIONAL UNIT SPECIFICATION

GENERAL INFORMATION

-Unit number-	D2XC 04
-Unit title-	ROOF SLATING, TILING AND CEMENT WORK: ADVANCED SLATING
-Superclass category-	TG
-Date of publication- (month and year)	1 AUGUST 2000
-Originating centre for unit-	SQA

-DESCRIPTION-

GENERAL COMPETENCE FOR UNIT: On completion of this unit the candidate will be competent in slating techniques, calculating quantities, and adopting safe working practices for carrying out specialised feature work to pitched roof surfaces and turrets including the formation of swept valleys.

OUTCOMES:

1. slate a turret roof incorporating hip details;
2. slate a conical turret roof;
3. slate a roof incorporating a swept valley;
4. outline the theoretical aspects associated with advanced slating techniques;
5. produce scale drawings of complex roof shapes;
6. determine quantities of materials.

CREDIT VALUE: 2 HN Credits.

ACCESS STATEMENT: Access to this unit is at the discretion of the centre. However, it would be helpful if the candidate has successfully complete a SVQ level 2 plus the mandatory workplace assessed units in SVQ level 3 Roof Slating, Tiling and Cement Work.

The unit forms part of the Advanced Certificate in Roof Slating, Tiling and Cement Work and is aimed at candidates following a career in roof slating, tiling, and cement work and receiving complementary industrial experience.

Additional copies of this unit can be obtained from:

The Committee and Administration Unit, SQA, Hanover House, 24 Douglas Street, Glasgow G2 7NQ, (Tel: 0141-242 2168).

At the time of publication the cost is £1.50 per unit (minimum order £5.00).

HIGHER NATIONAL UNIT SPECIFICATION**STATEMENT OF STANDARDS**

Unit number: D2XC 04

Unit title: ROOF SLATING, TILING AND CEMENT WORK: ADVANCED
SLATING TECHNIQUES

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

OUTCOME**1. SLATE A TURRENT ROOF INCORPORATING HIP DETAILS****PERFORMANCE CRITERIA**

- (a) The roof surface is satisfactorily prepared prior to felting.
- (b) The setting out of the underlay is in accordance with the specification.
- (c) The roof surface is squared-off and lines struck in accordance with the specification.
- (d) Slates and soakers are measured and cut accurately.
- (e) Slates are positioned and fixed in accordance with the specification.
- (f) The tail line around the turret is maintained.
- (g) A mitre (piend) is correctly formed with soakers.
- (h) Work methods and activities are correct in terms of:
 - (i) sequencing work;
 - (ii) minimising wastage of materials;
 - (iii) satisfying current safety regulations.

RANGE STATEMENT

Preparation processes: de-nailing; surface repairs; brushing; felting; making templates.

Materials and components: slates; felt; nails; soakers.

EVIDENCE REQUIREMENTS

Evidence of actual performance is needed to show the candidate can slate a turret roof incorporating hip details.

Oral or written evidence is needed to show the candidate can state responsibilities regarding safety legislation.

Assessment will be in the form of closed book.

All working practices must be in line with current and relevant health and safety legislation and regulations.

All performance criteria must be met and all items in the range statement covered.

OUTCOME

2. SLATE A CONICAL TURRENT ROOF

PERFORMANCE CRITERIA

- (a) The roof surface is prepared satisfactorily prior to felting.
- (b) The setting out of the underlay is in accordance with the specification.
- (c) The roof surface is squared-off and lines marked in accordance with the specification.
- (d) Slates are measured and cut accurately to form templates.
- (e) Slates are accurately cut from templates.
- (f) Slates are positioned and fixed in accordance with the specification.
- (g) The tail line around the conical turret is maintained.
- (h) Work methods and activities are correct in terms of:
 - (i) sequencing of work;
 - (ii) minimising wastage of materials;
 - (iii) satisfying current safety regulations.

