



## National Unit Specification: general information

**UNIT** Woodmachining: Sanding and Shaping Machines (SCQF level 6)

**CODE** F7GX 12

### SUMMARY

This Unit is suitable for candidates working towards a Modern Apprenticeship in Woodmachining and will develop the candidate's skills in the selection of sanding machines and abrasives and in operating machines safely to finish straight and shaped components. This Unit is also designed to enable candidates to develop their knowledge and understanding of the terminology used in relation to sanding machine parts, abrasive mediums and their uses.

### OUTCOMES

- 1 Demonstrate knowledge and understanding of sanding machines and their functions and legislation.
- 2 Outline the use of abrasive mediums for a range of work.
- 3 Set up and operate sanding machines.

### RECOMMENDED ENTRY

While entry is at the discretion of the centre, candidates undertaking the Professional Development Award in Woodmachining at SCQF level 6 must meet the requirements of the Modern Apprentices which include being employed in a relevant 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.*

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#### Administrative Information

**Superclass:** TG

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## **National Unit Specification: general information (cont)**

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### **CORE SKILLS**

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

- ◆ *Communication* at SCQF level 4
- ◆ *Working with Others* at SCQF level 4

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

### **UNIT Woodmachining: Sanding and Shaping Machines (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 sanding machines and their functions and legislation.

##### **Performance Criteria**

- (a) Correctly identify machines and component parts using appropriate terminology.
- (b) Correctly identify the scope of the machines.
- (c) Describe the setting up procedure correctly.
- (d) Define current legislation in relation to the use of sanding and shaping machines.
- (e) Correctly risk assess setting up a machine.

#### **OUTCOME 2**

Outline the use of abrasive mediums for a range of work.

##### **Performance Criteria**

- (a) Correctly outline a range of abrasive materials using appropriate terminology.
- (b) Correctly select abrasives for specified purposes.
- (c) Correctly specify storage, handling and jointing procedures.

#### **OUTCOME 3**

Set up and operate sanding machines.

##### **Performance Criteria**

- (a) Correctly select and apply abrasive.
- (b) Set machines accurately.
- (c) Correctly operate the machines.
- (d) Demonstrate the application of pressure and work methods correctly.
- (e) Comply with current health and safety regulations in all work methods and throughout all practical activities.

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

**UNIT** Woodmachining: Sanding and Shaping Machines (SCQF level 6)

### EVIDENCE REQUIREMENTS FOR THIS UNIT

Evidence is required to demonstrate that the candidates have achieved this Unit to the standard specified within all Outcomes and Performance Criteria. All working practices must be in line with relevant and current Health and Safety legislation and regulations. A risk assessment and method statement must be completed prior to any practical activities taking place.

Written and/or oral evidence is required to show that the candidate has achieved the standards specified in the Performance Criteria in Outcomes 1 and 2. Candidates must demonstrate knowledge and understanding of technical terminology relating to the safe use of sanding and shaping machines their functions and set up for various materials and shapes. For Outcome 2 candidates must demonstrate knowledge and understanding of technical terminology relating to the manufacture of abrasives and their jointing, the identification of a range of abrasive mediums, selection of abrasive coatings and backings for various materials and finishes, and also how to correctly handle and store abrasives.

Performance evidence supplemented with assessor observation checklist should be used to show that the candidate has achieved the standards specified in the Performance Criteria in Outcome 3. The candidate must prepare and set up a range of sanding machines, and make adjustments accurately. The candidate must then, on **two** occasions, produce components including jig manufacture with internal and external curves for shaped work on a spindle moulder. The candidate must also, on **one** occasion, finish veneered board material and timber accurately during the manufacture of a raised panel and door frame.

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

## National Unit Specification: support notes

### UNIT Woodmachining: Sanding and Shaping Machines (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 in Woodmachining at SCQF level 6, which is a mandatory component of the Modern Apprenticeship.

The successful completion of this Unit will provide candidates with the underpinning knowledge of the design and skills relating to safe working practices of a range of sanding machines commonly used within the timber industries.

