



Australian Government

MSFFDT5012 Design for mass production

Release: 1

MSFFDT5012 Design for mass production

Modification History

Release 1 - New unit of competency

Application

This unit of competency covers designing products for mass production specifying equipment requirements and personnel capabilities, while also considering cost-effective opportunities and future planning considerations. It applies to mass production in an industry workplace or design studio environment and involves application of skills and knowledge at a managerial level.

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 design	1.1	Applicable work health and safety (WHS), legislative and organisational requirements relevant to designing for mass production are verified and complied with
		1.2	Design brief is reviewed, confirmed and clarified with appropriate personnel
		1.3	Client requirements and desires are reviewed, confirmed and clarified
		1.4	Communication with others is established and maintained in accordance with WHS requirements
		1.5	Problems or underlying factors to be addressed by the design brief are verified

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| | | 1.6 | Elements of design are diagnosed for the intended design brief |
| | | 1.7 | Principles of design are diagnosed for the intended design brief |
| | | 1.8 | Volumes of mass production runs are set, costed and relevance to the market evaluated |
| 2 | Design for mass production | 2.1 | Concepts for the proposed solution to the design brief are reviewed in accordance with mass production requirements |
| | | 2.2 | Different solutions to satisfy the requirements of the design brief are presented and reviewed |
| | | 2.3 | Sample maquette and prototype are reviewed in accordance with the concept sketches |
| | | 2.4 | Final working drawings and specifications are reviewed and compiled in readiness for mass production |
| | | 2.5 | Concept is designed for mass manufacture taking into account available equipment and resources |
| | | 2.6 | Equipment capabilities are reviewed and assessed and design brief modified in accordance with available or obtainable equipment |
| | | 2.7 | Personnel capabilities are reviewed and assessed and design brief modified in accordance with assessed and available skills |
| | | 2.8 | Material or resource supply chain to the company is assessed, stock sizes set and design brief modified or altered to cater for availability of resources |
| | | 2.9 | Outsourcing opportunities are assessed and reviewed in accordance with cost-benefit analysis assigning monetary value to the costs and benefits (social, environmental and monetary) associated with a project for the purpose of selecting and evaluating project investment opportunities |
| | | 2.10 | Work flow methods are reviewed and the design brief or work flow methods amended to cater for mass production |
| | | 2.11 | Opportunities for innovation in mass production |

			procedures are researched and implemented
3	Implement design	3.1	Manufacturing process is planned and organised taking into account available equipment and resources
		3.2	Material is processed in accordance with the manufacturing plan and safe working procedures
		3.3	Jigs are produced to assist with the manufacture of components
		3.4	Components are produced and prepared for assembly
		3.5	Components are assembled in accordance with the working drawings
		3.6	Final product is finished according to specifications
		3.7	Final product is evaluated for functionality and aesthetic appeal
		3.8	Mass production methodology is reviewed
		3.9	Production run products are packaged and despatched to transport methods
		3.10	Mass production anomalies 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

Unit Mapping Information

Supersedes and is equivalent to LMFFDT6002A Design for mass production

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 MSFFDT5012 Design for mass production

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Performance Evidence

- Apply safe handling requirements for equipment, products and materials, including use of personal protective equipment
- 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
- Apply research, analytical and mathematical skills to the identification and selection of materials and the selection of appropriate production and construction techniques for products
- Create innovative designs which satisfy the agreed parameters and consider but are not limited by other historical or contemporary influences
- Prepare and work through a design brief taking into account the requirements of mass production to fulfil the design brief and oversee a mass production run
- Review information provided and creatively generate proposals for a furnishing product
- Apply design elements and principles to designing for mass production in accordance with a design brief
- Use mathematical ideas and techniques to correctly complete calculations for design assessment
- 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 designing for mass production
- Organisational and site standards, requirements, policies and procedures for designing for mass production

- Environmental protection requirements
- Established communication channels and protocols
- Relevant problem identification and resolution
- Elements and principles of design
- Ergonomics and aesthetic values
- Supply chain management
- Outsourcing arrangements
- Cost-benefit analysis methods
- Company resource audit techniques
- Design and manufacture for mass production
- 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 furniture making equipment
- Relevant computer programs
- Furniture product machining, assembly and finishing techniques
- Sketching and drawing techniques
- 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 specifications, materials and equipment relevant to designing for mass production.

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