RANGE STATEMENT

Preparation processes: de-nailing; surface repairs; brushing; felting; templates.

Materials and components: slates; felt; nails.

EVIDENCE REQUIREMENTS

Evidence of actual performance is needed to show the candidate can slate a conical turret roof.

Oral or written evidence is needed to show the candidate can state responsibilities regarding safety legislation.

Assessment will be in the form of closed book.

All working practices must be in line with current and relevant health and safety legislation and regulations.

All performance criteria must be met and all items in the range statement covered.

OUTCOME**3. SLATE A ROOF INCORPORATING A SWEEP VALLEY****PERFORMANCE CRITERIA**

- (a) The roof surface is satisfactorily prepared prior to felting.
- (b) The setting out of the underlay is in accordance with the specification.
- (c) The roof surface is squared-off in accordance with the specification.
- (d) A valley board is positioned and fixed correctly.
- (e) Slates are positioned and fixed to form a valley detail in accordance with the specification.
- (f) The tail line around the valley detail is maintained.
- (g) Work methods and activities are correct in terms of:
 - (i) sequencing work;
 - (ii) minimising wastage of materials;
 - (iii) satisfying current safety regulations.

RANGE STATEMENT

Preparation processes: de-nailing; surface repairs; brushing; felting; templates.

Materials and components: slates; felt; nails; valley board.

EVIDENCE REQUIREMENTS

Evidence of actual performance is needed to show the candidate can slate a roof incorporating a swept valley.

Oral or written evidence is needed to show the candidate can state responsibilities regarding safety legislation.

Assessment will be in the form of closed book.

All working practices must be in line with current and relevant health and safety legislation and regulations.

All performance criteria must be met and all items in the range statement covered.

OUTCOME**4. OUTLINE THE THEORETICAL ASPECTS ASSOCIATED WITH ADVANCED SLATING TECHNIQUES****PERFORMANCE CRITERIA**

- (a) Safety aspects of working on roofs are described correctly.
- (b) Setting out roof surfaces is described correctly.

- (c) Construction procedures are described correctly.
- (d) Methods of positioning and fixing materials and components are described correctly.
- (e) Causes of deterioration on roofing materials are explained correctly.

RANGE STATEMENT

Roof surfaces: flat; curved.

EVIDENCE REQUIREMENTS

Oral or written evidence is needed to show the candidate can describe, safety aspects associated with working on roofs, how to set out roof surfaces, sequence of operations, positioning and fixing of materials and components and explain causes of deterioration on roofing materials.

Assessment will be in the form of closed book.

All working practices must be in line with current and relevant health and safety legislation and regulations.

All performance criteria must be met and all items in the range statement covered.

OUTCOME

5. PRODUCE SCALE DRAWINGS OF COMPLEX ROOF SHAPES

PERFORMANCE CRITERIA

- (a) Drawings are in first angle orthographic projection and in accordance with BS 1192.
- (b) Drawings are produced in accordance with the specification.
- (c) True shapes of surfaces are determined accurately.

RANGE STATEMENT

Surfaces: conical; hexagonal; pyramid.

EVIDENCE REQUIREMENTS

Evidence of actual performance is needed to show the candidate can produce scale drawings of complex roof surfaces including development of true shapes and constructional detailing.

Assessment will be in the form of open book.

All working practices must be in line with current and relevant health and safety legislation and regulations.

All performance criteria must be met and all items in the range statement covered.

OUTCOME**6. DETERMINE QUANTITIES OF MATERIALS****PERFORMANCE CRITERIA**

- (a) Instructions are correctly implemented.
- (b) Numerical solutions are within an acceptable range.
- (c) Intermediate steps are clearly indicated.

RANGE STATEMENT

Calculations: multiplication; division; addition; subtraction; percentages; Pythagoras's Theorem; basic trigonometry.

