



Australian Government

MSFFDT5004 Construct custom furniture using advanced techniques

Release: 2

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Modification History

Release 2 - Missing content replaced. Equivalent.

Release 1 - New unit of competency

Application

This unit of competency covers constructing original and unique custom furniture using or adapting traditional and innovative construction techniques. It includes interpreting and adapting design specifications that are compatible with the product material, purpose and style of the furniture and involves application of skills and knowledge at a highly skilled artisan level.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Competency Field

Unit Sector

Furniture design and technology

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1	Plan and prepare for work	1.1	Applicable work health and safety (WHS), legislative and organisational requirements relevant to constructing custom furniture are verified and complied with
		1.2	Instructions, plans and design documents are read and interpreted to identify furniture construction and finishing requirements
		1.3	Tools, equipment and materials are selected and checked prior to use to ensure that they are appropriate for the work, serviceable and in a safe condition

- 1.4 Product purpose, context, furniture style and construction materials are identified
 - 1.5 Work sequence covering each step in the construction process, including sub-assemblies, is planned and documented to enterprise requirements
 - 1.6 Quality checking procedures are developed and documented for each step in the construction process
- 2 **Curve and shape components**
 - 2.1 Techniques for bending, forming and shaping components are identified, evaluated and confirmed as being appropriate for the construction requirement
 - 2.2 Component specifications are set out according to work instructions and materials marked according to industry practices
 - 2.3 Tools, machines and equipment are used in accordance with safety requirements and manufacturer specifications
 - 2.4 Materials are bent, formed and shaped in accordance with the production plan and workplace procedures
 - 2.5 Components are checked against specified tolerances, fit and accuracy
- 3 **Veneer components**
 - 3.1 Suitable veneer material is identified, evaluated and selected
 - 3.2 Tools, machines and equipment are used in accordance with safety requirements and manufacturer specifications
 - 3.3 Veneer components and materials are measured, marked and cut to size
 - 3.4 Veneers are prepared for application and laid out
 - 3.5 Suitable joining processes to backing and adjacent veneers are selected and prepared
 - 3.6 Adhesives are applied according to workplace procedures and/or manufacturer instructions

- 3.7 Rough veneering components are produced in accordance with the production plan and workplace procedures, including the use of protective equipment
 - 3.8 Final trim and finishing are completed to specifications
 - 3.9 Work is checked against required quality standards
 - 3.10 Any non-conformity with the required quality standard is rectified
- 4 **Make joints**
 - 4.1 Joints are identified and type of joint to be used is selected and adapted/designed as necessary
 - 4.2 Tools, adhesives and fasteners are selected to match the joint type
 - 4.3 Cutting and joining lines are marked out to suit joint type
 - 4.4 Measurements and calculations are checked for accuracy to ensure quality outcomes
 - 4.5 Material features are identified and optimal usage criteria are observed
 - 4.6 Material is cut to specification, inspected and prepared for joining
 - 4.7 Material is joined in accordance with the job specifications
 - 4.8 Fasteners and adhesives are used to make joints firm where required
 - 4.9 Finished joint is checked against quality requirements
- 5 **Construct sub-assemblies**
 - 5.1 Components and materials, including adhesives, trims and accessories, and tools, are laid out in accordance with the assembly plan
 - 5.2 Components are checked against specification prior to assembly and out of specification items are rejected
 - 5.3 Sub-assemblies are assembled using appropriate tools, jigs and fixtures and checked against specification for

			accuracy, fit, twist and distortion
		5.4	Sub-assembly quality is checked against plans at identified checkpoints
6	Assemble custom furniture	6.1	Components, sub-assemblies and materials, including adhesives, trims and accessories, and tools, are laid out in accordance with the assembly plan
		6.2	Components and sub-assemblies are checked against specification prior to assembly and out of specification items are rejected
		6.3	Components are assembled, fitted using appropriate tools, jigs and fixtures, and checked against specification for accuracy, fit, twist and distortion
		6.4	Hardware and decorative accessories are applied to specification
		6.5	Product is prepared for final finish, including the removal of bruises, scratches, dents and marks
		6.6	Product quality is checked against plans at identified checkpoints
7	Finish furniture surface	7.1	Using samples of the type of material surface and specified finish, various finishing options are evaluated and the preferred option is selected
		7.2	Sample of material is tested with selected finishing technique to ensure appropriateness
		7.3	Furniture surface is prepared in accordance with the finishing specification
		7.4	Imperfections, pores or nail or screw holes on the surface are rectified
		7.5	Finishing processes and materials are applied in accordance with the agreed specifications
		7.6	Surface is polished or buffed depending on the shine required
		7.7	Work is checked against required quality standards

