



**Australian Government**

# **PMB30121 Certificate III in Polymer Processing**

**Release 1**

# PMB30121 Certificate III in Polymer Processing

## Modification History

Release 1. Supersedes and is equivalent to PMB30116 Certificate III in Polymer Processing.

## Qualification Description

This qualification reflects the role of technicians who use production equipment to produce polymer products and components. They apply theoretical and technical knowledge and well-developed skills, exercising judgement in areas such as start-up, shutdown procedures and quality assurance. Operators apply their product and process knowledge to anticipate and solve a range of product variances and/or product faults.

Products and components may be for commercial, industrial or consumer markets and be made from natural or synthetic polymers covering thermoplastics as well as thermosetting polymers. Production may be long runs of standard products, short runs, or 'one offs' of specialised products.

There are no specific licenses that relate to this qualification. However, some units in this qualification may have licensing or regulatory requirements in some jurisdictions. Local regulations should be checked for details.

## Entry Requirements

There are no entry requirements for this qualification.

## Packaging Rules

**Total number of units = 21**

- 1 core unit
- 20 elective units, consisting of:
  - at least 17 units from the electives listed below, which must include:
    - 2 units from Group A – noting the unit selection guidelines
    - a minimum of 6 from any units listed in Groups B to L
  - up to 3 units from any endorsed Training Package or accredited course – these units must be relevant to the work outcome.

**Any combination of electives that meets the rules above can be selected for the award of the Certificate III in Polymer Processing. Where appropriate, electives may be packaged to provide a qualification with a specialisation.**

Packaging for each specialisation:

- All Group B electives must be selected for the award of PMB30121 Certificate III in Polymer Processing (Blow moulding)
- All Group C electives must be selected for the award of PMB30121 Certificate III in Polymer Processing (Blown film)

- All Group D electives must be selected for the award of PMB30121 Certificate III in Polymer Processing (Composites)
- All Group E electives must be selected for the award of PMB30121 Certificate III in Polymer Processing (Conveyor belt maintenance and repair)
- All Group F electives must be selected for the award of PMB30121 Certificate III in Polymer Processing (Conveyor belt manufacture)
- All Group G electives must be selected for the award of PMB30121 Certificate III in Polymer Processing (Extrusion)
- All Group H electives must be selected for the award of PMB30121 Certificate III in Polymer Processing (Plastic fabrication)
- All Group I electives must be selected for the award of PMB30121 Certificate III in Polymer Processing (Injection moulding)
- All Group J electives must be selected for the award of PMB30121 Certificate III in Polymer Processing (Polyurethane)
- All Group K electives must be selected for the award of PMB30121 Certificate III in Polymer Processing (Rotational moulding)
- All Group L electives must be selected for the award of PMB30121 Certificate III in Polymer Processing (Rubber lining)

Core units	
Unit Code	Unit Title
MSS402051	Apply quality standards

Elective units			
Unit Code	Unit Title	Prerequisites	Unit selection guidelines
<b>Group: A</b>			
MEM13015	Work safely and effectively in manufacturing and engineering		Do not take with MSMWHS200
MEM16006	Organise and communicate information	MEM13015	Do not take with MSMSUP210
MSMWHS200	Work safely		Do not take with MEM13015
MSMSUP210	Process and record information		Do not take with MEM16006
<b>Group B: Blow moulding</b>			

MEM12023	Perform engineering measurements	MEM13015 MEM16006
MEM12024	Perform computations	MEM13015 MEM16006
PMBPREP303E	Set up equipment for continuous operation	
PMBPREP305E	Change extrusion die and calibrator	
PMBPROD235E	Use materials and process knowledge to complete work operations	
PMBPROD306E	Prepare and start equipment for production	
PMBPROD308E	Take a machine out of production	
PMBTECH301E	Optimise polymer processing operations	
And at least one of the following units:		
PMBPROD311E	Produce blow moulded products	
PMBPROD370E	Produce injection blow moulded products	
<b>Group C: Blown film</b>		
MEM12023	Perform engineering measurements	MEM13015 MEM16006
MEM12024	Perform computations	MEM13015 MEM16006
PMBPREP303E	Set up equipment for continuous operation	
PMBPREP305E	Change extrusion die and calibrator	
PMBPROD235E	Use materials and process knowledge to complete work operations	
PMBPROD306E	Prepare and start equipment for production	

