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## Making a Finished Product from Wood (National 4)

**SCQF:** level 4 (6 SCQF credit points)

**Unit code:** H25Y 74

### Unit outline

This is the Added Value Unit in the National 4 Practical Woodworking Course. The general aim of this Unit is to enable the learner to provide evidence of added value for the National 4 Practical Woodworking Course through the successful completion of a practical activity which will allow the learner to demonstrate breadth, challenge and/or application.

Learners who complete this Unit will be able to:

- 1 Produce and apply a finish to a product in wood

This Unit is a mandatory Unit of the National 4 Practical Woodworking Course and is also available as a freestanding Unit. The Unit Specification should be read in conjunction with the *Course Support Notes*, which provide advice and guidance on delivery and assessment approaches. Exemplification of the standards in this Unit is given in *Unit Assessment Support*.

### Recommended entry

Entry to this Unit is at the discretion of centre. It is recommended that the learner should be in the process of completing, or have completed, the following Units in the National 4 Practical Woodworking Course:

- ◆ Practical Woodworking: Flat-frame Construction (National 4)
- ◆ Practical Woodworking: Carcase Construction (National 4)
- ◆ Practical Woodworking: Machining and Finishing (National 4)

## **Equality and inclusion**

This Unit Specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence. For further information, please refer to the *Course Support Notes*.

# Standards

## Outcomes and assessment standards

### Outcome 1

The learner will:

- 1 Produce and apply a finish to a product in wood by:**
  - 1.1 Selecting and using, with guidance, a range of common woodworking hand, machine and power tools and materials as appropriate
  - 1.2 Marking out, cutting and shaping timbers and sheet materials, with guidance, to specified tolerance
  - 1.3 Manufacturing, with guidance, a wooden product to given drawings and to given standards
  - 1.4 Selecting and applying, with guidance, an appropriate finish to the product
  - 1.5 Working in accordance with recognised procedures and safe working practices

### Evidence Requirements for the Unit

This Unit will be assessed through controlled assessment which meets the Evidence Requirements below.

The assessment method for this Unit will be a practical activity in which the learner will draw on and apply the skills and knowledge related to flat-frame and carcass construction and machining and finishing techniques.

The practical activity will assess the learner's skills in reading and interpreting given working drawings and outline specification information, checking materials against a cutting list, marking out, cutting and shaping timbers and sheet materials in readiness for assembling the product, manufacturing the product, and applying an appropriate finish.

This practical activity is:

- ◆ set by centres within the SQA guidelines described below
- ◆ conducted under some supervision and control

Evidence will be internally marked by centre staff in line with SQA guidelines.

All assessment is subject to quality assurance by SQA.

#### Setting the assessment

The practical activity will be set by centres within the following guidelines:

- ◆ The specification for the practical activity will be agreed between the learner and the teacher.
- ◆ The teacher will provide overall guidelines for the practical activity and a list of questions/tasks/prompts which will lead learners through the practical activity in clear stages.

- ◆ The practical activity will be a meaningful and appropriately challenging task, which should clearly demonstrate application of knowledge and skills, at an appropriate level, drawn from the *Flat-Frame Construction* Unit, the *Carcase Construction* Unit and the *Machining and Finishing* Unit (as defined in the 'Further mandatory information on Course coverage' section of this document).
- ◆ The practical activity will involve making a wooden product consisting of a minimum of five component parts. Component parts will be prepared, as required, for a single finish before assembly. The component parts will be assembled and fixed. Finishing work will then be completed. Surface finishes will include staining, varnishing or application of wax finish as appropriate, and will be free from significant blemishes.
- ◆ The practical activity product should be made with the assistance of power and hands tools and demonstrate the application of skills in turning, using a woodworking lathe.
- ◆ The working drawings for the practical activity task will not detail every aspect of the product. This will allow the task to be sufficiently open and flexible to allow for personalisation and choice. It will thus also allow learners to demonstrate practical creativity.

### **Conducting the assessment**

The practical activity will be conducted under some supervision and control. This will take the form of the following:

- ◆ The practical activity will be carried out under supervised open book conditions.
- ◆ The teacher may also give learners some support and guidance, as appropriate to National 4 level, to help them progress through each stage of the practical activity. The amount of support provided should be reflected in the assessment judgement.

### **Judging the evidence**

Evidence will be internally marked and verified by centre staff in line with SQA guidelines.

All assessment is subject to quality assurance by SQA.

Learners will provide evidence of:

- ◆ following appropriate procedures and processes in the manufacture of the product by:
  - selecting woodworking tools, equipment and materials appropriate for tasks
  - checking materials supplied against a cutting list
  - confirming that woodworking tools and equipment are in good condition and safe working order before, during and after use
  - turning using a woodworking lathe to a given diameter and  $\pm 2\text{mm}$  to match a template
  - preparing timber surfaces in accordance with manufacturers' instructions and good practice and to a competent standard
  - preparing and applying surface finishes in accordance with manufacturers' instructions and good practice and free from significant blemish
  - fixing operations with limited damage and satisfactory torque/security

- using tools and equipment in accordance with recognised procedures and safe working practices
- ◆ the completed product. It is assumed that the completed product is readily portable.