		7.8	Any non-conformity with the required quality standards is rectified
8	Complete housekeeping	8.1	Unused materials are stored or recycled as required
		8.2	Tools and equipment are cleaned and stored appropriately
		8.3	Faulty or defective equipment is tagged and reported in accordance with workplace practices
		8.4	Work area is cleaned and rubbish disposed of appropriately
		8.5	Workplace documentation and/or reports are completed, including time log for operations for costing and business improvement activities

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency. Detail on appropriate performance levels for each furnishing unit of competency in reading, writing, oral communication and numeracy utilising the Australian Core Skills Framework (ACSF) are provided in the Furnishing Training Package Implementation Guide.

Range of Conditions

Specifies different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Range is restricted to essential operating conditions and any other variables essential to the work environment.

Unit context includes:

- WHS requirements, including legislation, building codes, material safety management systems, hazardous and dangerous goods codes, and local safe operating procedures or equivalent
- work is carried out in accordance with legislative obligations, environmental legislation, relevant health regulations, manual handling procedures and organisation insurance requirements
- work requires individuals to demonstrate conceptual and analytical ability, discretion, judgement and problem

	solving
Instructions include:	• customers or suppliers may be internal or external • workplace procedures relating to the use and operation of tools and equipment • production planning figures • workplace instructions: • job sheets • set-outs • plans • specifications • drawings and designs • workplace procedures relating to reporting and communications • manufacturer instructions for the use of equipment and materials
Shaping, bending and forming techniques include:	• steam/heat bending • curving • pressure bending • shaping by hand or static machine
Shaped components include:	• timber shaped by hand or static machine tools
Cutting and shaping tools and equipment include:	• measuring tapes and rules • hammers • mallets • squares • bevels • chisels • planes • hand saws • power saws • power drills/screwdrivers • pneumatic tools • clamps • screwdrivers • pincers • rasps • surface planers • panel planers • belt sanders • horizontal borers • vertical drill presses

	• table saws • dove-tailers • pedestal grinders • wood turning lathes • veneer guillotines • presses
Materials include:	• timber • glass • metal • manufactured board • furniture hardware • adhesives • screws • nails • dowels • decorative finishes • finishing material
Veneering tools and equipment include:	• knives • chisels • measuring tapes or rules • mallets • squares • levels • planes • band saws • power saws • pneumatic tools • vacuum bags and presses • clamps • moulds • jigs and fixtures • rollers • laminate trimmers • cutters and hand routers • sandpaper • wire wool • sanding block
Veneered components include:	• thin slices of wood, usually thinner than 3 mm (1/8”), which is usually glued onto a substrate
Veneer materials include:	• timber • manufactured board

	• laminates • timber strips • adhesives • cleaning materials • tapes
Joints and variations of joints for custom furniture include:	• dowel • mortise and tenon • dovetail • lap joint • biscuit joint • finger joint • housing joint • mitre • bridle joints
Jointing tools and equipment include:	• chisels • mallets • mortise gauges • vernier callipers • vices • dovetail saws • tenon saws • coping saws • planes • files • hand drills • power drills • dowel jigs • power routers • jigs and fixtures • portable biscuit machines • power saws
Jointing materials include:	• timber (both indigenous and overseas) • adhesives • fasteners
Sub-assembly includes:	• part-constructions of the main assembly needed to allow for gluing and clamping of internal and intricate parts of the furniture item
Assembly materials include:	• timber (both indigenous and overseas) • adhesives • screws • dowels • furniture hardware

