



Australian Government

MSTTX4002 Understand and apply textile science

Release: 2

MSTTX4002 Understand and apply textile science

Modification History

Release 2. Supersedes and is equivalent to MSTTX4002 Understand and apply textile science (Release 1).

Pre-requisite unit, MSTGN2011 Identify fibres, fabrics and textiles used in the TCF industry, is **superseded by** MSTGN2013 Identify fibres, fabrics and textiles used in the TCF industry.

Release 1. Supersedes and is equivalent to LMTTX4002A Understand and apply textile science.

Application

This unit of competency covers knowledge of the physical and chemical properties of textiles in processing applications.

This unit of competency applies to using knowledge and understanding of the physical and chemical properties of textiles and associated materials to design, treat and process textile materials. This includes the resultant effects on, and behaviours of, materials when subjected to various treatments.

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

MSTGN2013 Identify fibres, fabrics and textiles used in the TCF industry

MSTTX3001 Identify quality and types of textile fibres, yarns and fabrics

Competency Field

Textile production

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 | Determine job requirements | 1.1 | Follow standard operating procedures (SOPs) |
| | | 1.2 | Comply with work health and safety (WHS) requirements at all times |
| | | 1.3 | Use appropriate personal protective equipment (PPE) in accordance with standard operating procedures |
| | | 1.4 | Identify job requirements from specifications, drawings, job sheets or work instructions |
| | | | |
| 2 | Identify the physical and chemical properties of textile materials | 2.1 | Identify textile materials using specifications, work sheets or documentation |
| | | 2.2 | Seek advice from appropriate personnel to identify unknown textile material |
| | | 2.3 | Identify the physical properties of the textile material using product specifications, worksheets or documentation and research techniques |
| | | 2.4 | Identify the chemical properties of the textiles or textile material using product specifications, worksheets or documentation and research techniques |
| | | 2.5 | Undertake standard tests to establish or validate physical and chemical properties of textiles, where required |
| | | | |
| 3 | Determine effects of textile processes | 3.1 | Identify the characteristics and effect of physical and chemical properties on textiles |
| | | 3.2 | Identify the effects of treatment and textile processing on textile materials |
| | | 3.3 | Determine the behaviour or impact of treatment and textile processing on the physical and chemical properties of textile materials |
| | | 3.4 | Undertake standard tests to establish or validate effects of treatment and textile processing, where required |

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 one or more of the following:**
- requirements prescribed by legislation, awards, agreements and conditions of employment
 - SOPs
 - work instructions
 - PPE
 - 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

- Textile materials include the following:**
- fibre (natural and man-made)
 - yarns
 - fabrics

- Specifications include one or more of the following:**
- shape
 - length
 - strength
 - contour
 - shrinkage
 - weight or mass

- colour change and staining
- chemical concentration

Appropriate authorities include one or more of the following:

- supervisors
- managers
- trainers
- machine manual

Resources and search techniques include one or more of the following:

- SOPs
- safety procedures
- job lists
- manufacturer manuals
- specifications
- textile production patterns and machine settings
- international and Australian 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 and colleagues
- using index, table of contents, and numbering and classification systems
- computer database search or look-up, questioning and cross-referencing
- basic techniques to identify relevant information, including skimming and scanning, and identifying key words and ideas

Treatments include one or more of the following:

- washing
- drying and curing
- dying
- printing
- finishing using chemical and mechanical means

- heating
- stretching
- cutting
- spinning
- weaving
- stitching
- water proofing
- flame proofing
- colouring

Unit Mapping Information

Release 2. Supersedes and is equivalent to MSTTX4002 Understand and apply textile science (Release 1).

Release 1. Supersedes and is equivalent to LMTTX4002A Understand and apply textile science.

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 MSTTX4002 Understand and apply textile science

Modification History

Release 2. Supersedes and is equivalent to MSTTX4002 Understand and apply textile science (Release 1).

Pre-requisite unit, MSTGN2011 Identify fibres, fabrics and textiles used in the TCF industry, is **superseded by** MSTGN2013 Identify fibres, fabrics and textiles used in the TCF industry.

Release 1. Supersedes and is equivalent to LMTTX4002A Understand and apply textile science.

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
- applying relevant standards
- identifying relevant textile processes and production procedures
- identifying physical and chemical properties of at least two (2) textile materials and the effects of textile processing on these properties
- determining potential impact of textile processes and production procedures on textiles and associated materials
- interpreting impact of textile processes and production procedures on textiles and associated materials accurately
- conducting tests to determine effects of textile processing, as required
- applying workplace procedures
- maintaining accurate records.

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
- textile industry terminology
- physical properties of textiles and associated materials
- chemical properties of textiles and associated materials:
 - fat content
 - chemical concentrations
- physical properties of textiles and other materials:
 - weight or mass

- density
- length
- strength
- moisture content
- standard textile treatments and processing techniques:
 - various production processes
 - dyeing and colouration
 - special treatment or finishing
 - printing
 - use in textile products
- proofing techniques (e.g. water and flame)
- standard textile test procedures
- textile test equipment
- international or workplace specification standards
- quality criteria
- quality practices
- production processes
- enterprise lines of authority
- workplace procedures
- recording and reporting practices.

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 applying textile science, 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.

Links

Companion Volume implementation guides are found in VETNet -

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