Australian Government

PMBPROD358 Develop patterns

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to PMBPROD358C Develop patterns

Application

This unit of competency covers the skills and knowledge required to plan and develop a two-dimensional pattern from which three-dimensional products or moulds can be made. Two-dimensional patterns are typically used in the fabrication, thermoforming, composites and rubber lining sectors.

This unit of competency applies to experienced operators who are required to interpret drawings and specifications, plot the dimensions and 'develop' solid objects into two-dimensional patterns, check and complete the pattern and solve problems within area of responsibility.

This unit of competency applies to an experienced operator demonstrating theoretical and technical knowledge and well developed skills in situations that require some discretion and judgement. The operator may work alone or as a member of a team or group and will work in liaison with other shift team members, team leader and supervisor, as appropriate.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

MEM09002B Interpret technical drawing

Competency Field

Production

Unit Sector

Not applicable

Elements and Performance Criteria

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.
1	**Determine dimensions of**	1.1 Establish required size(s) of finished products from customer orders

	finished patterns	1.2	Check size requirements in relation to the production process and finishing capacity of the workplace
2	**Plan process**	2.1	Identify material for pattern from approximate size and characteristics
		2.2	Identify, locate and assemble required instruments and equipment
		2.3	Interpret drawings and related specifications
		2.4	Check procedures for using pattern development instruments and tools, and prepare equipment for use
3	**Plot dimensions**	3.1	Use equipment and tools following workplace procedures
		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	Ensure completed pattern indicates completion date and original drawing details
		4.2	Obtain required approvals of pattern
		4.3	Mark plans with notations for workplace requirements, including authorship, process or customer requirements, authorisation and any review dates
		4.4	Complete relevant documentation and records
5	**Anticipate and solve problems**	5.1	Recognise actual and/or potential problems
		5.2	Refer problems outside area of responsibility to appropriate person, with possible causes
		5.3	Seek information and assistance as required to solve problems

5.4 Solve problems within area of responsibility

5.5 Follow through items initiated until final resolution has occurred

Foundation Skills

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

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.

Regulatory framework

The latest version of all legislation, regulations, industry codes of practice and Australian/international standards, or the version specified by the local regulatory authority, must be used.

Applicable legislation, regulations, standards and codes of practice include:

- health, safety and environmental (HSE) legislation, regulations and codes of practice relevant to the workplace, manual handling and hazardous materials
- Australian/international standards relevant to the materials being used and products being made
- any relevant licence and certification requirements.

All operations to which this unit applies are subject to stringent HSE requirements, which may be imposed through state/territory or federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and such requirements the legislative requirements take precedence.

Procedures

All operations must be performed in accordance with relevant procedures.

Procedures are written, verbal, visual, computer-based or in some other form, and include one or any combination of:

- emergency procedures
- work instructions
- standard operating procedures (SOPs)
- safe work method statements (SWMS)
- formulas/recipes
- batch sheets
- temporary instructions
- any similar instructions provided for the smooth running of the plant.

Tools and equipment

Tools and equipment include:

- manual lathe and mills
- bench drills/drill presses
- powered hand tools.

Additional tools and equipment will be selected as required from:

- laser liquid solidification equipment
- computer-aided design (CAD)/computer-aided manufacturing (CAM).

Hazards

Hazards must be identified and controlled. Identifying hazards requires consideration of:

- eye strain
- repetitive strain injury
- posture hazards
- hazardous products and materials
- flammability
- other hazards that might arise.

Problems

Routine and non-routine problems must be resolved.

Non-routine problems must be resolved by applying operational knowledge to develop new solutions, either individually or in collaboration with relevant experts, to:

- determine problems needing action
- determine possible fault causes
- develop solutions to problems which do not have a known solution
- follow through items initiated until final resolution has occurred
- report problems outside area of responsibility to designated person.

Non-routine problems are unexpected problems or variations of previous problems and include one or more of:

- stability of pattern in use
- damage to pattern in use
- emergency situations
- intermittent faults.

Operational knowledge includes one or more of:

- procedures
- training
- technical information, such as journals and engineering specifications
- remembered experience
- relevant knowledge obtained from appropriate people.

Routine problems are predictable and have known solutions and include one or more of:

- making adequate allowances for manufacture
- balancing cost of pattern with required pattern life.

Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=932aacef-7947-4c80-acc6-593719fe4090