



Australian Government

PMBPROD311E Produce blow moulded products

Release: 1

PMBPROD311E Produce blow moulded 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 PMBPROD311 Produce blow moulded products.

Application

This unit describes the skills and knowledge required to safely operate, control and optimise extrusion blow moulding processes to produce products to the required specification.

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

The unit principally refers to the practical skills for the operation of the polymer extrusion section, which may involve a single- or multi-layer extrusion set-up in the compound production machine. This is standard polymer extrusion technology; however, the electro-hydraulic articulation of the moulds and deflashing units is unique to the production of extrusion blow moulded products.

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–Blow Moulding

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 requirements, including additives and regrind and their amounts or percentages, from job specifications 1.2 Identify equipment and processes required for production and upstream and downstream operations from job specifications 1.3 Perform pre-operational checks including checking for and controlling hazards, checking planned and historical maintenance fixes and confirming that any historical issues have been appropriately addressed

Elements Elements describe the essential outcomes.	Performance Criteria Performance criteria describe the performance needed to demonstrate achievement of the element.
	1.4 Identify and check emergency stops, guards and controls 1.5 Identify checks and testing processes required for equipment, materials, quality and production management to meet job requirements 1.6 Identify housekeeping tasks and waste management strategies to collect excess, discarded or nonconforming materials to be disposed of, recycled or reprocessed according to workplace procedures 1.7 Check availability of post-moulding labelling, packaging and storage consumables to complete the task once in operation
2. Perform pre-production tasks	2.1 Verify equipment and mould requirements against job specifications 2.2 Set production process according to equipment and job specifications, and adjust process to optimise output based on selected materials 2.3 Set up and adjust blow moulding equipment for shot size, parison control, die gap, temperature, screw speed, cycle speed, slow close setting (or cushion) and timing to meet job specifications 2.4 Verify raw materials are correct against job specifications 2.5 Set up date, batch and materials markings according to workplace procedures 2.6 Undertake other pre-startup checks according to equipment specifications and safe workplace procedures
3. Operate equipment and make adjustments	3.1 Start up equipment safely and run through a 'dry cycle' to warm hydraulics and components to operating temperature before production 3.2 Operate blow moulding equipment safely, and adjust settings to meet job specifications 3.3 Ensure process is operating according to equipment specifications and workplace procedures 3.4 Follow checking and testing processes to assess if output meets job specifications and quality standards, and apply strategies for managing non-conforming outputs 3.5 Maintain continuity of process to support production requirements 3.6 Accurately complete logs and records and any observations that require attention 3.7 Apply waste management strategies to collect excess, discarded or

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	nonconforming materials to be disposed of, recycled, or reprocessed according to safe workplace procedures 3.8 Clean work area, and clean, adjust and lubricate equipment, according to equipment specifications and workplace procedures 3.9 Pause or stop machine cycle in normal and abnormal circumstances according to safe workplace procedures
4. Anticipate and solve process control variances	4.1 Recognise existing or potential process control variances and their root 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
4. Shut down equipment	4.1 Shut down equipment according to equipment instructions and workplace procedures 4.2 Complete equipment clean-up and post-production adjustments according to equipment instructions and workplace procedures 4.3 Put guards, locks and notices in place to prevent inadvertent start-up 4.4 Accurately complete workplace shutdown documentation, including logging identified safety issues or concerns that require attention and notify management and/or maintenance for action 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 technical information and equipment readings.
- Reading skills to interpret specifications and workplace procedures.
- Writing and oral communication skills to record and report on blow 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 PMBPROD311 Produce blow moulded 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 PMBPROD311E Produce blow moulded 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 PMBPROD311 Produce blow moulded products.

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:

- produce blow moulded products at least once to meet job specifications.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- the functions of extrusion blow moulding equipment, including bottom blow, top blow, needle blow, tail to tail blow, parison pre-blow and pre-squeeze, parison stretching and parison orientation type machines
- the characteristics and properties of plastic materials and additives commonly used in this moulding and manufacturing process:
 - physical and end-use applications
 - operating temperatures during processing
 - chemical resistance
- the principles of operation of extrusion blow moulding equipment, and mechanical, hydraulic, pneumatic, electrical and electronic principles that affect machine operation and their respective safety hazards
- extrusion blow moulding manufacturing production processes and sequences of the cycle
- the criteria for overall process/equipment readiness for the process or equipment being used
- characteristics of materials and their behaviour, including the impact of variations in raw materials on final product outputs
- typical quality standards required at each stage of production mechanical, hydraulic, pneumatic, electrical and electronic principles that effect machine operation
- key variables that may affect product quality and production output, including:
 - operating temperatures
 - speed
 - cycle time
 - output rate
 - concentration or dispersion of colour
 - product weight

- product wall thickness
- product integrity and general conformance to specification
- typical and atypical process and product problems, including early warning signs, possible causes and corrective actions
- organisational procedures relevant to the work environment and job role, including procedures for the emergency shutdown of equipment
- hazards that may arise in the job/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.

Links

Companion Volume implementation guides are found in VETNet – -

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