

PROFFI217 (SQA Unit Code - FE59 04) Make and assemble wooden components of hand-crafted furniture



Overview

This standard the competence required to make wooden components for hand-crafted furniture (a significant quantity of the joint work in this unit should be hand cut; in particular through and lapped dove tails). This involves:

- 1 cutting, shaping and moulding components
- 2 cutting joints
- 3 working in ways which maintain your own and others' safety

There is also a scope statement which defines the coverage of this standard.

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Performance criteria

Cut, shape and mould components to size

You must be able to:

- P1 organise the **tools and equipment** you will need so that you can work effectively and keep your work area tidy
- P2 make sure that you have clear and complete details of the **specification** to be met
- P3 check that **materials** are free of flaws which would affect their suitability for the **component** to be made and discard any which are not
- P4 accurately measure and mark out lines/profiles to be made to within the specified tolerances
- P5 use effective **techniques** for alignment of surfaces.
- P6 check and confirm that moulded **components** have the required contour
- P7 use the correct **adhesives** and pressure when gluing **materials**.
- P8 minimise waste in your choice of **materials** and in how you measure and mark them out for **cutting**
- P9 handle the **materials** and **components** in ways that avoid damaging them
- P10 cut the **components** accurately to size and shape, keeping within the required tolerances
- P11 use **tools** safely and effectively
- P12 return **tools and equipment** to the correct storage locations when not in use
- P13 dispose of wastes safely to the designated location.

You must be able to:

Cut and joint components for hand-crafted furniture

- P14 organise the **tools and equipment** you will need so that you can work effectively and keep your work area tidy
- P15 orient the **materials** to be used in the correct face and grain alignment
- P16 check that **materials** are free from flaws which might affect their suitability for **joint** construction and discard any that are not
- P17 make sure that you have clear and complete details of the **joints** to be produced
- P18 use an appropriate method to measure, mark out and control the dimensions of the cuts
- P19 cut the **joints** accurately to within the required tolerances
- P20 check and confirm that **joints** fit correctly before making them permanent
- P21 deal promptly and effectively with any **joint** faults that arise
- P22 clean and sand the **components** as required so that they can be effectively worked
- P23 check and confirm that the finished **joint components** meet the specified quality for alignment shape and grain orientation
- P24 use appropriate **techniques** to check **joints** and assembly for square
- P25 use **tools** safely and effectively
- P26 return **tools and equipment** to the correct storage locations when not in

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use

P27 dispose of wastes safely to the designated location

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Knowledge and understanding

You need to know and understand:

Cut, shape and mould components to size

- K1 the meaning of terms used in technical specifications for component production and assembly
- K2 the functions and uses of the different types of tools and equipment used in furniture assembly
- K3 what personal protective equipment to use and why
- K4 how to set out a work area for efficient working and the health and safety issues that can arise if a work area is disorganised and untidy
- K5 the handling characteristics of different species of wood used in hand-crafted furniture
- K6 what kinds of flaws would affect the utility of a piece of wood within furniture construction
- K7 why it is important to work with the grain of wood and the implications of not doing so
- K8 how the characteristics of different wood composites affect the way they are cut and handled
- K9 what the consequences are of inaccurate measuring and cutting
- K10 what the consequences are of using poor technique when shaping materials
- K11 how to use manual and powered tools and equipment safely in ways that protect yourself and others from risk
- K12 what your personal limitations are in respect of the PUWER regulations 1998
- K13 the implications for your work of the HASAWA and COSHH Regulations, including where to find out about relevant risk assessment details and control methods that have been set by your organisation.
- K14 how to handle adhesives safely, including the use of appropriate personal protective equipment and adequate ventilation
- K15 how to dispose of waste in accordance with current legislation

Cut and joint components for hand-crafted furniture

You need to know and understand:

- K16 the meaning of terms used in technical specifications for joints
- K17 the functions and uses of the different types of tools and equipment used in furniture assembly
- K18 what personal protective equipment to use and why
- K19 how to set out a work area for efficient working and the health and safety issues that can arise if a work area is disorganised and untidy
- K20 the handling characteristics of different species of wood used in hand-crafted furniture
- K21 what kinds of flaws would affect the utility of a piece of wood within furniture construction
- K22 why it is important to work with the grain of wood and the implications of not doing so
- K23 how the characteristics of different wood composites affect the way they

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- are cut and their suitability for different joint constructions
- K24 what the consequences are of inaccurate measuring and cutting
- K25 the mechanics of joint construction
- K26 the limitations of different jointing components and alternative jointing techniques that can be used
- K27 how to use manual and powered tools and equipment safely in ways that protect yourself and others from risk
- K28 the implications for your work of the HASAWA and COSHH Regulations, including where to find out about relevant risk assessment details and control methods that have been set by your organisation.
- K29 how to handle adhesives safely, including the use of appropriate personal protective equipment and adequate ventilation
- K30 how to handle adhesives safely, including the use of appropriate personal protective equipment and adequate ventilation
- K31 what your personal limitations are in respect of the PUWER regulations 1998
- K32 how to dispose of waste in accordance with current legislation

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Additional Information

Scope

Adhesives

Commercially available glues used in making hand-crafted furniture. These include polyvinyl acetate, urea or phenol formaldehyde, animal based glues, resorcinol, polyurethane and epoxy resins.

Components

The pieces from which an assembly within hand-crafted furniture is constructed.

Cutting

Using saws (e.g. tenon, dovetail, dimension or band), planes (e.g. jack, smoothing, block, scraper, rebate, shoulder or bullnose), chisels (e.g. bevel-edged, mortice, firmer and paring) and routers.

Joints

The joints used in making hand-crafted furniture. They include insertion, scarf, rub joints, knock-down, dove-tail, mitred dove-tail, mortise and tenon, mitred tenon, bridle, lap, mitre, tongue and groove, loose tongue, housing, dowel, biscuit and butt joints.

Materials

The softwoods, hardwoods and wood composites used in making/ furniture. Composites would include plywood, chipboard and MDF. Woods may be of an oily or resinous nature, have a ripple or interlocking grain and be of a burr or pippy structure.

Specification

The set of instructions which describe the work to be carried out, including details of the qualities (colour, grain), the nature of the joints to be made and the tolerances to be achieved. In the context of this unit, tolerances to within (0.5mm) would be expected. Specifications will usually be provided by verbal, written form or by diagrams from research. A competent person should also be able to work from verbal instructions.

Techniques

The techniques covered by this unit are chiselling, drilling, boring, sawing, planing, moulding, scraping, abrading, splicing, and matching, squaring and precise measurement.

Tools and Equipment

The hand and powered tools used in the making of hand crafted furniture, including basic fixed and portable wood working machinery. Hand tools include rulers, pencils, vernier callipers, chisels, planes, cramps, saws, drills, drill bits, squares, mallets, scrapers, honing stones, knives, gauges as well as workshop tools and devices such as bench hooks, winding sticks, shooting boards, mitre blocks of different angles, scratch stock, work benches. Examples of powered tools would include biscuit jointers, sanders, routers, drills and saws. Examples of machinery would include lathes, presses, bandsaw, dimension saw, surface planer and thicknesser.

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