



**Australian Government**

# **PMC80116 Graduate Certificate in Refractories Engineering**

**Release 1**

# PMC80116 Graduate Certificate in Refractories Engineering

## Modification History

Release 1. Supersedes and is equivalent to PMC70110 Graduate Certificate in Refractories Engineering.

## Qualification Description

The PMC80116 Graduate Certificate in Refractories Engineering covers the skills and knowledge required to:

- design new refractory installations
- analyse refractory failures
- specify refractory repairs
- monitor and control new installations and repairs.

The qualification has been developed as a technical qualification for people with a relevant qualification, such as a Degree in science or engineering (or equivalent) who need specialist refractory knowledge. It applies to recent graduates or graduates with recent refractories experience. It also applies to people with significant industry experience who wish to upgrade their skills or seek recognition for skills they already possess.

The qualification is suitable for people who apply high-level refractory technical competence in roles such as project engineer, maintenance engineer, purchasing engineer, area engineer, section manager, operations manager, project controller or project planner.

The person will be able to analyse and synthesise advanced theoretical and technical knowledge and apply independent judgement to high-level technical issues and complex problems.

The individual may work in liaison with other refractory specialists or they may be the sole refractory specialist for a project or for their organisation.

There are no specific licenses that relate to this qualification. However, depending on the jurisdiction, licensing or regulatory requirements may apply to the use of some units of competency in this qualification. Local regulations should be checked for details.

## Entry Requirements

- Entrants to the PMC80116 Graduate Certificate in Refractories Engineering are required to have one or more of the following:
- Bachelor Degree in Engineering or related discipline
- Bachelor Degree in Science or related discipline
- a relevant Diploma, such as the PMC60116 Advanced Diploma of Manufactured Mineral Products, together with significant relevant vocational practice
- extensive relevant vocational practice with a different qualification to those mentioned above or without formal qualification.

For the purposes of entry to this qualification, the term 'vocational practice' is defined as experience of:

- designing of new refractory installations and/or repairs
- project managing refractory installations
- assisting in a significant way with the above.

## Packaging Rules

To be awarded the PMC80116 Graduate Certificate in Refractories Engineering competency must be achieved in **ten (10)** units of competency:

- **three (3)** core units of competency
- **seven (7)** elective units of competency chosen from Groups A and B, as described below.
  - A minimum of **four (4)** units must be selected from Group A
  - The balance of units, to a maximum of **three (3)**, may be chosen from Group A or Group B to bring the total number of electives to seven (7).

Up to **two (2)** of the elective units of competency can be chosen from other qualifications in this Training Package, other endorsed Training Packages and accredited courses, as specified in Groups **A and B**.

**Note:** Prerequisite units are listed and must be counted in the total number of units required for achievement of the qualification.

### Core units of competency

Unit code	Unit title	
MSMWHS200	Work safely	
PMC557090	Select refractory materials for an application	
PMC557091	Design a refractory lining	
<b>Elective units of competency</b>		
<b>Group A - Specialist electives</b>		
Unit code	Unit title	Prerequisites
PMC557092	Specify and interpret refractory tests	
PMC557093	Design a refractory/ceramic component	
PMC557094	Investigate refractory failures	

PMC557095	Specify and monitor the installation of monolithic/castable refractories	
PMC557096	Specify and monitor the installation of block/precast refractories	
PMC557097	Specify and monitor repairs to refractory installations	
PMC557098	Specify refractory installation systems	
<b>Group B - Other electives</b>		
<b>Unit code</b>	<b>Unit title</b>	<b>Prerequisites</b>
MSL916005	Manage complex projects	
MSMENV672	Develop workplace policy and procedures for sustainability	
MSS407013	Review continuous improvement processes	
MSS407002	Review operations practice tools and techniques	
MSS407007	Respond to a major non-conformance	
MSS407012	Lead a process to determine and solve root cause for a complex problem	
PMC557001	Manage trials	
Up to <b>two (2)</b> relevant units may be chosen from this Training Package; other endorsed Training Packages and accredited courses where those units are packaged in a Diploma or above.		

## Qualification Mapping Information

Release 1. Supersedes and is equivalent to PMC70110 Graduate Certificate in Refractories Engineering.

## **Links**

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