



Australian Government

Department of Education, Employment and Workplace Relations

MEM25001B Apply fibre-reinforced materials

Release: 1

MEM25001B Apply fibre-reinforced materials

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers applying and forming/shaping fibre-reinforced materials. It covers the use of manual and mechanical methods using a variety of glass reinforcements and other fibres. Typical applications include marine vessel and aircraft construction.
------------------------	--

Application of the Unit

Application of the unit	This unit applies to application and forming operations conducted within a mould or over a former assembly. Tasks may include hand and mechanical lay-up practices and sheathing applications. Typical applications may include hull, deck, superstructures, bulkhead and partitions, transverse and longitudinal frame members, engine beds and tanks. Materials may include a variety of glass reinforcements and other fibres, types of laminating resins, stiffening materials such as foams, core mat etc. Tools and equipment may include appropriate brushes and rollers, metal rollers, gel coat and resin depositors. Forming and integration work and vacuum bagging techniques are covered by Unit MEM25002B (Form and integrate fibre-reinforced structures). This unit should not be selected if Unit MEM25002B (Form and integrate fibre-reinforced structures) has already been selected. Band: A Unit Weight: 2
--------------------------------	--

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM13003B	Work safely with industrial chemicals and materials
	MEM18001C	Use hand tools
	MEM18002B	Use power tools/hand held operations

Employability Skills Information

Employability skills	This unit contains employability skills.
-----------------------------	--

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
---	--

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for application/forming operations	1.1. Appropriate tools and equipment are selected according to organisational requirements and instructions. 1.2. Equipment is set up and adjusted ready for operation, in accordance with standard operating procedures. 1.3. Required specifications are identified. 1.4. Materials are selected according to job specifications. 1.5. Allowances for thickness to specifications are made.
2. Apply reinforced materials	2.1. Components are positioned ready for reinforcement operation. 2.2. Equipment is started up, shut down and operated according to standard operating procedures. 2.3. Safe working practices are followed, including the use of personal protective equipment.
3. Form and shape reinforcement materials	3.1. Materials are rolled/shaped to specified thicknesses and/or finishes. 3.2. Materials are laminated according to specifications. 3.3. Final application and shape is checked for compliance to specifications and adjusted as necessary.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
Look for evidence that confirms skills in: • selecting equipment for the application/forming job • checking equipment for correct operation • setting up and operating/adjusting equipment • interpreting and clarifying work instructions • selecting materials to suit different operations

REQUIRED SKILLS AND KNOWLEDGE

- making allowances to suit conditions and specifications
- positioning components
- following operating procedures
- working safely
- using personal protective equipment (PPE)
- rolling/shaping material
- smoothing irregularities
- laminating
- ensuring compliance to specification

Required knowledge

Look for evidence that confirms knowledge of:

- tools and equipment for application/forming operations
- procedures for setting up and adjusting equipment
- terminology and information relevant to standard work instructions
- applicable codes and regulations
- different chemicals and materials and their properties, including mixing ratios
- the importance and relevance of thickness allowances
- techniques for positioning components
- safety requirements and start up/shut down/operating procedures
- safe working practices and safe use of personal protective equipment
- methods for rolling and shaping
- problems associated with rolling and shaping and methods for rectifying
- the lamination sequence
- methods of checking final application and form
- cleaning procedures

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply fibre-reinforced materials. Competency in this unit cannot be claimed until all prerequisites have been satisfied.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Context of and specific resources for assessment

This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate.

This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with applying fibre-reinforced materials, or other units requiring the exercise of the skills and knowledge covered by this unit.

Method of assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

EVIDENCE GUIDE**Guidance information for assessment****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. 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) may also be included.

Appropriate

Tools and equipment may include appropriate brushes and rollers, metal rollers, gel coat and resin depositors

Unit Sector(s)**Unit sector****Co-requisite units****Co-requisite units**

Competency field

Competency field	Marine craft construction
------------------	---------------------------