



Australian Government

MSFFDT5002 Assess and resolve technical integrity of a design

Release: 1

MSFFDT5002 Assess and resolve technical integrity of a design

Modification History

Release 1 - New unit of competency

Application

This unit of competency covers assessing and resolving technical integrity of a design for a product using fundamental design elements and principles in an industry workplace or design studio environment. It involves application of skills and knowledge at a paraprofessional 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	Prepare for assessment	1.1	Applicable work health and safety (WHS), legislative and organisational requirements relevant to assessing and resolving technical integrity of a design 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
		1.4	Problems or underlying factors being addressed by the design brief are verified
		1.5	Client requirements and desires are reviewed, confirmed and clarified

		1.6	Elements of design are assessed for the intended outcome
		1.7	Principles of design are assessed for the intended outcome
2	Assess technical integrity	2.1	Requirements of the brief are prioritised and assessed for conflicts
		2.2	Integrity of a design is tested for structural and ergonomic compliance
		2.3	Mechanical strength and stress points of a design are evaluated and reported
		2.4	Success and failure points of a design are analysed and reviewed
		2.5	Distinctive and strong points of a design are highlighted and recorded
		2.6	Level of innovation and technical merit of a design is assessed and recorded
3	Resolve technical integrity	3.1	Most suitable materials, equipment and manufacturing processes to resolve the technical faults of a brief are assessed to comply with the requirements
		3.2	Alternative design solutions for a technical failure are researched and instigated
		3.3	Restoration of existing designs are considered and acted upon for viable cases
		3.4	Final documentation outlining the full analysis of the design brief is compiled and produced as a report

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.

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|---------------------------------------|---|
| Unit context includes: | <ul style="list-style-type: none">• 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: | <ul style="list-style-type: none">• 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: | <ul style="list-style-type: none">• trainers• supervisors• suppliers• clients• colleagues• managers |
| Clients include: | <ul style="list-style-type: none">• suppliers• manufacturers• private clients• colleagues• retailers• the public |
| Elements of design include: | <ul style="list-style-type: none">• line• shape• form (geometric or organic) |

Principles of design include:	• texture • colour • function • 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
Structural includes:	• construction methods for all or parts of a designed product which are not intended to fail under regular and continual use
Ergonomics include:	• the study of the efficiency of persons in their working environment
Mechanical strength includes:	• the strength of parts or joints under the pressure of operation in general usage situations
Materials include:	• timber (native and imported) • man-made timber products • plastic • metal

	• alloys • stone • glass • textiles • fibreglass • foam • cardboard • paper products • any other manipulable substance
Equipment includes:	• hand tools • static machinery • portable power tools and computer numerically controlled (CNC) equipment • and also includes procedures for lock out protecting operators and co-workers from accidental injury by isolating the machine from the power source
Manufacturing processes include:	• the methods by which the product will be produced, these steps usually entail working from working drawings and specifications, producing components utilising machine operations, assembly of the components and finishing techniques
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 LMFFDT5003A Assess and resolve technical integrity of a design

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 MSFFDT5002 Assess and resolve technical integrity of a design

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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
- Apply design elements and principles to assess and resolve technical integrity of a design, working through the design process, assessing the requirements and recording the intended resolution
- Produce a report on the intended resolution as a result of assessing and resolving technical integrity of a design
- 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 assessing and resolving technical integrity of a design
- organisational and site standards, requirements, policies and procedures for assessing and resolving technical integrity of a design
- Environmental protection requirements
- Established communication channels and protocols

- Relevant design integrity problem identification and resolution
- Elements and principles of design
- Technical integrity of design
- Ergonomics and aesthetic values
- Types of tools, equipment and procedures for their safe use, operation and maintenance
- Characteristics of materials, products and defects
- Relevant computer programs
- Product assembly techniques and equipment capabilities
- Sketching and drawing techniques
- 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 assessing and resolving technical integrity of a design.

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