Australian Government

MEM25002 Form and integrate fibre-reinforced structures

Release: 1

MEM25002 Form and integrate fibre-reinforced structures

Modification History

Release 1. Supersedes and is equivalent to MEM25002B Form and integrate fibre-reinforced structures

Application

This unit of competency defines the skills and knowledge required to apply, form and integrate fibre-reinforced components using manual and mechanical methods in marine vessel and aircraft construction applications.

It applies to component construction carried out for mould installation, and application and forming operations conducted within a mould or over a former assembly using a variety of glass reinforcements and other fibres.

Where mark off/out skills is required unit MEM12007 Mark off/out structural fabrications and shapes should also be selected.

Where straightforward application of fibre-reinforced materials and no forming or integrating is required unit MEM25001 Apply fibre-reinforced materials should be selected.

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

Band: **A**

Unit Weight: **4**

Pre-requisite Unit

MEM09002	Interpret technical drawing
MEM11011	Undertake manual handling
MEM12023	Perform engineering measurements
MEM13003	Work safely with industrial chemicals and materials
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information
MEM18001	Use hand tools
MEM18002	Use power tools/hand held operations

Competency Field

Marine craft construction

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	**Form components**	2.1	Select relevant materials for component construction
		2.2	Select relevant drawings and templates
		2.3	Form components to specifications
		2.4	Ensure component sizing matches the appropriate template
3	**Integrate components**	3.1	Determine integration requirements, materials fixing/bonding methods and mixing practices from job specifications and manufacturer specifications
		3.2	Set up and adjust equipment ready for operation
		3.3	Fix/bond components in accordance with job requirements and specifications
		3.4	Form/shape reinforcement materials to specifications
		3.5	Prepare component for encapsulation process
		3.6	Clean excess bonding material and dispose of waste following SOPs

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
4 **Undertake post-curing of materials**	4.1 Select post-curing method to suit job application
	4.2 Set up equipment/accessories for post-curing
	4.3 Store equipment/accessories according to SOPs
	4.4 Disassemble, clean and store equipment and accessories following SOPs

Foundation Skills

This section describes those required skills (reading, writing, oral communication and numeracy) that are essential to workplace performance in this unit of competency.

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.

Application and forming operations include one (1) or more of the following:	• lay-up practices • post-curing practices • core materials for stiffening application • sheathing applications using resins, adhesives, sealants and fillers • vacuum bagging techniques, where applicable
Products/components constructed include one (1) or more of the following:	• hull • deck • superstructures • bulkhead and partitions • transverse and longitudinal framing • engine beds • tanks

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Materials include one (1) or more of the following:	• types of laminating resins
	• hardeners
	• releasing agents
	• pigments
	• fillers
	• variety of glass reinforcements and other fibres
	• stiffening materials, including:
	  • foams
	  • core mat

Tools and equipment include one (1) or more of the following:	• brushes and rollers • metal rollers • gel coat • resin depositors • vacuum bagging equipment • hand and power tools • workshop machinery

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM25002B Form and integrate fibre-reinforced structures

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2