



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **PMC60110 Advanced Diploma of Manufactured Mineral Products**

**Revision Number: 1**

## **PMC60110 Advanced Diploma of Manufactured Mineral Products**

### **Modification History**

Not applicable.

## Description

This qualification covers the skills and knowledge required to perform advanced technical and para-professional operations within the manufactured mineral products industries.

### *Job roles/employment outcomes*

The Advanced Diploma of Manufactured Mineral Products is intended for process plant technologists or para-professionals who may have worked their way up through the manufactured mineral products certificate qualifications or who have entered the industry at this level, either from another industry or trade occupation.

The process plant technologist will analyse performance and failure in equipment and products and will assist in the development on new and modified products.

### *Application*

This qualification is typically used to develop employees performing a highly technical role that includes an ability to lead others and conduct technical problem solving according to the needs of the work in the manufactured mineral products industries.

People with this qualification may be expected to work in one of the following sectors:

- cement
- precast concrete
- premixed concrete
- clay products
- ceramic products
- float (flat) glass
- glass containers
- refractories
- plaster (both fibrous plaster and plaster boards)
- fibre cement boards
- ground minerals
- abrasive grinding wheels and cutting discs
- other areas.

Training programs for this qualification are suitable to be undertaken as part of a formal training contract with an employer under an Australian Traineeship or Apprenticeship arrangement.

### *Pathways into the qualification*

The Advanced Diploma of Manufactured Mineral Products offers advanced technical training to people who have completed PMC50110 Diploma of Manufactured Mineral Products or other relevant qualifications, or who have significant relevant industry experience without formal qualifications. Credit for this qualification may include units contained within relevant skill sets.

### *Pathways from the qualification*

Further training pathways from this qualification include PMC70110 Vocational Graduate Certificate in Refractories Engineering, MSA60108 Advanced Diploma of Manufacturing Technology, MSA61108 Advanced Diploma of Competitive Manufacturing or other relevant qualifications, including appropriate vocational graduate qualifications.

***Additional qualification advice***

MSA61108 Advanced Diploma of Competitive Manufacturing is available for team leaders and managers at this level who already possess technical skills and who require additional manufacturing practice skills above those available in this qualification.

***Licensing considerations***

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

## **Pathways Information**

Not applicable.

## **Licensing/Regulatory Information**

Not applicable.

## **Entry Requirements**

Not applicable.

## Employability Skills Summary

<b>EMPLOYABILITY SKILLS QUALIFICATION SUMMARY</b>	
<b>Employability Skill</b>	<b>Industry/enterprise requirements for this qualification</b>
<b>Communication</b>	<ul style="list-style-type: none"> <li>• initiate communication about multiple subjects and with multiple audiences</li> <li>• complete incident, technical and other reports</li> <li>• use technical information and manufacturer information</li> <li>• collect, analyse and organise information</li> <li>• communicate problem solutions, ideas and information</li> <li>• use and develop workplace documentation</li> <li>• maintain workplace records</li> </ul>
<b>Teamwork</b>	<ul style="list-style-type: none"> <li>• identify and describe own role and role of others</li> <li>• work within and lead a team</li> <li>• resolve conflicts between team members</li> <li>• develop teamwork strategies</li> </ul>
<b>Problem solving</b>	<ul style="list-style-type: none"> <li>• recognise a problem or a potential problem</li> <li>• determine problems needing priority action</li> <li>• refer problems outside area of responsibility to appropriate person</li> <li>• identify and develop appropriate theory base for problem</li> <li>• seek information and assistance as required to solve problems</li> <li>• solve problems within area of responsibility</li> <li>• follow through items initiated until final resolution has occurred</li> <li>• identify and isolate faults in equipment</li> <li>• use a range of formal problem solving techniques</li> </ul>
<b>Initiative and enterprise</b>	<ul style="list-style-type: none"> <li>• identify the most appropriate process conditions for equipment</li> <li>• determine problems needing action</li> <li>• develop and recommend required action</li> <li>• report problems outside area of responsibility</li> <li>• distinguish between causes of faults</li> <li>• recommend new and improved ways of doing things</li> </ul>
<b>Planning and organising</b>	<ul style="list-style-type: none"> <li>• prioritise actions to achieve required outcomes</li> <li>• plan own work requirements and assist others to plan</li> </ul>

