



Australian Government

Department of Education, Employment and Workplace Relations

LMTTX4002A Understand and apply textile science

Revision Number: 1

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Modification History

Not applicable.

Unit Descriptor

Unit descriptor This unit covers the understanding and knowledge required to use and apply knowledge of the physical and chemical properties of textiles in processing applications.

Application of the Unit

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The application of this unit is to apply the knowledge and understanding of the physical and chemical properties of textiles and associated materials to the design, treatment and processing of textile materials. This includes the resultant effects on and behaviours of materials when subjected to various treatments including washing, drying and curing, dyeing, printing, finishing using chemical and mechanical means, heating, stretching, cutting, spinning, weaving, stitching, water proofing, flame proofing, colouring, printing, etc.

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 and problem solving in identifying textile properties and determining effects from textile processing. Learning skills will be used to interpret and apply new information and communication skills will also be used to interpret specifications and technical information.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisites LMTTX2001B
 LMTTX3001B

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 Identify the physical and chemical properties of textiles materials	1.1 The <i>textile material</i> is identified using <i>specifications</i> , work sheets or documentation
	1.2 Unknown textile material is referred to <i>appropriate personnel</i> for identification
	1.3 The <i>physical properties</i> of the textile material are identified using product specifications, work sheets or documentation and research techniques
	1.4 The <i>chemical properties</i> of the textiles or textile material are identified using product specifications, work sheets or documentation and research techniques
	1.5 Where required, standard tests are undertaken according to <i>OHS practices</i> to establish or validate physical and chemical properties
2 Determine effects of textile processes	2.1 The characteristics and effect of physical properties on textiles are identified
	2.2 The characteristics and effect of chemical properties on textiles are identified
	2.3 The effects of <i>textile processing</i> on textile materials are identified
	2.4 The behavior or impact of textile processing on the physical and chemical properties of textile materials is determined
	2.5 Where required, standard tests are undertaken to establish or validate effects of textile processing

Required Skills and Knowledge

This describes the essential skills and knowledge and their level, required for this unit.

Demonstrates knowledge of:

- textile industry terminology
- physical properties of textiles and associated materials
- chemical properties of textiles and associated materials
- standard textile processing techniques
- proofing techniques (eg water, flame)
- standard textile test procedures
- textile test equipment
- international, Australian or workplace specification standards
- quality practices
- workplace practices
- practices for recording and reporting
- production processes
- enterprise lines of authority

Demonstrates skills to:

- read, interpret and follow specification information, standard operating procedures and work instructions, and other reference material
- undertake textile tests
- identify specification information
- recognise, rectify and report deviations from specifications
- 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">• identify relevant textile processes and production procedures• identify physical and chemical properties of textile materials and the effects of textile processing on these properties• determine potential impact of textile processes and production procedures on textiles and associated materials• interpret impact of textile processes and production procedures on textiles and associated materials accurately• apply OHS practices in work operations
Consistency in performance	Consistently applies skills and knowledge when: <ul style="list-style-type: none">• organising work• working systematically with attention to detail• identifying unacceptable deviations in production results• identifying improvements and avoiding damage• using workplace practices• using OHS practices• 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, and to information 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.

Textile materials may include

- fibre (natural and Man made)
- yarns
- fabrics

Specifications may include

- shape
- length
- strength
- contour
- shrinkage
- weight or mass
- colour change, staining
- chemical concentration

Textile physical properties may include

- weight or mass
- density
- length
- strength
- moisture content

Textile chemical properties may include

- fat content
- chemical concentrations

Appropriate authorities may include

- supervisors
- managers
- trainers
- machine manual

Resources and search techniques may include

- standard operating procedures, safety procedures, job lists, manufacturer manuals, specifications, textile production patterns and machine settings, Australian and International Standards, trade journals, quality system documentation customer requirements, workplace and site procedures and manuals, industry manuals, codes of practice, awards, legislation, plans, diagrams, log books
- hard copy or electronic data
- key personnel, supervisors, trainers, colleagues

- using index, table of contents, numbering and classification systems, etc.
- computer database search or look-up, questioning, cross-referencing
- basic techniques to identify relevant information including scanning

OHS practices

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:

- 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

Textile processing may include

- production processes
- dyeing, colouration
- special treatment or finishing
- printing
- use in textile products

Unit Sector(s)**Sector**

Textile Production