The standards and tolerances applicable to the product are as follows:

Operation	Tolerance
Planing (or similar)	±2mm
Marking out	±2mm
Machine/power tool tasks: <ul style="list-style-type: none"> <li>◆ vertical drilling to</li> <li>◆ sanding to a line to</li> <li>◆ drilling to given line position to</li> </ul>	±2mm
Joint gaps	Not to exceed 2mm
Completed product — overall sizes within	±5mm

- ◆ a record of progress through the practical activity (such as an informal diary or electronic log or blog) produced by the learner. Information in the diary should include when tasks are completed, areas that have been an issue for the learner, safe working practices, and strength and weaknesses. The diary should also indicate where practical creativity has been demonstrated.

### Re-assessment

In relation to Unit assessment, SQA's guidance on re-assessment for Units applies.

Further information is provided in the exemplification of assessment in *Unit Assessment Support*. Advice and guidance on possible approaches to assessment is provided in the *Course Support Notes*.

## **Development of skills for learning, skills for life and skills for work**

Please refer to the *Course Specification* for information about skills for learning, skills for life and skills for work.

## Further mandatory information on Course coverage for the National 4 Practical Woodworking Course

The following gives details of mandatory skills, knowledge and understanding for the National 4 Practical Woodworking Course. Assessment of this Added Value Unit will involve selecting appropriate skills, knowledge and understanding from those listed below, in line with the Evidence Requirements above. This list of skills, knowledge and understanding also provides the basis for the assessment of all the Units in the Course.

<b>Identification and skills in use of the following, including associated processes, as appropriate to Unit:</b>	
<b>Measuring and marking out</b>	Rule, tape measure, try-square, marking gauge, templates, marking knife, outside calipers  Units of measurement
<b>Reading and interpreting drawings and documents</b>	Working drawings, pictorial drawings, diagrams, cutting lists  Knowledge and understanding of orthographic projection, scale, dimensioning (linear, radial and diameter) and basic drawing conventions including: line types, centre lines and hidden detail
<b>Materials</b>	Softwoods (white and red pine, cedar and larch)  Hardwoods (ash, oak, beech, mahogany/merantii)  Manufactured boards and veneered manufactured boards (chipboard, plywood, MDF and blockboard)
<b>Bench work</b>	<ul style="list-style-type: none"> <li>◆ saws (tenon and coping)</li> <li>◆ chisels (bevelled edge, mortise and firmer)</li> <li>◆ mallet</li> <li>◆ hammers</li> <li>◆ pincers</li> <li>◆ planes (jack, smoothing, plough, bull-nose, rebate, combination)</li> <li>◆ hand drills and braces</li> <li>◆ screwdrivers</li> <li>◆ sawing board/bench hook</li> <li>◆ hand router</li> <li>◆ bradawl</li> <li>◆ other common bench tools</li> </ul> Basic knowledge and understanding of tool care and maintenance: reporting faults, setting a plane, honing a chisel
<b>Cramping</b>	<ul style="list-style-type: none"> <li>◆ cramps (sash, G, quick release)</li> </ul>
<b>Flat frame jointing techniques</b>	Flat-frame joints: <ul style="list-style-type: none"> <li>◆ butt</li> <li>◆ corner lap</li> <li>◆ various 'T'</li> <li>◆ cross-halving</li> </ul>

	<ul style="list-style-type: none"> <li>◆ mortise and tenon (stub and through, no haunch)</li> <li>◆ dowel</li> </ul>
<b>Carcase jointing techniques</b>	<p>Carcase joints:</p> <ul style="list-style-type: none"> <li>◆ butt</li> <li>◆ corner rebates</li> <li>◆ through housing</li> <li>◆ dowel</li> </ul>
<b>Mechanical fixing and adhesive bonding</b>	<p>Common nails (round and oval brad), pins, screws (roundhead and countersunk)</p> <p>Proprietary flat-frame fixings</p> <p>Proprietary carcase construction fixings</p> <p>Knock down fixings</p> <p>Proprietary wood adhesives and glues (interior and exterior)</p>
<b>Machining and finishing</b>	<p>Machine tools:</p> <ul style="list-style-type: none"> <li>◆ woodwork lathes</li> <li>◆ lathe tools — forked/butterfly centre, dead centre, revolving centre, gouge, scraper, parting chisel</li> <li>◆ parts of the lathe — bed, tailstock, tool rest, headstock</li> <li>◆ belt or disc sander</li> <li>◆ pedestal drill</li> </ul>
	<p>Power tools:</p> <ul style="list-style-type: none"> <li>◆ hand-held drills</li> <li>◆ sanders</li> <li>◆ screwdrivers</li> </ul>
	<p>Basic knowledge and understanding of tool care and maintenance:</p> <ul style="list-style-type: none"> <li>◆ reporting faults and fault reporting systems</li> <li>◆ inspecting cables, tool holding, guards</li> <li>◆ confirmation of dust extraction operations</li> </ul>
<b>Surface preparation and finishing</b>	<p>Wood preparation techniques: planing, sanding, stopping and filling</p> <p>Finishing techniques: varnishing, staining, wax finishing, oiling (Danish, linseed, vegetable oils)</p>
<b>Safe working practices</b>	<p>Good practices and safe systems for general workshop and individual activities as appropriate</p> <p>Personal Protective Equipment (PPE)</p>
<b>Recycling and sustainability</b>	<p>Best practice in selecting materials appropriate for use</p> <p>Understanding and following workshop recycling practices and processes</p>



# Administrative information

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**Superclass:** WK

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## History of changes

Version	Description of change	Authorised by	Date
1.1	Change to content tables; deletion of 'between centres' in Evidence Requirements section; removal of need to provide evidence of good practice in terms of sustainability and recycling (bullet on p5)	Qualifications Development Manager	June 2013

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