EVIDENCE REQUIREMENTS

Evidence of actual performance is needed to show the candidate can calculate, from given information, area of surfaces, slope lengths and quantities of materials.

Assessment will be in the form of closed book.

All working practices must be in line with current and relevant health and safety legislation and regulations.

All performance criteria must be met and all items in the range statement covered.

MERIT STATEMENT: To gain a pass in this unit, a candidate must meet the standards set out in the outcomes, performance criteria, range statements and evidence requirements.

A pass with merit may be awarded to a candidate who substantially exceeds the minimum requirements of the unit for practical competence in outcomes 1, 2 and 3 and who consistently demonstrates at least 7 from –

- (a) clarity and depth of descriptive responses;
- (b) clarity and professionalism in graphical work;
- (c) logical sequencing of work;
- (d) logical presentation of work;
- (e) optimum use of time and resources;
- (f) high organisational ability;
- (g) high motivation;
- (h) high degree of accuracy in numerical work;
- (i) high awareness of, and compliance with, safety requirements.

ASSESSMENT

In order to achieve this unit, candidates are required to present sufficient evidence that they have met all the performance criteria for each outcome within the range specified. 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. (See references at the end of support notes).

Accurate records should be made of the assessment instruments used showing how evidence is generated for each outcome and giving marking schemes and/or checklists, etc. Records of candidates' achievements should be kept. These records will be available for external verification.

SPECIAL NEEDS

Proposals to modify outcomes, range statements or agreed assessment arrangements should be discussed in the first place with the external verifier.

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HIGHER NATIONAL UNIT SPECIFICATION**SUPPORT NOTES**

Unit number: D2XC 04

Unit title: ROOF SLATING, TILING AND CEMENT WORK: ADVANCED
SLATING TECHNIQUES

SUPPORT NOTES: This part of the unit specification is offered as guidance. None of the sections of the support notes is mandatory.

NOTIONAL DESIGN LENGTH: SQA allocates a notional design length to a unit on the basis of time estimated for achievement of the stated standards by a candidate whose starting point is as described in the access statement. The notional design length for this unit is 80 hours. The use of notional design length for programme design and timetabling is advisory only.

PURPOSE This unit is designed to enable the candidate to develop the skills and knowledge required in order to be able to complete roofing projects using advanced slating techniques. It is suitable for operatives working in the Roof Slating, Tiling and Cement Work Craft.

This unit will help you acquire the skills and knowledge to prepare surfaces to receive roof finishes using natural slates which would include hexagonal and conical turrets, as well as valley details. On completion of the unit you will be able to set out and slate hexagonal and conical turrets and slate to the intersection of roof slopes using swept valley details. In addition you will be able to outline the theoretical aspects of Advanced Slating Techniques as well as be able to produce scale drawings of complex roof shapes and estimate quantities of materials.

CONTENT/CONTEXT The candidate successfully completing this unit will require underpinning knowledge and skills relating to advanced slating techniques.

The unit deals with turret and conical roof and roofs incorporating a swept valley and is complemented by other units dealing with related aspects of roof slating, tiling and cement work.

The unit would be offered to candidates from the roof slating and tiling industry. The skills are transferable within different working environments, but the unit is primarily aimed at candidates whose normal place of work would be a construction site.

The range statement is applicable to all areas of construction and other related or similarly structured industries. The competences and underpinning knowledge gained in successfully completing this unit would be transferable across a range of disciplines within the built environment.

The following information may be helpful with regard to specific outcomes:

Outcomes 1 to 4

The following safety requirements apply: safe working practices; HSW Act (Health and Safety at Work etc. Act); COSHH (Control of Substances Hazardous to Health) Regulations.

APPROACHES TO GENERATING EVIDENCE The achievement of the underpinning knowledge required for this unit would be assisted by the use of videos, slides and hands-on experience.

Demonstrations by tutors/trainers, especially in the practical aspects of the outcomes, should reinforce and augment the candidate's previous knowledge. Safety factors should be highlighted where applicable during the exercise.