<b>EMPLOYABILITY SKILLS QUALIFICATION SUMMARY</b>	
	<p>theirs</p> <ul style="list-style-type: none"> <li>• plan and organise activities and projects</li> <li>• identify tasks to achieve team goals</li> <li>• organise allocation of tasks</li> <li>• monitor completion of allocated tasks</li> <li>• develop and adjust a production schedule</li> </ul>
<b>Self-management</b>	<ul style="list-style-type: none"> <li>• plan own work requirements</li> <li>• operate within appropriate time constraints, work standards and other requirements</li> <li>• select, use and improve appropriate equipment, materials, processes and procedures</li> <li>• plan to ensure effective production/projects</li> <li>• select and apply standard procedures</li> <li>• identify resource requirements</li> <li>• recognise limitations and seek timely advice</li> </ul>
<b>Learning</b>	<ul style="list-style-type: none"> <li>• ask questions to gain information</li> <li>• identify sources of information to expand knowledge and understanding</li> <li>• lead improvement procedures</li> <li>• lead the development of continuous improvement strategies</li> <li>• assist others develop competency</li> <li>• develop enterprise knowledge</li> <li>• identify and address learning gaps in team</li> </ul>
<b>Technology</b>	<ul style="list-style-type: none"> <li>• operate, adjust and optimise the operation of equipment</li> <li>• develop equipment and process</li> <li>• start up and shut down equipment</li> <li>• set up equipment</li> <li>• monitor quality</li> <li>• function and operating principles of equipment</li> <li>• maintain workplace records</li> </ul>

## Packaging Rules

### Packaging Rules

To be awarded the Advanced Diploma of Manufactured Mineral Products competency must be achieved in **fifteen (15)** units of competency:

- **four (4)** core units of competency

- **eleven (11)** elective units of competency from Groups A and B, chosen as specified below.

### Note

Where prerequisite units apply, these must be considered in the total number of units chosen.

### Core units of competency

Select all **four (4)** units of competency from this list.

Unit code	Title	Prerequisites
MSAENV272A	Participate in environmentally sustainable work practices	
MSAPMOHS200A	Work safely	
MSAPMSUP200A	Achieve work outcomes	
MSAPMSUP210A	Process and record information	

### Elective units of competency

#### Group A - Specialist electives

A minimum of **two (2)** specialist elective units must be chosen from the list below.

Unit code	Title	Prerequisite unit
MSACMT675A	Facilitate the development of a new product	MSACMT452A
PMAOPS600C	Modify plant	
PMAOPS601A	Debottleneck plant	
PMC556031C	Design structural/mechanical components	PMC555031B

#### Group B - Other electives

The balance of units, to a maximum of **nine (9)**, may be drawn in any combination from:

- units not already chosen from Group A above
- Group B units listed below, with a maximum of **seven (7)** from Group B2

**Group B1**

<b>Unit code</b>	<b>Title</b>	<b>Prerequisites</b>
PMAOPS500A	Optimise production systems	
PMAOPS501A	Provide operational expertise to a project team	
PMAOPS505A	Control the process during abnormal situations	
PMAOPS511B	Determine energy transfer loads	
PMAOPS512B	Determine mass transfer loads	
PMAOPS520C	Manage utilities	
PMAOPS521C	Plan plant shutdown	
PMAOPS522A	Coordinate plant shutdown	
PMBTECH502B	Review and analyse production trials and specify retrials	
PMC555030C	Analyse equipment performance	
PMC555031B	Choose materials for an application.	

**Group B2**

<b>Unit code</b>	<b>Title</b>	<b>Prerequisites</b>
LMTGN5004A	Manage installation and commissioning of equipment and systems	



<b>Unit code</b>	<b>Title</b>	<b>Prerequisites</b>
MEM09002B	Interpret technical drawing	
MEM09003B	Prepare basic engineering drawing	MEM09002B
MSACMC610A	Manage relationships with non-customer external organisations	
MSACMC611A	Manage people relationships	
MSACMC612A	Manage workplace learning	
MSACMT452A	Apply statistics to processes in manufacturing	
MSACMT481A	Undertake proactive maintenance analyses	
MSACMT482A	Assist in implementing a proactive maintenance strategy	
MSACMT640A	Manage 5S system in a manufacturing environment	
MSACMT641A	Implement a continuous improvement system	
MSACMT650A	Determine and improve process capability	MSACMT452A
MSACMT660A	Develop the application of enterprise systems in manufacturing	
MSACMT661A	Determine and establish information collection requirements and processes	

Unit code	Title	Prerequisites
MSACMT670A	Develop and manage sustainable energy practices	
MSACMT671A	Develop and manage sustainable environmental practices	
MSACMT681A	Develop a proactive maintenance strategy	
MSAENV672A	Develop workplace policy and procedures for sustainability	
MSAPMOHS503A	Maintain the workplace OHS management system	
MSAPMOHS510A	Manage risk	
MSAPMOPS401A	Trial new process or product	
PMASUP520B	Review procedures to minimise environmental impact of process	
PSPPM502B	Manage complex projects	
	Up to <b>four (4)</b> relevant units may be chosen from this Training Package, other endorsed Training Packages and accredited courses, where those units are available at Certificate IV, Diploma and Advanced Diploma.	