



Australian Government

Department of Education, Employment and Workplace Relations

PMC40110 Certificate IV in Manufactured Mineral Products

Revision Number: 1

PMC40110 Certificate IV in Manufactured Mineral Products

Modification History

Not applicable.

Description

This qualification covers the skills and knowledge required to perform a range of high level technical operations within the manufactured mineral products industries.

Job roles/employment outcomes

The Certificate IV in Manufactured Mineral Products is intended for plant technicians.

The technician will typically be involved in solving complex problems which require theoretical knowledge, combined with an understanding of the production process and equipment across the plant.

Application

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

Non-technical team leaders, coordinators and supervisors may be better served by a qualification in competitive manufacturing.

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

This qualification may be accessed by direct entry. Credit may be granted towards this qualification by those who have completed PMC30110 Certificate III in Manufactured Mineral Products, MSA30107 Certificate III in Process Manufacturing, MSA30208 Certificate III in Manufacturing Technology or other relevant qualifications. Credit for this qualification may also include units contained within relevant skill sets.

Pathways from the qualification

Further training pathways from this qualification include PMC50110 Diploma of Manufactured Mineral Products, MSA51108 Diploma of Competitive Manufacturing, MSA50108 Diploma of Manufacturing Technology or other relevant qualifications, including appropriate vocational graduate qualifications.

Additional qualification advice

MSA41108 Certificate IV in Competitive Manufacturing is available for team leaders 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

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

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

Packaging Rules

Packaging Rules

To be awarded the Certificate IV in Manufactured Mineral Products competency must be achieved in **twenty four (24)** units of competency:

- **seven (7)** core units of competency
- **seventeen (17)** 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 **seven (7)** core units of competency as specified below.

All **six (6)** of these units must be chosen.

Unit code	Title	Prerequisites
MSAENV272A	Participate in environmentally sustainable work practices	
MSAPMOHS200A	Work safely	
MSAPMSUP100A	Apply workplace procedures	
MSAPMSUP101A	Clean workplace or equipment	
MSAPMSUP102A	Communicate in the workplace	
MSAPMSUP200A	Achieve work outcomes	

Select **one (1)** of the following units. Note that only one of MSAPMOPS101A **OR** PMAOPS101C may be included in this qualification, not both.

Unit code	Title	Prerequisites
MSAPMOPS101A	Make measurements	
PMAOPS101C	Read dials and indicators	

Elective units of competency

Group A - Specialist electives

A minimum of **one (1)** specialist elective unit must be chosen from the list below.

Unit Code	Title	Prerequisite unit
MSAPMOPS400A	Optimise process/plant area	MSAPMSUP390A
MSAPMOPS401A	Trial new process or product	

Unit Code	Title	Prerequisite unit
MSAPMOPS404A	Co-ordinate maintenance	
MSAPMOPS405A	Identify problems in fluid power system	
MSAPMOPS406A	Identify problems in electronic control systems	
PMAOPS402A	Respond to abnormal process situations	MSAPMSUP390A
PMAOPS405A	Operate complex control systems	
PMC554020D	Design and prepare models, moulds and dies	
PMC554090B	Undertake simple refractory design	
PMC554091B	Analyse refractory failures	

Group B - Other electives

The balance of units, to a maximum of **sixteen (16)**, may be drawn in any combination from:

- units not already chosen from Group A above
- Group B units listed below, with a maximum of **thirteen (13)** from Group B2

Group B1

Unit code	Title	Prerequisites
MSACMC411A	Lead a competitive manufacturing team	
MSACMC413A	Lead team culture improvement	
MSACMS401A	Ensure process improvements are sustained	
MSACMT430A	Improve cost factors in work practices	

Unit code	Title	Prerequisites
MSACMT440A	Lead 5S in a manufacturing environment	
MSACMT441A	Facilitate continuous improvement in manufacturing	
MSACMT450A	Undertake process capability improvements	MSACMT452A
MSACMT451A	Mistake proof a production process	
MSACMT452A	Apply statistics to processes in manufacturing	
MSACMT460A	Facilitate the use of planning software systems in manufacturing	MSACMT260A
MSACMT481A	Undertake proactive maintenance analyses	
MSACMT482A	Assist in implementing a proactive maintenance strategy	
MSAENV472A	Implement and monitor environmentally sustainable work practices	
MSAPMOHS400A	Contribute to OHS management system	MSAPMOHS300A MSAPMOHS200A
MSAPMOHS401A	Assess risk	
MSAPMPER400A	Coordinate permit process	MSAPMPER300B MNMC205A
PMASUP420B	Minimise environmental impact of process	

Unit code	Title	Prerequisites
PSPPM402B	Manage simple projects	
TAAASS401C	Plan and organise assessment	
TAAASS402C	Assess competence	
TAAASS403B	Develop assessment tools	
TAAASS404B	Participate in assessment validation	TAAASS402C
	Up to two (2) relevant units may be chosen from this Training Package, other endorsed Training Packages and accredited courses, where those units are available at Certificate IV or Diploma.	

