



Australian Government

PMBPROD355E Make pattern or plug for composites moulds

Release: 1

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Modification History

Release 1. Unit code and title changed. Application changed. Elements and Performance Criteria changed. Range of Conditions removed. Assessment Requirements changed. Supersedes and is equivalent to PMBPROD355 Make pattern/plug for composites moulds.

Application

This unit describes the application of the skills and knowledge required to plan and make a pattern or plug suitable for a full range of production moulds.

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

The unit principally refers to the construction of a suitable pattern (often called the 'plug') as the traditional starting point for the composite moulding 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 and regrind, and their amounts or percentage ratios, from job specifications 1.2 Identify equipment and processes required for production process and upstream and downstream operations from production plan or request 1.3 Perform pre-operational checks including checking for and controlling hazards 1.4 Identify checks and testing processes required for equipment, materials, quality and production management
2. Perform pre-production tasks	2.1 Produce a plan for pattern or plug based on job specifications 2.2 Set production process according to equipment and workplace

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	specifications, and adjust process to optimise output based on selected materials 2.3 Set up and adjust work area, tools, materials and equipment ready for construction of pattern or plug 2.4 Verify materials, including measurements, are correct against job specifications 2.5 Perform test run of pattern or plug creation process to ensure output meets job specifications 2.6 Undertake other pre-startup checks according to equipment specifications and workplace procedures
3. Construct pattern or plug	3.1 Start pattern or plug construction process, and make adjustments to settings to meet job specifications 3.2 Ensure process is operating according to equipment specifications and workplace procedures 3.3 Follow checking and testing processes to assess if output meets job specifications and quality standards, and apply strategies for managing nonconforming outputs 3.4 Complete construction process according to job specifications 3.5 Finish pattern or plug by treating, preparing and repairing surface as required 3.6 Work efficiently to minimise scrap and trim according to workplace procedures 3.7 Clean and adjust equipment according to equipment specifications and workplace procedures
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 until resolved 4.4 Accurately maintain records and logbooks

Foundation Skills

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

- Numeracy skills to calculate quantities of materials required.
- Reading skills to interpret job and equipment specifications and workplace procedures.
- Writing and oral communication skills to record and report on 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 PMBPROD355 Make pattern/plug for composites moulds.

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 PMBPROD355E Make pattern or plug for composites moulds

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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:

- make a pattern or plug for a composite mould at least once to meet job specifications.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- composite moulding processes and function and operating principles of moulding equipment
- production workflow sequences and materials demand
- characteristics of materials and their behaviour in the processes
- the criteria for overall process/equipment readiness for the process or equipment being used
- quality requirements at each stage of construction
- moulding process variables that affect pattern or plug construction and materials, including
 - temperatures
 - colour and uniformity
 - surface finish or appearance
 - times (including curing rates)
 - general conformance to specification
- product design requirements that affect pattern or plug construction and materials
- common options and adjustments in pattern or plug construction, including methods for surface treatment, preparation and repair
- 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.

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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