PMBPROD308E	Take a machine out of production	
PMBPROD316E	Produce blown film	
PMBTECH301E	Optimise polymer processing operations	
<b>Group D: Composites</b>		
MEM12023	Perform engineering measurements	MEM13015 MEM16006
MEM12024	Perform computations	MEM13015 MEM16006
PMBPREP201E	Prepare moulds for composites production	
PMBPROD247E	Create composite laminates using hand lay-up techniques	
PMBPROD347E	Mould composites products using hand lay-up techniques	
PMBPROD356E	Construct moulds for composite products	
PMBPROD393E	Produce composites using vacuum bagging	
PMBTECH405E	Repair damaged fibre-composites structures	
PMBTECH407E	Produce composite products using cored-laminate techniques	
<b>Group E: Conveyor belt maintenance and repair</b>		
PMBPROD243E	Cut rubber materials	
PMBPROD265E	Operate portable vulcanising equipment	
PMBPROD367E	Remove and replace conveyor belts	
PMBPROD368E	Repair conveyor belt carcasses	
PMBPROD369E	Repair conveyor belt covers	

And at least one of the following units:		
PMBPROD376E	Splice steel cord conveyor belts	
PMBPROD377E	Splice fabric ply conveyor belts	
PMBPROD378E	Splice solid woven conveyor belts	
<b>Group F: Conveyor belt manufacture</b>		
PMBPROD238E	Perform creel rack operations for belting production	
PMBPROD239E	Build fabric-reinforced conveyor belts	
PMBPROD254E	Operate an open mill blender	
PMBPROD307E	Produce calendered rubber or vinyl products	
PMBPROD339E	Produce steel cord-reinforced conveyor belts	
PMBTECH301E	Optimise polymer processing operations	
<b>Group G: Extrusion</b>		
MEM12023	Perform engineering measurements	MEM13015 MEM16006
MEM12024	Perform computations	MEM13015 MEM16006
PMBPREP303E	Set up equipment for continuous operation	
PMBPREP305E	Change extrusion die and calibrator	
PMBPROD306E	Prepare and start equipment for production	
PMBPROD313E	Produce extruded polymer products	
PMBTECH301E	Optimise polymer processing operations	

<b>Group H: Plastic fabrication</b>		
MEM12023	Perform engineering measurements	MEM13015 MEM16006
MEM12024	Perform computations	MEM13015 MEM16006
MEM30031A	Operate computer-aided design (CAD) system to produce basic drawing elements	
MEM30033A	Use computer-aided design (CAD) to create and display 3-D models	MEM30031A
PMBPROD330E	Make moulds for thermoformed products	
PMBPROD357E	Construct jigs and fixtures	
PMBPROD358E	Develop polymer product patterns	
PMBPROD384E	Operate multi-axis router	
PMBPROD385E	Program computer-controlled equipment	
PMBTECH301E	Optimise polymer processing operations	
<b>Group I: Injection moulding</b>		
MEM12023	Perform engineering measurements	MEM13015 MEM16006
MEM12024	Perform computations	MEM13015 MEM16006
PMBPREP304E	Set a die for injection moulding production	
PMBPROD235E	Use materials and process knowledge to complete work operations	
PMBPROD306E	Prepare and start equipment for production	

PMBPROD310E	Produce injection moulded products	
PMBPROD430E	Trial a new injection moulding die	
PMBTECH301E	Optimise polymer processing operations	
<b>Group J: Polyurethane</b>		
MEM12023	Perform engineering measurements	MEM13015 MEM16006
MEM12024	Perform computations	MEM13015 MEM16006
MSMSUP292	Sample and test materials and product	
PMBPROD246E	Hand mix materials	
PMBPROD235E	Use materials and process knowledge to complete work operations	
PMBPROD360E	Produce polyurethane products using centrifugal casting	
PMBPROD362E	Produce polyurethane products using gravity casting	
PMBTECH301E	Optimise polymer processing operations	
<b>Group K: Rotational moulding</b>		
MEM12023	Perform engineering measurements	MEM13015 MEM16006
MEM12024	Perform computations	MEM13015 MEM16006
MSMSUP303	Identify equipment faults	
PMBPROD235E	Use materials and process knowledge to complete work operations	
PMBPROD283E	Demould polymer products	
PMBPROD321E	Produce rotational moulded products	



PMBTECH301E	Optimise polymer processing operations	
MSMSUP292	Sample and test materials and product	
<b>Group L: Rubber lining</b>		
MEM09002	Interpret technical drawing	MEM12023 MEM12024 MEM13015 MEM16006
MEM12023	Perform engineering measurements	MEM13015 MEM16006
MEM12024	Perform computations	MEM13015 MEM16006
MEM13003	Work safely with industrial chemicals and materials	MEM11011 MEM13015 MEM16006
PMBPROD241E	Install rubber lining or pulley lagging using lay-up techniques	
PMBPROD243E	Cut rubber materials	
PMBPROD248E	Prepare surfaces for coating	
PMBPROD358E	Develop polymer product patterns	
PMBPROD375E	Vulcanise products using an autoclave	
<b>Other electives</b>		
MEM05050	Perform routine gas metal arc welding	MEM11011 MEM13015 MEM16006
MEM09202A	Produce freehand sketches	
MEM11011	Undertake manual handling	MEM13015 MEM16006

