

PROFFI319 (SQA Unit Code - FE6F 04) Replicate/restore wooden components of furniture



Overview

This standard addresses the competence required to make wooden components for hand-crafted furniture. This involves:

- 1 cutting, shaping and moulding components
- 2 cutting joints
- 3 working in ways which maintain your own and others' safety
- 4 dismantling, replacing and replication of wooden components

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

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Performance criteria

Disassemble parts and/or sections

You must be able to:

- P1 organise the **tools and equipment** and **adhesives** 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 select new patinated **materials** which will meet the requirements of the work **specification**
- P4 use appropriate dismantling **tools** and **techniques** for removal of **materials**.
- P5 accurately measure and mark out lines/profiles to be made to within the specified tolerances
- P6 use effective **techniques** to check alignment of surfaces.
- P7 check and confirm that moulded **components** have the required contour
- 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** and replace parts 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:

Replicate parts and assemble

- P14 organise the **tools and equipment** you will need so that you can work effectively and keep your work area tidy
- P15 select 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 use in replication and discard any that are not
- P17 make sure that you have clear and complete details of the **components/joints** to be produced
- P18 use an appropriate template to measure, mark out and control the dimensions of the cuts
- P19 **cut** the **components/joints** accurately to within the required tolerances
- P20 check and confirm that **components/joints** fit correctly before making them permanent
- P21 clean and sand the components as required so that they can be effectively worked
- P22 use the correct **adhesives** and pressure when gluing **materials**.
- P23 deal promptly and effectively with any **component/joint** faults that arise
- P24 check and confirm that the finished **joint/components** meet the specified quality for alignment shape and grain orientation
- P25 use re-assembly **tools** safely and effectively

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P26 return **tools and equipment** to the correct storage locations when not in use

P27 dispose of wastes safely to the designated location

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Knowledge and understanding

You need to know and understand:

Disassemble parts and/or sections

- 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 availability and working practices of different species of wood used in hand-crafted furniture, the importance of this to tensile strength, compression strength, seasoning, durability, degradation, infestation and density
- 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 blunt tools and 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

You need to know and understand:

Replicate parts and assemble

- K15 the meaning of terms used in technical specifications for joints
- K16 the functions and uses of the different types of tools and equipment used in furniture assembly
- K17 what personal protective equipment to use and why
- K18 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
- K19 the growth and handling characteristics of different species of wood used in furniture, the importance of this to abrasion, tensile strength, compression strength, seasoning, durability, degradation, infestation and density

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- K20 what kinds of flaws would affect the utility of a piece of wood within furniture construction
- K21 why it is important to work with the grain of wood and the implications of not doing so
- K22 how the characteristics of different wood composites affect the way they are cut and their suitability for different joint constructions
- K23 what the consequences are of inaccurate measuring and cutting
- K24 the mechanics of joint construction
- K25 the limitations of different jointing components and alternative jointing techniques that can be used
- K26 methods of mechanical cutting with templates
- 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 what your personal limitations are in respect of the PUWER regulations 1998

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Additional Information

Scope

Adhesives

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

Components

The pieces from which an assembly within hand-crafted furniture is constructed, which could include a replica of an original part.

Cutting

Using saws (e.g. tenon, dovetail 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 and butt joints.

Materials

The softwoods, hardwoods and wood composites used in making/restoring traditional and modern 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. Breakers to be used where available.

Specification

The set of instructions which describe the work to be carried out, including details of the qualities (colour, grain, replica of finish and marks) of the materials to be used, 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 drilling, boring, sawing, planing, moulding, scraping, abrading, splicing and matching.

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 could include 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. Examples of powered tools would include sanders, routers, drills and saws. Examples of machinery would include lathes, presses, bandsaw, surface planer and thicknesser. Examples of equipment would include glue pots, cramping jigs, iron.

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Relevant occupations Paper and wood machine operatives; Furniture maker and other craft woodworkers; Upholsterers; Labourers build and woodworking trades

Suite Furniture; Furnishings and Interiors

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