This Unit would be offered to candidates from the construction and related industries. The skills 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.

The Unit deals with the theory and practice associated with the safe use, of sanding machines, and also the technical understanding of the applications for abrasive materials and is complemented by Units dealing with related work in machine woodworking. There are opportunities to integrate aspects of this Unit with *Woodmachining: Spindle Moulder*; *Woodmachining: Mortice Machines* and *Woodmachining: Tenon Machine* at SCQF level 6 as it would help candidates manufacture jigs for curved work and the raised panel and door frame could be used as scribed door components for assessment across all the Units. It should be delivered as part of a structured programme of training and orientated to the context of the candidate's work and area of responsibility.

A typical range of machinery to be covered with candidates would be: wide belt sander, disc and bobbin sander and finisher.

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.

## National Unit Specification: support notes (cont)

## **UNIT**      Woodmachining: Sanding and Shaping Machines (SCQF level 6)

### **GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT**

Candidates should be given working drawings and specifications. It is recommended that candidates work towards tolerances of  $\pm 2$  mm for internal and external curves dimensions,  $\pm 0.5$  mm for square dressed and shaped component dimensions and no sand through on raised panel.

The candidate should be introduced to all relevant machinery components and abrasives through classroom teaching with the use of visual aids, electronic presentations, DVDs e-learning, reference books, classroom exercises and group discussions.

The function of each component should be thoroughly demonstrated. Safe working practice methods should be demonstrated by candidates showing good technique in the measuring, marking out of materials, setting and safe operation of machinery. The teaching approach should help ensure the candidate is acquiring the underpinning knowledge required for the Unit.

#### **Outcome 1**

The candidate should be made familiar with a typical range of sanding machines, the type of work of which they are capable and the procedures necessary for setting and operating such equipment. Emphasis should be made of the high degree of accuracy and surface finish which is possible with sanding machines.

#### **Outcome 2**

The candidate should be introduced to the variety of forms which abrasive materials are supplied in, abrasive coatings and backing and of the range of applications for which they are suitable. Candidates should be made aware of the jointing techniques used in the manufacture of wide sanding belts and the correct storage conditions of sanding belts and the affects this may have on the life of the belt. Candidates should also be aware of the adhesion techniques of sanding discs.

#### **Outcome 3**

The candidate should be encouraged to utilise sanding equipment as much as possible in order to increase proficiency in setting up and operating disc, bobbin and wide belt sanders. Abrasives should be dressed frequently to avoid loading particularly where resinous softwoods are concerned.

At the time of writing the following safety requirements apply: HSW (Health and Safety at Work etc.) Act; COSHH (Control of Substances Hazardous to Health) Regulations; Abrasive Wheels Regulations; PUWER (Provision and Use of Work Equipment Regulations).

## National Unit Specification: support notes (cont)

### UNIT Woodmachining: Sanding and Shaping Machines (SCQF level 6)

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

Candidates will have the opportunity to develop the Core Skill of *Communication* at SCQF level 4 throughout practical tasks, as they should be expected to communicate with others using the appropriate terminology, tone and style suited to the workplace.

Outcome 2 provides an opportunity for candidates to develop the Core Skill of *Working with Others* at SCQF level 4 through discussions within group activities.

### GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

Section 6 of the Woodmachining 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 instrument 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 practise as possible, prior to being set the assessment tasks.

For Outcomes 1 and 2, an appropriate method of assessing the candidates' knowledge and understanding of terminology used to identify materials, machine parts, regulations and abrasives in relation to Sanding and Shaping Machines would be through a series of short answer and multiple choice question papers.

A series of practical activities will allow evidence to be gathered for Outcome 3 through observation that the candidates have met the given standards and tolerances. An assessor observation checklist can be used to record this evidence.

### 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 communications 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)*.

## **National Unit Specification: support notes (cont)**

**UNIT**      Woodmachining: Sanding and Shaping Machines (SCQF level 6)

### **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)