



Australian Government

MSTTF3005 Apply lofting skills to sail making

Release: 1

MSTTF3005 Apply lofting skills to sail making

Modification History

Release 1. Supersedes and is equivalent to LMTTF3005A Apply lofting skills to sail making

Application

This unit of competency covers the skills and knowledge required to reproduce design lines onto sail cloth using manual techniques, for the purpose of sail making.

The unit of competency applies to a traditional sail making technique that does not require the use of computerised equipment.

The unit of competency applies to the laying out of sail cloth on a floor and reproducing in full scale, the 'line drawings' and 'table of offsets' supplied by the sail designer onto the fabric in order to achieve a pattern with a 3-D outcome.

Work may involve interaction with other people in the workplace, including supervisors and production personnel or sail designers.

Work may be conducted in small to large scale enterprises and may involve individual and team activities. Work is performed within defined procedures under supervision of the sail designer.

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

Pre-requisite Unit

Nil

Competency Field

Textile fabrication

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 SOPs |
| | | 1.4 | Identify job requirements from specifications, drawings, job sheets or work instructions |
| 2 | Interpret lofting requirements | 2.1 | Access sail design specifications and identify sail type |
| | | 2.2 | Interpret design lines and table of offsets correctly, and identify sail features |
| | | 2.3 | Identify lay-up specifications of sail cloth and determine amount of floor space is required to lay out sailcloth |
| | | 2.4 | Select and set up equipment needed for lofting according to workplace procedures |
| | | 2.5 | Determine steps in lofting processes and sequence for maximum productivity |
| 3 | Lay out sail cloth | 3.1 | Clean loft floor and check for foreign objects |
| | | 3.2 | Lay out sail cloth correctly using proper handling techniques, according to WHS practices |
| | | 3.3 | Check sail cloth for faults or inconsistencies and take appropriate action |
| | | 3.4 | Check directional and topside layout of sail cloth, according to fabric cutting requirements and design specifications |
| | | 3.5 | Brace sail cloth to the loft floor using appropriate method |
| 4 | Create lofted lines | 4.1 | Determine and create straight baseline using appropriate baseline marker |
| | | 4.2 | Measure grid and line markings from line drawings and mark onto sail cloth square to the baseline |
| | | 4.3 | Draw profile lines correctly |
| | | 4.4 | Draw pattern from lofted lines directly onto sail cloth, |

with accurate allowances made for seams, joins, reinforced edges and other design features

- | | | | |
|---|---------------------------------|-----|--|
| 5 | Complete lofting process | 5.1 | Check pattern markings for accuracy of 3-D outcome against design specifications |
| | | 5.2 | Identify faults in marking and record and correct inconsistencies with design specifications, if possible |
| | | 5.3 | Label, fold, pack and load completed work correctly and transfer to next area for cutting, where appropriate |
| | | 5.4 | Complete housekeeping and required documentation |

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
- 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

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

include:**Sail types include one or more of the following:**

- one design
- cruising
- cruiser and racing
- racing yacht
- sails for a range of boat sizes

Equipment includes one or more of the following:

- marking chalk, tape, or other suitable implement for marking lines onto sail cloth
- measuring tools
- bracing materials
- baseline marker
- calculator
- specifications charts
- relevant plans and design drawings

Lay-up includes the following:

- cross-cut, radial and membrane panel layouts

Sail features include one or more of the following:

- luff curves
- roach profiles
- leech hollows
- foot rounds
- marking reef points
- batten pockets
- openings
- inserts
- gussets
- reinforcing
- attachments

Sail cloth includes one or more of the following:

- dacron
- nylon
- vinyl
- canvas
- wovens
- spinnaker
- laminet
- composite sailcloth

Required documentation includes the following:

- record of inconsistencies or faults
- record of adhesives, materials and processes used
- instructions for finishing
- time and date
- labelling
- packing or transfer information

WHS practices

WHS practices include hazard identification and control, risk assessment and implementation of risk reduction measures specific to the tasks described by this unit, and include one or more of the following:

- manual handling techniques
- SOPs
- PPE
- 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 Mapping Information

Release 1. Supersedes and is equivalent to LMTTF3005A Apply lofting skills to sail making

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 MSTTF3005 Apply lofting skills to sail making

Modification History

Release 1. Supersedes and is equivalent to LMTTF3005A Apply lofting skills to sail making

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
- correctly interpreting sail design lines and table of offsets defining the pattern to be marked out for at least three (3) products of different types and sizes
- interpreting dimensions and other relevant specifications of components to be incorporated in pattern for at least three (3) sail products of different types and sizes
- selecting, preparing and using the range of lofting equipment on at least three (3) occasions for sails of different type and size to meet enterprise requirements
- applying proper handling techniques when laying out and transferring sail cloth
- identifying faults in marking, recording and correcting inconsistencies with design specifications, if possible
- measuring correctly and applying lay out, measuring and mark out techniques correctly on at least three sails (3) of different types and sizes
- checking work against information and specifications throughout lofting process, maximising material use and minimising waste
- complying with all relevant safety requirements, including safe use of tools and equipment used in handling materials, laying out and marking out
- completing housekeeping and required documentation according to 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
- the reasons for using lofting
- maintenance of the loft floor
- sail types for various uses and boat sizes
- performance and handling requirements of sail cloths
- design lines and tables of offsets
- common sail features applied in sail making
- cross-cut, radial and membrane panel layouts

- sail cloths commonly used in sail making, and their performance factors
- steps involved in lofting process
- bracing methods and materials
- geometry and geometric drawing
- practices for laying out sail cloth
- practices for measuring and marking sail cloth
- equipment used for measuring and marking onto sail cloth
- quality standards for the sail making industry
- manual handling techniques
- labelling, folding, packing, and transferring requirements of lofted sail cloths
- product construction processes
- work health and safety (WHS) and environmental requirements of relevant industry and workplace procedures
- general industry housekeeping policies and procedures
- WHS practices, including hazard identification and control measures
- 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 lofting skills to sail making, 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>