ASSESSMENT PROCEDURES Candidates will be able to provide evidence of performance using the methods of assessment considered by the centre to be the most appropriate for the specific outcome. This may be by means of assessment exercises carried out under simulated working conditions.

Examples of instruments of assessment which could be used for this purpose are as follows:

Outcomes 1-3 Practical exercises;
Outcomes 4-6 Assignments.

Outcomes 1, 2 and 3

SPECIFICATION

		<u>Pass</u>	<u>Merit</u>	
Overhang of felt at eaves	50mm	+/-5mm	+/-3mm	(E)
Horizontal lap of felt	75mm	+/-5mm	+/-3mm	(E)
Vertical lap of felt	150mm	+/-5mm	+/-3mm	(E)
Overlap at hip	300mm	+/-5mm	+/-3mm	(D)
Full width of felt down valley				
Overlap of felt at valley	300mm	+/-5mm	+/-3mm	(D)
Surface is squared and lines struck		+/-4mm	+/-2mm	(E)
Form slate/soaker template		+/-3mm	+/-2mm	(E)
Undereave slate cut to size		+/-5mm	+/-3mm	(E)
Slate/soaker cut from template		+/-3mm	+/-2mm	(E)
Overhang of slate at eaves	50mm	+/-5mm	+/-3mm	(E)
Cover (Head Lap)	50mm	+/-5mm	+/-3mm	(E)
Half Bonded		+/-5mm	+/-3mm	(E)
Slates fixed to lines		+/-3mm	+/-2mm	(E)
Temporary batten to hip line-straight		+/-5mm	+/-3mm	(E)
Cuts at mitre		+/-3mm	+/-2mm	(E)
Soaker from tail of slate		+/-3mm	+/-2mm	(E)
Valley board positioned at centre of valley		+/-5mm	+/-3mm	(D)

Satisfactory performance of these outcomes could be based on the candidate gaining all Essential items (E) plus at least two Desirable items (D) from the specification.

Outcomes 4, 5 and 6

These assessments could take the form of assignments where the centre could issue previously prepared assignments which could contain a specification and drawing of a roof surface to be covered with natural slates using advanced slating techniques.

The student will reproduce the drawing to a specified scale, calculate materials and answer questions with regard to the theoretical element of advanced slating techniques.

Satisfactory performance of these outcomes could be based in agreed exemplar materials.

EXEMPLARS

PROGRESSION This unit forms part of the programme for the Advanced Certificate in Roof Slating, Tiling and Cement Work. Candidates successfully completing the Advanced Certificate will be able to progress to the HNC in Construction Practice.

Each unit is a separate part of the framework of units for the award and units are not necessarily taken in a prescribed order, although there is a logical sequence to the acquisition of the skills and knowledge concerned.

To gain the award, the candidate must successfully complete all of the following mandatory units:

Roof Slating, Tiling and Cement Work: Advanced Slating Techniques (x 2)
Roof Slating, Tiling and Cement Work: Specialised Plain Tiling Work (x 1.5)
Roof Slating, Tiling and Cement Work: Specialised Cement Work
Roof Slating, Tiling and Cement Work: Ornamental and Feature Slating Work (x 1.5)

plus any one of the following optional units:

Roof Slating, Tiling and Cement Work: Specialised Single Lap Tiling.
Roof slating, Tiling and Cement Work: Alternative Roof Coverings.

RECOGNITION

REFERENCES

1. Guide to unit writing, SQA, 1993 (Code: A018).
2. Guide to assessment, SQA, 1993 (Code: B005).
3. Guide to certification, SQA, 1996 (Code: F025).
4. Notes for unit writers, SQA, 1995 (Code: A041).

For details of other SQA publications, please contact staff in the Sales and Despatch section (Tel: 0141-242 2168) who can supply you with a copy of the publication list (Code: X037).

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