



Australian Government

PMBPROD358E Develop polymer product patterns

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 PMBPROD358 Develop patterns.

Application

This unit describes the skills and knowledge required to plan and develop a two-dimensional (2D) pattern used in the fabrication, thermoforming, composites and rubber lining sectors.

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

The unit principally refers to manual and CAD (computer assisted design) techniques for the development of 2D patterns, which can be folded up or moulded into three-dimensional (3D) products for one-off (bespoke) items, or in-process mass production.

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 – Fibre-reinforced Plastic, Polyurethane, Rubber and Urethanes, Thermoforming

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. Determine dimensions of finished pattern	1.1 Establish required size of finished product from job specifications 1.2 Check size requirements in relation to production process and finishing capacity of workplace
2. Plan process	2.1 Identify material for pattern from approximate size and characteristics in job specifications 2.2 Identify, locate and assemble required instruments and equipment from job specifications 2.3 Interpret drawings and related specifications 2.4 Check procedures for using pattern development instruments and

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	tools, and prepare equipment for use
3. Plot dimensions	3.1 Use equipment and tools to produce pattern to specifications 3.2 Measure, explode and plot each dimension, maintaining appropriate angles, arcs and curves 3.3 Compare pattern dimensions and shapes with drawings and specifications, both visually and using measurements
4. Complete pattern	4.1 Finalise pattern with completion date and original drawing details 4.2 Organise for product pattern to be put into operation according to workplace procedures 4.3 Mark plans with notations for workplace requirements, including authorship, process or customer requirements, authorisation and key dates 4.4 Accurately complete workplace documentation and records and follow archiving processes for CAD files
5. Anticipate and solve process variances	5.1 Recognise existing or potential process control variances and their causes 5.2 Determine, prioritise and implement remedial and preventative actions based on identified issues and causes 5.3 Monitor process control variances and corrective actions taken until resolved 5.4 Accurately complete records and logbooks

Foundation Skills

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

- Numeracy skills to interpret measurement information and accurately reflect dimension details into 2D and 3D drawings
- Learning skills to use different CAD-based software applications.
- Reading skills to interpret job specifications including drawings.

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 PMBPROD358 Develop patterns.

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 PMBPROD358E Develop polymer product patterns

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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:

- develop at least one polymer product pattern to meet job specifications.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- the principles of using CAD for pattern development
- processes that require the use of patterns
- influence of polymer type on pattern requirements
- types and application of pattern mediums and materials
- typical quality standards required at each stage of production
- key variables 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.

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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