



Australian Government

MSTTN2006 Identify purpose and performance outcomes of technical textile product

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to LMTTN2006B Identify purpose and performance outcomes of technical textile product

Application

This unit of competency covers the skills and knowledge required to identify the purpose and desired performance characteristics of a technical textile or non-woven product.

The unit of competency applies to the identification of the purpose and performance characteristics of textiles that have been manufactured for special technical purposes. A technical textile may be produced by a technical finish on a normal yarn or fabric or composed of a specially made technical yarn or fabric.

The unit of competency applies to employees who are required to have a basic understanding of the product being manufactured, such as team leaders and senior operators with responsibility for explaining the enterprise's products to visitors and other employees. The unit does not cover knowledge of the technical textile requiring special scientific or engineering study.

A technical textile is generally not clothing, carpet or a furnishing product unless a specific technical feature beyond what is normally found in clothing, carpet or furnishing has been added. An example would be special fire-retardant clothing.

Applications of technical textiles may be for medical, hygiene, sporting, transportation, construction, agricultural and other purposes. The technical textile may be used as a stand-alone product or incorporated into another product. The technical textile application may occur as a result of new materials, new processes and new applications that result in the textile having the desired technical performance characteristic.

Work may be conducted in small to large scale enterprises and may involve individual and team activities.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

MSTTN2003 Use basic recognition techniques to identify technical and non-woven textiles

Competency Field

Technical textiles and non-wovens

Unit Sector

Not applicable

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1	Identify purpose and performance of technical textile	1.1	Identify a range of applications for technical textiles
		1.2	Identify the technical purpose of technical textiles
		1.3	Identify industry and commercial applications of technical textiles
		1.4	Identify performance features of technical textiles and special conditions of use
		1.5	Identify performance or quality standards relating to technical textiles
2	Identify process used to generate technical textile performance features	2.1	Identify manufacturing process of technical textile products
		2.2	Identify the impact of quality on production processes
		2.3	Identify testing procedures used to assess quality or performance of technical textile products

Foundation Skills

This section describes those required skills (language, literacy and numeracy) that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for 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.

Workplace procedures include • requirements prescribed by legislation, awards,

one or more of the following:

- agreements and conditions of employment
- standard operating procedures (SOPs)
- 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
- WHS practices

Australian Standards include:

- the relevant industry or Australian Standards that are current at the time this unit is being undertaken

Applications industries and sectors include one or more of the following:

- transport
- industrial products and components
- medical and hygiene products
- domestic equipment and furnishing (e.g. fibrefill and insulation applications)
- clothing components (e.g. threads and interlinings)
- agriculture, horticulture and fishing
- construction and engineering
- packaging and containment
- sport and leisure equipment and performance fabric and clothing
- geo-textiles
- protective and safety clothing and textiles
- monofilament fibres for computer technologies

Technical effects include one or more of the following:

- abrasion resistance
- low or high permeability to gases and liquids
- flame retardant
- low flammability
- resistance to chemicals
- protection against sunlight caused weathering
- oxidation resistance
- fire resistance or protection
- water-repellent finish
- anti-static finish
- anti-microbial and anti-fungal property

- non-shrink properties
- electrical conductivity or insulation
- phase change as in fibres that can alter according to external conditions such as temperature
- conversion of light to heat
- bio compatibility
- digital operations

Processes include one or more of the following:

- plaiting
- knotting
- weaving
- warp and weft knitting
- stitchbonding
- braiding
- dry laid and spun bond non-woven manufacturing
- calendering
- raising
- cropping
- compressive shrinking
- heat setting
- coating
- laminating
- fusing

Tests include one or more of the following:

- visual checking
- colour matching
- weighing
- dimensional measuring
- tests for moisture, stretch, gloss, texture, handle, tensile strength, stability, shrinkage, stretch and permeability
- results of calendaring
- application of surface finishes
- tests on raw materials, including fibres and yarns, intermediate and final fabrics

Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a203ec5c-de7d-406b-b3e1-8f1a9b76e92e>

Assessment Requirements for MSTTN2006 Identify purpose and performance outcomes of technical textile product

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria, and include:

- reading and following work instructions, standard operating procedures (SOPs), safe work practices and other reference material
- applying relevant standards
- identifying at least five (5) application areas for technical textiles
- identifying primary purpose and intended performance of at least two (2) technical textiles
- identifying manufacturing process for at least two (2) technical textiles
- identifying quality specifications of at least two (2) technical textiles
- identifying at least two (2) testing procedures used to assess quality or performance of technical textile
- applying workplace procedures.

Knowledge Evidence

Evidence must be provided that demonstrates knowledge of:

- safe work practices and procedures and use of personal protective equipment (PPE)
- relevant Australian Standards
- purpose, manufacturing process and performance characteristics of technical textiles
- process:
 - plaiting
 - knotting
 - weaving
 - warp and weft knitting
 - stitchbonding
 - braiding
 - dry laid and spun bond non-woven manufacturing
 - calendering
 - raising
 - cropping
 - compressive shrinking
 - heat setting

- coating
- laminating
- fusing
- technical effects:
 - abrasion resistance
 - low or high permeability to gases and liquids
 - flame retardant
 - low flammability
 - resistance to chemicals
 - protection against sunlight caused weathering
 - oxidation resistance
 - fire resistance or protection
 - water-repellent finish
 - anti-static finish
 - anti-microbial and anti-fungal property
 - non-shrink properties
 - electrical conductivity or insulation
 - phase change as in fibres that can alter according to external conditions, such as temperature
 - conversion of light to heat
 - bio compatibility
 - digital operations
- different methods of production for technical textiles
- range of applications for technical textiles:
 - medical
 - hygiene
 - sporting
 - transportation
 - construction
 - agricultural
 - other purposes
- WHS practices, including hazard identification and control measures
- quality practices
- workplace procedures.

Assessment Conditions

- Assessors must:
 - satisfy the assessor competency requirements that are in place at the time of the assessment, as set by the VET regulator

- have vocational competency in identifying purpose and performance outcomes of technical textile product, at least to the level being assessed, with relevant industry knowledge and experience.
- Assessment should occur in operational workplace situations. Where this is not possible, or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment reflecting realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications associated with this unit.

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