Group B2

Unit code	Title	Prerequisites
MEM09002B	Interpret technical drawing	
MNMC205A	Conduct local risk assessment	
MSACMT230A	Apply cost factors to work practices	
MSACMT231A	Interpret product costs in terms of customer requirements	
MSACMT240A	Apply 5S procedures in a manufacturing environment	
MSACMT250A	Monitor process capability	
MSACMT251A	Apply quality standards	
MSACMT260A	Use planning software systems in manufacturing	
MSACMT270A	Use sustainable energy practices	
MSACMT271A	Use sustainable environmental practices	
MSACMT280A	Undertake root cause analysis	
MSACMT281A	Contribute to the application of a proactive maintenance strategy	
MSAPMOHS110A	Follow emergency response procedures	
MSAPMOHS300A	Facilitate the implementation of OHS for a work group	MSAPMOHS200A

Unit code	Title	Prerequisites
MSAPMOPS100A	Use equipment	
MSAPMOPS200A	Operate equipment	
MSAPMOPS212A	Use enterprise computers or data systems	
MSAPMPER200B	Work in accordance with an issued permit	
MSAPMPER201A	Monitor and control work permits	
MSAPMPER202A	Observe permit work	
MSAPMPER205B	Enter confined space	
MSAPMPER300B	Issue work permits	MNMC205A
MSAPMSUP106A	Work in a team	
MSAPMSUP201A	Receive or despatch goods	
MSAPMSUP210A	Process and record information	
MSAPMSUP230A	Monitor process operations	
MSAPMSUP240A	Undertake minor maintenance	
MSAPMSUP280A	Manage conflict at work	
MSAPMSUP292A	Sample and test materials and product	
MSAPMSUP300A	Identify and implement opportunities to maximise production efficiencies	MSAPMSUP200A
MSAPMSUP303A	Identify equipment faults	
MSAPMSUP310A	Contribute to development of plant	

Unit code	Title	Prerequisites
	documentation	
MSAPMSUP330A	Develop and adjust a production schedule	
MSAPMSUP382A	Provide coaching/mentoring in the workplace	
MSAPMSUP390A	Use structured problem solving tools	
MSL952001A	Collect routine site samples	
MSL973001A	Perform basic tests	
MSL974005A	Perform physical tests	
PMAOPS105C	Select and prepare materials	
PMAOPS216B	Operate local control system	
PMAOPS305B	Operate process control systems	
PMBHAN103C	Shift materials safely by hand	
PMC552002C	Operate equipment to blend/mix materials	
PMC552003C	Operate grinding equipment	
PMC552004C	Prepare for production	
PMC552005C	Process greenware/green products	
PMC552006C	Operate an autoclave	
PMC552007B	Heat accelerate the curing of precast concrete	

Unit code	Title	Prerequisites
PMC552008B	Operate crushing equipment	
PMC552010C	Operate a calcining kiln	
PMC552020C	Operate slip casting equipment	
PMC552021C	Operate manual glazing equipment	
PMC552022C	Prepare materials for clay and ceramic production	
PMC552023C	Finish products after firing	
PMC552024C	Hand mould products	
PMC552030C	Operate a firing kiln	
PMC552031C	Operate extrusion equipment	
PMC552032C	Operate pressing equipment	
PMC552040C	Operate glass melting process	
PMC552041C	Operate process ovens	
PMC552042C	Operate blown insulation equipment	
PMC552043C	Operate float forming equipment	
PMC552044C	Operate fibre forming equipment	
PMC552045C	Operate container forming equipment	
PMC552046C	Operate glass printing equipment	

Unit code	Title	Prerequisites
PMC552047C	Operate primary annealing equipment	
PMC552048C	Operate glass finishing equipment	
PMC552049C	Operate on-line stacking and assembly equipment	
PMC552050C	Schedule, cut and bend reinforcement	
PMC552051C	Finish green concrete products	
PMC552052C	Cast moulded concrete products	
PMC552053C	Finish cured concrete products	
PMC552054C	Spin concrete pipes	
PMC552055C	Conduct benching operations	
PMC552056B	Assemble, fabricate and place reinforcement	
PMC552057B	Finish casting operation	
PMC552058B	Demould concrete products	
PMC552060C	Batch mix concrete	
PMC552061C	Deliver concrete to site	
PMC552065B	Prepare asphalt	
PMC552070B	Operate forming equipment	
PMC552071B	Operate wet and dry end equipment	
PMC552072B	Produce fibrous	

Unit code	Title	Prerequisites
	plasterboard	
PMC552090B	Use and maintain tools and equipment for refractory operations	
PMC552091B	Prepare for, install and repair refractory brickwork/blockwork	
PMC552092B	Prepare for and install mouldable refractory materials	
PMC552093B	Prepare for and cast refractory materials	
PMC552094B	Prepare for and apply shotcrete for installation	
PMC552095B	Prepare for, install and repair ceramic fibre	
PMC553000C	Set up and tune a process	
PMC553010C	Process raw meal into product	PMC552010C
PMC553020C	Prepare moulds and dies	
PMC553021C	Set up and tune glazing equipment	
PMC553040C	Set up and optimise glass forming process	
PMC553041C	Set up and optimise glass furnace process	
PMC553042C	Set up and optimise secondary process	
PMC553050C	Produce architectural precast concrete	
PMC553051B	Produce structural precast concrete	

Unit code	Title	Prerequisites
PMC553070B	Design and construct moulds for fibrous plaster products	PMC552024C
PMC553072B	Model fibrous plaster products	
PMC553080B	Set up and optimise finishing process	
PMC561072C	Store materials for production	
PMC561080B	Organise self	
PMC562070B	Move materials	
PMC562071C	Operate bulk materials handling equipment	
PMC562075B	Maintain kiln refractory	
PMC562081B	Deliver customer service	
PMC562083C	Allocate and complete team tasks	
PMC563081C	Carry out stock control	
TAAASS301B	Contribute to assessment	
TAADEL301C	Provide training through instruction and demonstration of work skills	
TLIC307C	Drive medium rigid vehicle	
TLIC407D	Drive heavy rigid vehicle	
TLID1007C	Operate a forklift	
	Note: Only one of TLIC307C or TLIC407D may be included in this	

Unit code	Title	Prerequisites
	qualification, not both.	
	Up to six (6) relevant units may be chosen from this Training Package, other endorsed Training Packages and accredited courses, where those units are available at Certificate II, III, IV or Diploma.	