



Australian Government

PMBPROD356E Construct moulds for composite products

Release: 1

PMBPROD356E Construct moulds for composite products

Modification History

Release 1. Unit code changed. Application changed. Elements and Performance Criteria changed. Range of Conditions removed. Assessment Requirements changed. Supersedes and is equivalent to PMBPROD356 Construct moulds for composite products.

Application

This unit describes the skills and knowledge required to plan and construct moulds from which composite products can be made.

This unit applies to an experienced technician working alone or as part of a team.

The unit principally refers to the materials performance science of thick laminates with suitable structural support, and its application to produce a mould suitable for production processes.

No licensing or certification requirements exist at the time of publication. Relevant legislation, industry standards and codes of practice within Australia must be applied.

Pre-requisite Unit

Nil.

Competency Field

Production – Composites

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Plan work requirements	1.1 Identify and check materials required, including additives, from job specifications 1.2 Identify equipment and processes used for production process and upstream and downstream operations from job specifications 1.3 Perform pre-operational checks including checking for and controlling hazards 1.4 Identify checks required for equipment, materials, quality and production management from job specifications 1.5 Identify waste management strategies to collect excess, discarded or nonconforming materials to be disposed of, recycled or

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	reprocessed according to workplace procedures
2. Perform pre-production tasks	2.1 Produce a plan for the mould construction according to job specifications 2.2 Organise for mould design to be put into operation according to workplace procedures 2.3 Set production process according to equipment and workplace specifications, and adjust process to optimise output based on selected materials 2.4 Set up and adjust work area, tools, materials and equipment ready for construction 2.5 Verify materials, including measurements, are correct according to job specifications 2.6 Perform test run of mould construction process to ensure output meets job specifications 2.7 Undertake other pre-startup checks according to workplace procedures
3. Construct mould	3.1 Apply mould materials according to job specifications 3.2 Ensure dimensions, structural reinforcements, supports and flanges meet job and design specifications 3.3 Cure mould and release according to workplace procedures 3.4 Recheck dimensions of the finished mould against job specifications 3.5 Check fit with other matching mould parts according to workplace procedures 3.6 Accurately complete logs and records 3.7 Apply waste management strategies according to workplace procedures 3.8 Clean, adjust and lubricate equipment according to equipment specifications
4. Anticipate and solve process control variances	4.1 Recognise existing or potential process control variances and their causes 4.2 Determine, prioritise and implement remedial and preventative actions based on identified issues and causes 4.3 Monitor process control variances and corrective actions taken

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	until resolved 4.4 Maintain records and logbooks according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

- Numeracy skills to interpret and check measurements and other job specification requirements.
- Reading skills to interpret job and equipment specifications and workplace procedures.
- Writing and oral communication skills to record and report on mould construction and process control variances.

Other foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to PMBPROD356 Construct moulds for composite products.

Links

Companion Volume implementation guides are found in VETNet – -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=932aacef-7947-4c80-acc6-593719fe4090>

Assessment Requirements for PMBPROD356E Construct moulds for composite products

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Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and demonstrated the ability to:

- construct moulds for composite products at least once to meet job specifications.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- the principles of composite moulding processes
- characteristics of materials and their behaviour in relation to moulding process conditions and stages of production
- product requirements that affect mould construction and materials
- types, grades, uses and cure reaction of resins used to construct moulds, including:
 - polyester resin
 - epoxy resin
 - vinyl ester resin
 - dicyclopentadiene (DCPD)
- types and role of catalysts, promoters and additives used with each type of resin
- types, role and properties of reinforcement materials, including:
 - E-glass
 - S2-glass
 - carbon fibre
 - aramid
- typical quality standards required at each stage of construction
- key variables in mould construction processes and materials that may affect product quality and production output
- typical and atypical process and product problems, including early warning signs, possible causes and corrective actions
- organisational procedures relevant to the work environment or job role
- hazards that may arise in the job or work environment, and:
 - their possible causes
 - potential consequences

- appropriate risk controls
- post-curing requirements.

Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

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