

# PROFRR10 (SQA Unit Code – HE7D 04)

## Replicate or repair wooden components of furniture



### Overview

This standard addresses the competence required to make wooden components for furniture. This could be for hand crafted or production furniture. This involves disassembling parts or sections, cutting, shaping and moulding components, cutting joints and reassembling parts or sections.

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

## Performance criteria

- You must be able to:
- P1 organise the **tools, equipment** and **adhesives** you will need so that you can work effectively
  - P2 make sure that you have clear and complete details of the **components or joints** to be produced and the **specification** they must meet
  - P3 safely and effectively use appropriate **tools** to dismantle, replicate and reassemble components
  - P4 use appropriate **techniques** to remove **existing wood or composites**
  - P5 accurately measure and mark out, within expected tolerances, lines or profiles to be made
  - P6 select **wood or composites** in the correct face and grain alignment, which meet the requirements of the work **specification** and are free from flaws which might affect their suitability
  - P7 minimise waste in your choice of **wood or composites** and in how you measure and mark them out for **cutting**
  - P8 use an appropriate template to measure, mark out and control the dimensions of cuts
  - P9 **cut** parts, components and joints accurately to size and shape, keeping within the required tolerances
  - P10 use effective **techniques** to check alignment of surfaces.
  - P11 check and confirm that moulded **components** have the required contour
  - P12 handle **wood, composites** and **components** in ways that avoid damaging them
  - P13 clean and sand components as required so that they can be effectively worked
  - P14 use the correct **adhesives** and pressure when gluing **wood or composites**
  - P15 make sure that **components and joints** fit correctly and meet the specified quality for alignment shape and grain orientation
  - P16 deal promptly and effectively with any faults that arise
  - P17 return **tools and equipment** to the correct storage locations when not in use
  - P18 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, assembly and joints
- K2 the functions and uses of the different types of tools and equipment used
- 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 growth and handling characteristics of different species of wood used in hand-crafted furniture and the importance of this to abrasion, 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 the mechanics of joint construction
- K10 the limitations of different jointing components and alternative jointing techniques that can be used
- K11 methods of mechanical cutting with templates
- K12 the consequences of inaccurate measuring and cutting
- K13 how to use manual and powered tools and equipment safely in ways that protect yourself and others from risk
- K14 the consequences of using blunt tools and poor technique when shaping materials
- K15 the implications for your work of relevant regulations
- K16 where to find out about relevant risk assessment details and control methods that have been set by your organisation
- K17 how to handle adhesives safely, including the use of appropriate personal protective equipment and adequate ventilation

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## Additional information

### Scope / range:

#### **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 furniture is constructed, which could include a replica of an original part or repair to a frame in a modern or traditional piece.

#### **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 and butt joints.

#### **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.

#### **Wood and composites**

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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.

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<b>Suite</b>	Furniture Restoration and Service Repair
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