



Australian Government

MSFFDT4005 Construct and evaluate furniture prototypes and samples

Release: 1

MSFFDT4005 Construct and evaluate furniture prototypes and samples

Modification History

Release 1 - New unit of competency

Application

This unit of competency covers constructing or overseeing the construction of furniture prototypes and samples in furnishing operations of all sizes. Construction of prototypes and samples can apply to an industry workplace or design studio environment.

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

Pre-requisite Unit

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 for production	1.1	Applicable work health and safety (WHS), legislative and organisational requirements relevant to constructing prototypes and samples are verified and complied with
		1.2	Design brief is reviewed, confirmed and clarified with appropriate personnel
		1.3	Type and quantity of material to be used is acquired from the storage location
		1.4	Equipment is selected appropriate to work requirements and checked for operational effectiveness in accordance with manufacturer recommendation
		1.5	Communication with others is established and maintained in accordance with WHS requirements

2	Plan for production	2.1	Manufacturing process is planned and organised
		2.2	Material is allocated in accordance with the manufacturing plan and safe working procedures
		2.3	Components are selected
		2.4	Assembly methods are researched and planned
		2.5	Components are assembled in accordance with the sketches and freehand development drawings
		2.6	Prototype or sample is finished according to draft specifications
3	Evaluate prototype or sample	3.1	Prototype or sample is evaluated for functionality and aesthetic appeal
		3.2	Prototype or sample is assessed for their elements of design
		3.3	Prototype or sample is assessed for their principles of design
		3.4	Prototype or sample is analysed against design brief requirements
		3.5	Prototype or sample is reviewed with client or test client
		3.6	Modifications to the prototype or sample are explored to satisfy the requirements of the design brief
		3.7	Prototype or sample production process faults are recorded and reported to the appropriate personnel

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
 - customers or suppliers may be internal or external
- Design brief includes:**
- the aims, objectives, milestones for the design project
 - organisational or personal profiles
 - target audience
 - budget
 - timeline
 - consultation requirements
 - colour requirements
 - image requirements
 - function
- Appropriate personnel include:**
- trainers
 - supervisors
 - suppliers
 - clients
 - colleagues
 - managers
- Materials include:**
- scrap timber
 - man-made timber products
 - plastic
 - metal
 - alloys
 - stone
 - glass
 - textiles
 - fibreglass
 - foam
 - cardboard
 - paper products

	• any other manipulable substance
Storage locations include:	• storage racks • storage bays • bins • stacks • pallet boxes • modularised storage components • temporary stacking bays (stand, frame or ground)
Divisions in storage includes:	• standard product classification • product designation • size • dimension • stack number • weight • grade • shelf life • stock rotation position
Equipment includes:	• static machinery • portable power tools • computer numerically controlled (CNC) equipment • and is to include procedures for lock out protecting operators and co-workers from accidental injury by isolating the machine from the power source
Manufacturing processes include:	• methods by which the product will be produced entailing working drawings and specifications, producing components utilising machine operations, assembly of the components and finishing techniques
Components include:	• parts which make up the whole of a product (each component often requires some level of machining to result in the desire part)
Assembly processes include:	• nailing • gluing • screwing • welding • pressing • sewing • bonding • jointing • connecting various materials
Sketches include:	• hand drawn images • ideation drawings completed freehand
Freehand development	• isometric

drawings include:	• oblique • perspective • orthographic • elevation drawings which explode the parts of the concept sketches and include: • rough sizes • scale • tones • values
Prototypes or samples include:	• a full size replica of the intended product outcome based on concept sketches and freehand development drawings, produced from stiff cardboard, scrap timber or moulding clay
Specifications include:	• measurements • procedures by which a product is constructed • materials to be utilised
Functionality includes:	• purpose intended for the product in relationship to the design brief
Elements of design include:	• line • shape • form (geometric or organic) • texture • colour • function
Principles of design include:	• balance • proportion (symmetry and asymmetry) • harmony • contrast • pattern • movement • rhythm • unity • style • focus • scale • dominant • sub-dominant • subordinate relationship • emphasis • proximity • alignment • space

- anthropometry
 - ergonomics
 - arrangement
 - workload materials handling capacity
 - skills available
 - equipment capabilities
 - aesthetic relations
 - tension
 - development methods
- Modifications include:**
- alterations to the original prototype concept to achieve better balance, proportion or aesthetic value
- Records and reports include:**
- design and production method
 - product type and size
 - inspection and labelling outcomes
 - storage locations
 - quality outcomes
 - hazards, incidents or equipment malfunctions
- 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

Supersedes and is equivalent to LMFFDT4005A Construct and evaluate furniture prototypes and samples

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 MSFFDT4005 Construct and evaluate furniture prototypes and samples

Modification History

Release 1 - New unit of competency

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
- Construct a prototype or sample in accordance with the design brief and concept sketches and drawings
- Apply design elements and principles to develop a prototype in accordance with a the design brief
- 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 the full range of processes for the construction of prototypes and samples
- Organisational and site standards, requirements, policies and procedures for constructing prototypes and samples
- Environmental protection requirements
- Established communication channels and protocols
- Relevant problem identification and resolution

- Elements and principles of design
- Ergonomics and aesthetic values
- Types of tools and equipment and procedures for their safe use, operation and maintenance
- Characteristics of materials, products and defects
- Set-up and operation of equipment
- Design and other relevant computer programs
- Product assembly techniques
- Sketching and drawing
- Storage systems and labelling
- Procedures for the recording, reporting and maintenance of workplace records and information
- Appropriate mathematical procedures for estimation and measurement

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 materials, equipment and specifications relevant to constructing a prototype or sample.

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