Assembly tools and equipment include:	• glass • decorative finishes • measuring tapes or rules • hammers • mallets • squares • clamps • presses
Furniture surface preparation includes:	• sanding by hand or power sander • scraping • planing • other smoothing techniques • and is to take account of the fact that the wood's colour may be changed by staining, bleaching, painting, ammonia fuming and/or a number of other techniques
Surface filling includes:	• using wood plugs or other fillers
Finishing processes and materials include:	• waxing • shellacking • nitrocellulose lacquering • conversion lacquering • linseed oiling • tung oiling • alkyd varnishing • polyurethane varnishing • water-based polyurethane and/or oil-varnish mixes
Personal protective equipment includes:	• that prescribed under legislation, regulations and enterprise policies and practices
Information and procedures include:	• work procedures/instructions • manufacturer specifications and instructions • standard forms of workplace process and procedures • organisation work specifications and requirements • legislation, regulations and codes of practice • quality and Australian Standards and procedures

Unit Mapping Information

Release 2 - Missing content replaced. Equivalent.

Release 1 - Supersedes and is equivalent to LMFFDT5005A Construct custom furniture using advanced techniques

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>

Assessment Requirements for MSFFDT5004 Construct custom furniture using advanced techniques

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Performance Evidence

- Collect, organise and understand information related to furnishing work instructions and work orders and safety procedures
- Apply safe handling requirements for equipment, products and materials, including use of personal protective equipment
- Identify materials used in the work process
- Follow work instructions, operating procedures and inspection processes to:
 - minimise the risk of injury to self or others
 - prevent damage to goods, equipment and products
 - maintain required production output and product quality
- Complete all aspects of the construction and finishing of two (2) furniture items requiring advanced construction techniques and satisfying high-quality custom-made furniture standards and expectations in terms of innovation, complexity, tolerance and fit of components and quality
- Use mathematical ideas and techniques to correctly complete measurements, calculate area and estimate material requirements
- Lead others and work effectively to improve production quality and outcomes
- Communicate ideas and information to enable confirmation of work requirements and specifications and the reporting of work outcomes and problems, interpret basic plans and follow safety procedures
- Use workplace technology related to the coordination, including communication equipment, time and management aids and other measuring devices
- Minimise wastage of resources, including materials, time and money
- Work with others and in a team by recognising dependencies and using cooperative approaches to optimise work flow and productivity and encourage participation of employees in the planning of work activities and changes

Knowledge Evidence

- State or territory WHS legislation, regulations, standards and codes of practice relevant to moisture suppressants and barrier systems
- Organisational, workshop and site standards, requirements, policies and procedures for the construction of custom furniture
- Types of tools and equipment used in construction and procedures for their safe use, operation and maintenance

- Work flow techniques appropriate for the management of the construction work/project
- Presentation and interpretation of plan representation of a furniture design
- Techniques for timber bending, forming and shaping
- Techniques for the preparation of drawings/set-outs/rods and geometrical concepts
- Types, characteristics, uses and limitations of materials
- Techniques for the manufacture and application of veneers
- Techniques for assembly, fixing and finishing of custom furniture components
- Types, characteristics, uses, limitations and safety requirements of adhesives, fasteners and hardware used in custom furniture assembly
- Matching requirements of adhesives and fasteners to timbers/materials used
- Finishing techniques
- Characteristics, properties and selection criteria of finishing materials
- Finishing characteristics and properties of timber being used
- Environmental protection requirements
- Established communication channels and protocols
- Relevant problem identification and resolution

Assessment Conditions

- Assessors must:
 - hold training and assessment competencies as determined by the National Skills Standards Council (NSSC) or its successors
 - have vocational competency in the furnishing industry at least to the level being assessed with broad industry knowledge and experience, usually combined with a relevant industry qualification
 - be familiar with the current skills and knowledge used and have relevant, current experience in the furnishing industry.
- Assessment methods must confirm consistency of performance over time rather than a single assessment event and in a range of workplace relevant contexts.
- Assessment must be by observation of relevant tasks with questioning on underpinning knowledge and, where applicable, multimedia evidence, supervisor's reports, projects and work samples.
- Assessment is to be conducted on single units of competency or in conjunction with other related units of competency. Foundation skills are integral to competent performance in the unit and should not be assessed separately.
- Assessment must occur on the job or in a workplace simulated facility with relevant process, equipment, materials, work instructions and deadlines.
- Access is required to an agreed unique and innovative furniture construction requirement/project, appropriate materials, tools, equipment and specifications relevant to constructing custom furniture.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>