



Australian Government

PMBPROD347E Mould composites products using hand lay-up techniques

Release: 1

PMBPROD347E Mould composites products using hand lay-up techniques

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 PMBPROD347 Produce composites using hand lamination.

Application

This unit describes the skills and knowledge required to apply polymer-matrix lay-up moulding techniques for the production of advanced composites products.

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

The unit principally refers to the materials science application of wet lay-up technology at the trade level of competency.

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 equipment and materials, including additives, from job specifications 1.2 Identify equipment and processes required for upstream and downstream operations from job specifications 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 to meet job requirements 1.5 Identify waste management strategies to collect excess, discarded

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	or nonconforming materials to be disposed of, recycled or reprocessed according to workplace procedures
2. Perform pre-production tasks	2.1 Verify materials, resins and fibres are correct and prepared according to job specifications 2.2 Inspect and prepare mould in readiness for use 2.3 Prepare jigs, fixtures and tools according to job specifications 2.4 Set up date, batch and materials markings according to workplace procedures 2.5 Undertake other pre-startup checks according to equipment specifications and workplace procedures
3. Mould composites products	3.1 Apply materials to mould, and make adjustments to settings to meet job specifications 3.2 Follow checking and testing processes to assess if output meets job specifications and quality standards, and apply strategies for managing nonconforming outputs 3.3 Accurately complete logs and records 3.4 Work efficiently to minimise scrap and trim according to 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 interpret technical information.
- Reading skills to interpret specifications and workplace procedures.
- Writing and oral communication skills to record and report on moulding production.

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 PMBPROD347 Produce composites using hand lamination.

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 PMBPROD347E Mould composites products using hand lay-up techniques

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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:

- mould composites products using hand lay-up techniques at least once to meet job specifications.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- the hand lamination manufacturing process and phases of the wet moulding cycle
- characteristics of materials and their behaviour in relation to process conditions and stages of production, including:
 - resins
 - fibre reinforcement
 - gel coats
 - cores, fillers and surface finishes
- characteristics and properties of materials required to form a composite structure of the required strength and surface finish
- typical quality standards required at each stage of production
- typical and atypical process and product problems, including early warning signs, possible causes and corrective actions, and key variables that may affect product quality and production output
- 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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