Australian Government

MEM26004 Make basic plugs for composites fabrication

Release: 1

MEM26004 Make basic plugs for composites fabrication

Modification History

Release 1. Supersedes and is equivalent to MEM26004A Make basic plugs for composites fabrication

Application

This unit of competency defines the skills and knowledge required to make basic plugs for routine or one-off production.

This unit does not cover the making of the plugs which require specialist patternmaking trade skills. See the relevant metals and engineering units of competency for these situations.

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 Identify product requirements from specifications, job

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
			sheets or work instructions and customer requests
2	**Interpret product requirements**	2.1	Determine features of plug required, including relief, parting lines and efficient lay-up
		2.2	Identify or develop procedure to make plug
		2.3	Select tooling and materials required to make plug
		2.4	Liaise with mould maker and determine plug features in relation to suitable plug, including release angles and parting lines
		2.5	Set up equipment/workplace
3	**Prepare materials**	3.1	Calculate surface area and required resin volume
		3.2	Develop cutting list for solid materials
		3.3	Mark out and cut out sheet materials, as required
		3.4	Calculate resin content
		3.5	Develop batch scale formulae for resin system
		3.6	Prepare non-composite materials to be used
		3.7	Measure resin components and minimise waste, as appropriate
4	**Make plug**	4.1	Identify and control hazards
		4.2	Mix resin system
		4.3	Fabricate and detail plug, including buff, fill and get ready for production
		4.4	Identify routine and non-routine faults and take appropriate remedial action
		4.5	Perform final verification to meet product requirements

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
5 **Clean up and maintain equipment**	5.1 Label and store plug for future use
	5.2 Clean and replace tools ready for next use
	5.3 Undertake any required minor maintenance of tools/equipment
	5.4 Complete required logs and reports according to SOPs
6 **Identify common problems**	6.1 Recognise typical process and product problem/potential problem and take appropriate action

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.

Routine faults include one (1) or more of the following:	• gel coat sag • slow curing rates • blistering • wrinkles • pinholes • brush marks • poor surface finish
Non-routine faults include one (1) or more of the following:	• release agents failure • mould release failure • warping or cracking after moulding

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Typical process and product problems include one (1) or more of the following:

- structural strength, rigidity and stability of the tooling
- dimensional accuracy of the tooling
- allowances in the design for shrinkage, deformations and alterations in the process from tooling to mould to finished composite product
- placement of flanges, closures, fitments, supports, struts and stiffeners
- variations in materials and/or contamination of materials

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM26004A Make basic plugs for composites fabrication

Links

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