MSMENV272	Participate in environmentally sustainable work practices	
MSMOPS100	Use equipment	
MSMOPS101	Make measurements	
MSMOPS102	Perform tasks to support production	
MSMOPS200	Operate equipment	
MSMOPS212	Use organisation computers or data systems	
MSMOPS244	Lay out and cut materials	
MSMOPS363	Organise on-site work	
MSMSUP100	Apply workplace context to own job	
MSMSUP102	Communicate in the workplace	
MSMSUP106	Work in a team	
MSMSUP200	Achieve work outcomes	
MSMSUP240	Undertake minor maintenance	
MSMSUP291	Participate in continuous improvement	
MSMSUP300	Identify and apply process improvements	
MSMSUP382	Provide coaching/mentoring in the workplace	
MSMWHS100	Follow WHS procedures	
MSS402040	Apply 5S procedures	
PMBFIN201E	Finish components and products	
PMBFIN202E	Fit attachments and assemble components for customised polymer products	
PMBFIN203E	Rework product imperfections	
PMBFIN205E	Hand decorate products	

PMBHAN103E	Shift materials safely by hand	
PMBPREP205E	Assemble materials and equipment for production	
PMBPREP206E	Prepare polymer materials to specified formulae	
PMBPREP301E	Set up and prepare for batch production	
PMBPROD206E	Operate ancillary equipment	
PMBPROD207E	Operate rubber calendaring equipment	
PMBPROD209E	Operate cable winding equipment	
PMBPROD210E	Operate injection moulding equipment	
PMBPROD213E	Operate polymer extruders	
PMBPROD216E	Operate blown film equipment	
PMBPROD221E	Operate rotational moulding equipment	
PMBPROD236E	Operate hand-held air or power equipment for production processes	
PMBPROD242E	Bond polymers to surfaces	
PMBPROD245E	Fabricate products with rubber or plastics	
PMBPROD249E	Apply liquid surface coatings	
PMBPROD251E	Apply gel coat or other polymer surface finish	
PMBPROD252E	Operate polymer compounding equipment	
PMBPROD261E	Operate continuous vulcanising equipment	
PMBPROD280E	Operate a chopper gun to lay-up composites	
PMBPROD281E	Finish composite products	

PMBPROD282E	Reassemble production mould components	
PMBPROD287E	Weld thermoplastics materials	
PMBPROD293E	Create composite laminates using vacuum-assisted closed-moulding processes	
PMBPROD300E	Produce products	
PMBPROD301E	Draw wire	
PMBPROD302E	Bunch and strand wire	
PMBPROD303E	Produce cable and tape lay-up cables	
PMBPROD304E	Wind up wire or belts	
PMBPROD325E	Lay on tyre retreads	
PMBPROD326E	Inspect tyres	
PMBPROD328E	Produce sheet-fed vacuum-formed products	
PMBPROD336E	Inspect heavy off-the-road tyres	
PMBPROD337E	Prepare heavy off-the-road tyres for repair	
PMBPROD338E	Repair heavy off-the-road tyres	
PMBPROD340E	Cure heavy off-the-road tyre repairs	
PMBPROD341E	Finish heavy off-the-road tyre repairs	
PMBPROD352E	Produce compounded materials	
PMBPROD355E	Make pattern or plug for composites moulds	
PMBPROD380E	Produce composites products using mechanised open mould wet lay-up	
PMBPROD390E	Produce composites using filament winding	
PMBPROD391E	Produce composites using resin	

	infusion	
PMBPROD392E	Produce thermoset composites using pultrusion	
PMBPROD394E	Produce composites using resin transfer moulding	
PMBPROD398E	Produce composites using prepregs	
PMBTECH403E	Test thermoset composite laminates and materials	
PMBTECH404E	Mould composites with chemically-resistant or fire-retardant properties	
PMBWELD301E	Join polyethylene plastic pipelines using butt welding	
PMBWELD302E	Join polyethylene plastic pipelines using electrofusion welding	
PMBWELD303E	Install polyethylene plastic pipelines for non-pressure drainage	
PMBWELD304E	Design polyethylene plastic pipelines for non-pressure drainage	
PMBWELD305E	Install polyethylene plastic pipelines for pressurised applications	
PMBWELD306E	Design polyethylene plastic pipelines for pressurised applications	
PMBWELD307E	Install plastic pipelines for high temperature applications	
PMBWELD308E	Install PVC plastic pipelines for pressurised applications	
PMBWELD309E	Weld plastic using extrusion techniques	
PMBWELD310E	Design PVC plastic pipelines for pressure applications	
PMBWELD311E	Design plastic pipelines for high temperature and pressure applications	

## Qualification Mapping Information

Release 1. Supersedes and is equivalent to PMB30116 Certificate III in Polymer Processing.

## Links

Companion Volume implementation guides are found in VETNet -

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