



Australian Government

PMB60116 Advanced Diploma of Polymer Technology

Release 1

PMB60116 Advanced Diploma of Polymer Technology

Modification History

Release 1. Supersedes and is equivalent to PMB60107 Advanced Diploma of Polymer Technology.

Qualification Description

The PMB60116 Advanced Diploma of Polymer Technology is intended for advanced technologists, technical experts and those in similar paraprofessional roles in the plastics, rubber and cabling sectors.

The advanced technologist will apply significant depth and breadth of theoretical polymer, product and process knowledge to develop new products and tools. The technologist may also have some supervisory responsibilities. They are not required to be competent to operate production equipment but will understand the principles behind the relevant production and support processes.

The advanced technologist may be largely based in a laboratory or office but may conduct some of their work in or through the shop floor.

This qualification applies to the production of a wide range of polymer products and components ranging from consumer products to components to be included in other commercial, industrial or consumer products. Products may be made from a wide range of natural and 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.

For people who require a more generalist qualification covering the application of good manufacturing practice and lean principles see MSS60316 Advanced Diploma of Competitive Systems and Practices.

There are no specific licences that relate to this qualification. However, units of competency in this qualification may provide the underpinning knowledge and skills required for licences in some jurisdictions. Local regulations should be checked for details.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

To be awarded the PMB60116 Advanced Diploma of Polymer Technology competency must be achieved in **twenty-five (25)** units of competency:

- **four (4)** core units of competency
- **twenty-one (21)** elective units of competency, as specified below.
 - a minimum of **two (2)** units from Group A
 - a minimum of **five (5)** units from Group B
 - a minimum of **four (4)** units from Group C
 - the remainder of units may be chosen from Groups A, B, C and D, to bring the total number of units to **twenty-one (21)**.

Up to **five (5)** of the elective units may be chosen from other qualifications in this Training Package, other endorsed Training Packages and accredited courses, as specified in Group D.

Note: Units with prerequisites are marked with an asterisk*. Prerequisite units must be counted in the total number of units required for achievement of the qualification. Refer to individual units for details.

Core units of competency

| Unit code | Unit title | Prerequisites |
|--|--|---------------|
| MSMENV472 | Implement and monitor environmentally sustainable work practices | |
| MSMWHS200 | Work safely | |
| MSMSUP300 | Identify and apply process improvements | * |
| MSMSUP390 | Use structured problem solving tools | |
| <p>Elective units of competency</p> <p>Group A</p> | | |
| Unit code | Unit title | Prerequisites |

| | | |
|------------------|---|----------------------|
| MSMOPS601 | Design equipment and system modifications | |
| PMBTECH601 | Develop a new product | * |
| PMBTECH602 | Develop a new die or tool | * |
| PMBTECH603 | Design structural/mechanical polymer components | * |
| Group B | | |
| Unit code | Unit title | Prerequisites |
| PMBTECH501 | Analyse equipment performance | * |
| PMBTECH502 | Review and analyse production trials and specify retriels | * |
| PMBTECH503 | Determine rheology and output of plastics materials from processing equipment | * |
| PMBTECH504 | Determine heat transfer loads for processing equipment | |
| PMBTECH505 | Choose polymer materials for an application | * |
| PMBTECH506 | Analyse the design of products and tools | * |
| PMBTECH507 | Develop fibre composite products using cored-laminate techniques | * |
| PMBTECH508 | Develop a new compound | |
| PMBTECH509 | Modify an existing product | |
| PMBTECH510 | Analyse failure in polymeric materials | |
| Group C | | |
| Unit code | Unit title | Prerequisites |
| MSMOPS400 | Optimise process/plant area | * |
| MSMOPS401 | Trial new process or product | |

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|------------------|---|----------------------|
| MSMSUP404 | Coordinate maintenance | |
| MSMSUP405 | Identify problems in fluid power system | |
| MSMSUP406 | Identify problems in electronic control systems | |
| MSMWHS400 | Contribute to WHS management system | * |
| MSMWHS401 | Assess risk | |
| MSL974003 | Perform chemical tests and procedures | |
| MSL974005 | Perform physical tests | |
| MSL974010 | Perform mechanical tests | |
| PMBPROD430 | Trial a new die/tool | |
| PMBPROD431 | Trial a new, advanced or complex mould | |
| PMBTECH401 | Predict polymer properties and characteristics | * |
| PMBTECH402 | Set advanced or complex dies | * |
| PMBTECH403 | Test fibre-composites materials and laminates | |
| PMBTECH404 | Mould chemical resistant and/or fire retardant fibre-composites | |
| PMBTECH405 | Repair damaged fibre-composites structures | * |
| PMBTECH406 | Diagnose production equipment problems | |
| Group D | | |
| Unit code | Unit title | Prerequisites |
| LMTGN5004A | Manage installation and commissioning of equipment and systems | |
| MEM09003B | Prepare basic engineering drawing | * |
| MEM15001B | Perform basic statistical quality control | |
| MEM16006A | Organise and communicate information | |

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|--|---|---|
| MEM16007A | Work with others in a manufacturing, engineering or related environment | |
| MEM16008A | Interact with computing technology | |
| MEM30031A | Operate computer-aided design (CAD) systems to produce basic drawing elements | |
| MEM30033A | Use computer-aided design (CAD) to create and display 3-D models | * |
| MSMENV672 | Develop workplace policy and procedures for environmental sustainability | |
| MSMWHS601 | Establish workplace WHS management system | * |
| MSMSUP383 | Facilitate a team | |
| MSMSUP400 | Develop and monitor quality systems | |
| MSS403002 | Ensure process improvements are sustained | |
| MSS404052 | Apply statistics to operational processes | |
| MSS405020 | Develop quick changeover procedures | |
| MSS405021 | Develop a Just in Time system | |
| MSS405030 | Optimise cost of product or service | |
| MSS405031 | Undertake value analysis of product costs in terms of customer requirements | |
| MSS405050 | Determine and improve process capability | * |
| MSS405070 | Develop and manage sustainable energy practices | |
| MSS015002 | Develop strategies for more sustainable use of resources | |
| PSPPM502B | Manage complex projects | |
| <p>Up to five (5) relevant units may be chosen from this Training Package, other endorsed Training Packages and accredited courses, where those units are available for inclusion in a Diploma or Advanced Diploma.</p> | | |

Qualification Mapping Information

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Links

MSA Training Package Implementation Guides - <http://mskills.org.au/training-packages/info/>