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**Overview**

This standard covers 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

**Performance  
criteria**

- 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.
  - 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



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- 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 use
  - P27 dispose of wastes safely to the designated location

**Knowledge and understanding**

**You need to know and understand:**

- 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 the implications for your work of the relevant regulations, including where to find out about relevant risk assessment details and control methods that have been set by your organisation.
- K13 how to handle adhesives safely, including the use of appropriate personal protective equipment and adequate ventilation
- K14 how to dispose of waste in accordance with current legislation
- 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 handling characteristics of different species of wood used in hand-crafted furniture
- 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 how to use manual and powered tools and equipment safely in ways that protect yourself and others from risk
- K27 how to handle adhesives safely, including the use of appropriate personal protective equipment and adequate ventilation
- K28 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, planes, chisels 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



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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.

PROFM16 (SQA Unit Code – HE6W 04)  
Make and assemble wooden components of hand-crafted  
furniture



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