



Australian Government

MEM26008 Select and use resin systems appropriate for product

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM26008A Select and use resin systems appropriate for product

Application

This unit of competency defines the skills and knowledge required to select and use appropriate resins and resin systems. It includes the chemistry of resins.

Where the selection of a suitable reinforcing system is required unit MEM26007 Select and use reinforcing appropriate for product should also 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

MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information

Competency Field

Composites

Elements and Performance Criteria

Elements describe the essential outcomes.

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

1	Determine product requirements	1.1	Follow standard operating procedures (SOPs)
		1.2	Comply with work health and safety (WHS) requirements at all times
		1.3	Select and use appropriate personal protective equipment (PPE) in accordance with SOPs
		1.4	Determine requirements of resin system from

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	specifications, job sheets or work instructions and customer requests
	1.5 Select appropriate process to be used to fabricate product
2 Select most appropriate resin/resin system for job	<p>2.1 Determine performance outcomes required from resin</p> <p>2.2 Interpret specifications of available resins</p> <p>2.3 Compare required properties with specifications of available resin systems</p> <p>2.4 Interpret safety data sheets (SDS) for possible resin systems</p> <p>2.5 Select most appropriate resin</p>
3 Evaluate selected resin system	<p>3.1 Identify current conditions impacting on resin chemistry</p> <p>3.2 Identify adjustments which can be made to meet current conditions</p> <p>3.3 Make allowable adjustments and monitor result</p> <p>3.4 Fabricate a sample using the selected resin system and nominated reinforcing</p> <p>3.5 Conduct/organise for relevant tests</p> <p>3.6 Evaluate test results against product requirements</p> <p>3.7 Review fabrication process and make any required changes to resin system or process</p>
4 Fabricate product	<p>4.1 Identify and control hazards</p> <p>4.2 Prepare nominated reinforcing, including cutting to size/shape and any pre-treatment, as required</p> <p>4.3 Lay reinforcing in correct direction, including fibre orientation and fibre pre-forming, as appropriate</p>

Elements describe the essential outcomes.

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

- 4.4 Make any appropriate adjustments to the resin system recipe
- 4.5 Mix selected resin system, as required
- 4.6 Fabricate product using selected process and minimise waste
- 4.7 Review product compared to requirements
- 4.8 Review reinforcing selection and fabrication process
- 4.9 Identify areas for improvement and take appropriate actions
- 4.10 Complete any required documentation/reporting according to 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.

Requirements of resin system include the following:

- strength
- flexibility/rigidity
- surface finish and colour
- shrinkage
- chemical/ultraviolet (UV)/environmental resistance
- operating temperature and heat distortion temperature
- recyclability

Most appropriate resin

- compliance with product requirements

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.

includes the following:

- greatest ease of use in manufacture
- best financial return
- greatest sustainability contribution

Resin system adjustments include one (1) or more of the following:

- temperature
- humidity
- required cure time

Adjustments may only be made within the allowable limits of the system being used

Areas for improvement include one (1) or more of the following:

- cost/benefit of different resin systems
- selecting a resin system suited to the fabrication process

Sustainability includes the following:

- survival of the ecology/physical environment
- economic viability
- social sustainability

Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>