



Australian Government

Department of Education, Employment and Workplace Relations

LMTGN5011A Develop and test textile, clothing and footwear products or processes

Revision Number: 1

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Modification History

Not applicable.

Unit Descriptor

Unit descriptor This unit covers the skills and knowledge required to develop and test a textiles, clothing and footwear (TCF) product or process to achieve required specifications.

Application of the Unit

Application of the Unit

The unit applies to the development of a new product or production process or the significant modification of an established product or process to meet design and quality specifications. Routine or non-routine testing procedures must be implemented to test that the development achieves specifications. This unit may involve the development and testing of a prototype or sample product or the design of a manufacturing process or production equipment. Work may be conducted in small to large scale enterprises and may involve individual and team activities.

The application of this unit is according to OHS practices of the enterprise and workplace practices, which may include:

- requirements prescribed by legislation, awards, agreements and conditions of employment
- standard operating procedures
- work instructions
- oral, written and visual communication
- quality practices, including responsibility for maintenance of own work quality and contribution to quality improvement of team or section output
- housekeeping
- tasks related to environmental protection, waste disposal, pollution control and recycling

This unit requires the application of skills associated with initiative and enterprise, problem solving and planning and organising to examine and test development opportunities. Communication skills will be used to examine specifications, analyse data and research information, perform calculations and prepare and discuss development concepts and findings. Learning skills are also used to gather, test and apply new information.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisites LMTTX4003A

Employability Skills Information

Employability Skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Interpret development specifications	1.1 Development need and <i>parameters</i> are interpreted 1.2 Quality specifications appropriate to the TCF product or process are obtained and interpreted correctly from data sheets, production schedules process specifications or the client 1.3 Design specifications appropriate to the TCF product or process are obtained and interpreted correctly from data sheets, production schedules process specifications or the client 1.4 Specifications applying to <i>TCF materials</i> or <i>TCF production processes</i> are interpreted 1.5 Terminology used in the TCF industry relating to raw materials and processing are correctly interpreted, applied and used 1.6 Clarification of specifications is undertaken as required using appropriate information resources
2 Develop TCF product or process design	2.1 Research is conducted to identify development options and examine relevancy for specific TCF application 2.2 Preliminary design is developed to explore options with <i>key personnel</i> 2.3 Feedback is used to reassess ideas and produce detailed design concept according to required specifications 2.4 Materials, processes, equipment and other required elements are specified and documented in design 2.5 <i>Calculations</i> are undertaken as required and verified as correct 2.6 Risk analysis is conducted to identify possible problems and contingency plans are developed 2.7 Issues to assess feasibility of design are identified and noted for testing 2.8 Strengths and weaknesses of design are identified and noted for testing
3 Test design concept	3.1 <i>Appropriate processes</i> are determined to test the design concept in a TCF context including testing of materials, processes and specifications 3.2 <i>Calculations</i> to determine test time, volume, temperatures, etc are undertaken and accurately documented 3.3 <i>Test procedures and specifications</i> are developed 3.4 <i>Test equipment, tools and materials</i> and work area are selected and prepared according to test specifications 3.5 Test is undertaken following test procedures and according to <i>OHS practices</i> . 3.6 Test process is monitored to ensure compliance to test specifications. 3.7 All deviations from test procedures are documented and cause identified. 3.8 Test equipment, tools and materials used during test are cleaned

ELEMENT	PERFORMANCE CRITERIA
	and restored in safe manner
4 Interpret and document test results	<ul style="list-style-type: none">4.1 Test results are obtained, documented and recorded in accordance with test specifications.4.2 Test results are validated and checked4.3 Test results are discussed with key personnel for validation and interpretation.4.4 Test results and new information is examined and implications for product or process identified.
5 Confirm design	<ul style="list-style-type: none">5.1 Information from development and testing of TCF product or process is used to modify and improve design specifications5.2 Test results are used to adjust manufacturing process or identify suitable TCF materials5.3 Improved design and specifications are documented.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level

Demonstrates knowledge of:

- textile industry terminology
- international and Australian specification standards
- TCF production processes
- TCF products and materials
- systems and formula used in textile calculations
- routine and non-routine TCF tests
- TCF test equipment and tools
- test materials
- quality practices
- workplace practices
- practices for recording and reporting
- OHS practices and procedures

Demonstrates skills to:

- recognise, rectify and report deviations from specifications
- read, interpret and follow specification information, standard operating procedures and work instructions, and other reference material
- assemble and use test equipment
- implement TCF test procedures
- maintain accurate records
- communicate within the workplace
- sequence operations
- clarify and check task-related information
- carry out work according to OHS practices

Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.

Critical aspects of evidence	Demonstrates skills and knowledge to: <ul style="list-style-type: none">• interpret specifications relevant to TCF products and processes• develop TCF design specifications• determine and apply test parameters and procedures• select and apply correct calculations• record test procedures and outcomes accurately• apply OHS practices in work operations
Consistency in performance	Consistently applies skills and knowledge when: <ul style="list-style-type: none">• organising work• completing tasks• working systematically with attention to accuracy• identifying improvements and avoiding damage• using workplace practices• using OHS practices• recording procedure• recording and reporting accidents and incidents• recognising and adapting to cultural differences in the workplace, including modes of behaviour and interactions
Resource implications	Access is required to real or appropriately simulated situations, including work areas, materials and equipment on workplace practices and OHS practices.
Context for assessment	Assessment may occur on the job or in an appropriately simulated environment
Interdependent assessment	This unit may be assessed independently or in combination with other relevant units.

Range Statement

RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the Performance Criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Legislative/regulatory requirements All work must comply with relevant Federal and State or Territory legislative or regulatory requirements.

Parameters may include:

- cost
- timing
- location
- material use
- product function
- product performance
- special features

TCF production process may include:

- design
- weaving
- knitting
- washing
- bleaching
- dyeing
- tufting
- assembly
- finishing
- printing

TCF materials may include:

- fibres
- yarns
- fabrics
- dyes and chemicals
- leather
- technical textiles

Calculations may include:

- percentage
- volumes
- mass

Key personnel may include:

- supervisors
- team leaders
- trainers
- engineers
- textile mechanics
- production personnel

Appropriate processes	<ul style="list-style-type: none">• design personnel• quality personnel• sales and marketing personnel• development of a prototype• development of a sample• demonstration• routine tests• non-routine tests
OHS practices	<p>OHS practices include hazard identification and control, risk assessment and implementation of risk reduction measures specific to the tasks described by this unit, and may relate to:</p> <ul style="list-style-type: none">• manual handling techniques• standard operating procedures• personal protective equipment• safe materials handling• taking of rest breaks• ergonomic arrangement of workplaces• following marked walkways• safe storage of equipment• housekeeping• reporting accidents and incidents• environmental practices

Unit Sector(s)

Sector All