



Australian Government

MSFFDT4011 Research and select furniture materials and technology

Release: 1

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Modification History

Release 1 - New unit of competency

Application

This unit of competency covers researching and selecting furniture materials and technologies in order to meet design requirements, including for traditional, new and emerging materials and technologies.

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 material research	1.1	Applicable work health and safety (WHS), legislative and organisational requirements relevant to researching and recommending materials are verified and complied with
		1.2	Design brief is reviewed, confirmed and clarified with appropriate personnel
		1.3	Communication with others is established and maintained in accordance with WHS requirements
		1.4	Client requirements and desires are reviewed, confirmed and clarified
2	Research materials	2.1	Aesthetic requirements of the material are assessed
		2.2	New material technologies are researched and reported

		2.3	Tactile requirements of the material in relation to the design is researched
		2.4	Manufacturing processes and available expertise for the desired material are assessed
		2.5	Costs of materials are assessed and compared
		2.6	Environmental impact of materials are assessed
		2.7	Longevity and restorability of materials are researched
		2.8	Hazards associated with the use and application of materials, including handling, are researched
		2.9	Quality of materials are assessed and reported
3	Select materials	3.1	Research information is critically analysed in the context of the design brief requirements
		3.2	Materials and their elements of design are promoted, research explained and evaluated for the client
		3.3	Materials and their principles of design are promoted, research explained and evaluated for the client
		3.4	Presentation of research information is made highlighting the findings and rationale for the materials chosen
4	Research furniture making technology	4.1	Information sources on traditional, new and emerging technologies used in the production of furniture are identified and assessed for usefulness
		4.2	Traditional furniture making technologies are identified and their application analysed to determine advantages and disadvantages
		4.3	New and emerging technologies are identified and analysed for relevance in furniture designs
		4.4	Environmental and safety aspects of technologies are identified and implications for use assessed
		4.5	Information is collected and stored for future use
5	Select technology for furniture	5.1	Research information is critically analysed in the context of the design brief requirements
		5.2	The relevance of technology to specific design solutions

is determined and technology selected

- 5.3 Presentation of research information is made highlighting the findings and rationale for the technology chosen

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
Clients include:	• suppliers • manufacturers • private clients • colleagues • retailers • the public
Aesthetics include:	• consideration of appeal to a large number of people; products are pleasing to the eye of many who view it
Materials include:	• solid timber (native and imported) • manufactured timber products • reconstituted products • composite materials • plastic • metal • alloys • stone-based products • glass • textiles • fibreglass • foam • synthetics • cardboard • paper products • any other manipulable substance
Tactile includes:	• that perceived by the sense of touch producing the effect of three-dimensional depth
Manufacturing processes include:	• the methods by which the product will be produced, these steps entail working from working drawings and specifications, producing components utilising machine operations, assembly of the components and finishing techniques
Environmental impacts include:	• how the making and use of finishes effects the environment and how its continued use will affect those in the area • energy consumption in applying the material • greenhouse gases created • waste levels and resource utilisation

	• what impact will be felt by reducing or stopping use of the finish
Longevity and restorability include:	• an analysis of how long the finish is expected to last, while maintaining quality of aesthetic value and how readily the finish can be upgraded, repaired or replaced
Hazards include:	• overweight loads • bowing or cupping material causing collapse • materials handling incidents • splinters • chips or fragments being lodged in the hands or eyes
Critical analysis includes:	• comparing • contrasting • reflecting • critiquing • considering merit • discussion • debate
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
Technology and manufacturing processes include:	• volume and custom production processes • computer-aided design (CAD) software programs • digital design tools • machinery • tools • manufacturing techniques • laser cutting • water jet cutting • computer numerically controlled (CNC) router cutting • foundries and casting • soft furnishing technology
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 LMFFDT4014A Research and select furniture materials and technology

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 MSFFDT4011 Research and select furniture materials and technology

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
- Research and select materials and technology to assist with informing the design process and arrive at a solution which meets client requirements
- Apply design elements and principles to the research and selection of materials and technology in accordance with the concepts and 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 researching and recommending materials
- Organisational and site standards, requirements, policies and procedures for researching and recommending materials
- Elements and principles of design
- Aesthetic values

- Types of tools and equipment and procedures for their safe use, operation and maintenance
- Characteristics of materials, products and defects
- Relevant computer programs
- Materials and technology research techniques
- Material types and manufacturing processes
- Technologies used in furniture production
- Storage systems and labelling
- Procedures for the recording, reporting and maintenance of workplace records and information
- Appropriate mathematical procedures for estimation and measurement
- 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 materials and equipment relevant to researching and recommending materials and specifications

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