



Australian Government

Department of Education, Employment and Workplace Relations

PMC552010C Operate a calcining kiln

Revision Number: 1

PMC552010C Operate a calcining kiln

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency covers the operating of a calcining kiln. It involves conducting safety and system checks, operating equipment, monitoring the process and identifying and isolating equipment malfunctions.
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Application of the Unit

Application of the unit	This unit of competency applies to plant operators in a large plant who are responsible for the operation of cement making and lime making kilns, and can cover similar calcining operations such as making plaster. The type of operation will depend on: • nature and type of plant configuration • type of manufacturing process as to whether wet, dry or semi-dry. This unit does NOT require the operation of a central control panel. This competency is typically performed by operators working either independently or as part of a work team. At all times they would be liaising with other members of the team.
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare the equipment for production	1.1. Conduct equipment pre-startup procedure and visual checks according to enterprise procedure checklist 1.2. Set up and configure equipment startup function complying with procedures 1.3. Load raw materials in accordance with work instructions
2. Operate equipment and check on support equipment	2.1. Start up equipment in accordance with work instructions 2.2. Ensure equipment is operated in accordance with established enterprise procedures 2.3. Check on the operation of support equipment such as grinding mills, pneumatics pumps, slurry pumps, dust collectors, mixing and blending silos, vibrating screens, rotary kilns; and on bulk storage silos
3. Monitor and record operation	3.1. Monitor equipment performance in accordance with work instructions and manufacturer's specifications 3.2. Monitor non-conforming product against customer specifications 3.3. Adjust and control equipment to ensure correct product quality 3.4. Complete final inspection checks 3.5. Complete appropriate records and logs
4. Rectify routine problems	4.1. Identify the range of faults that can occur during the operation 4.2. Determine and rectify fault causes by procedures 4.3. Identify and rectify equipment failure causes in accordance with procedures 4.4. Make sure appropriate records and log books of equipment operations are maintained to meet procedures 4.5. Identify non-routine problems and report to designated person
5. Shut down equipment	5.1. Ensure line is clear of all product and left ready for startup 5.2. Shut down equipment in accordance with work instructions 5.3. Complete appropriate records and logs 5.4. Shut down equipment in an emergency situation
6. Prepare equipment	6.1. Isolate equipment in accordance with work

ELEMENT	PERFORMANCE CRITERIA
for maintenance	instructions 6.2. Remove any broken materials safely 6.3. Make sure area is clear and safe for maintenance
7. Control hazards	7.1. Identify hazards in the calcining work area 7.2. Assess the risks arising from those hazards 7.3. Implement measures to control those risks in line with procedures and duty of care

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- recognising variances in the process conditions and the equipment which will lead to out of specification production
- implementing the enterprise's standard procedures and work instructions and relevant regulatory requirements within appropriate time constraints and in a manner relevant to the operation of the equipment
- reading and numeracy to interpret workplace documents and technical information

Required knowledge

Required knowledge includes:

- isolation procedures
- chemistry and physics of cement/lime/plaster making processes (as appropriate)
- operational processes and functions, including startup and shutdown processes
- composition and nature of raw materials and finished product
- construction and limitations of the equipment
- out of specification situations
- distinguish between:
 - raw materials
 - equipment
 - types of defects/faults
 - electrical/instrumental causes of malfunctions

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	It is essential that the equipment and the process be understood and that the importance of critical settings and readings is known. Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action. Consistent performance should be demonstrated. In particular look to see that: • startup and shutdown occurs first time • signals and alarms are responded to immediately • all OHS requirements are followed. Competence must be demonstrated in the operation of all ancillary equipment to the level required for this unit of competency.
Context of and specific resources for assessment	Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation. Simulation or case studies/scenarios may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual plant and will include 'walk-throughs' of the relevant competency components. A bank of scenarios/case studies/what ifs and questions will be required to probe the reasoning behind observable actions.
Method of assessment	In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units. Individual enterprises may choose to add prerequisites

EVIDENCE GUIDE	
	and co-requisites relevant to their processes.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the language and literacy capacity of the candidate and the work being performed.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Procedures

All operations are performed in accordance with standard procedures and work instructions

Equipment and unit operations

This unit includes all such items of equipment and unit operations which form part of the kiln system. These may include:

- instrument panels (local)
- measuring and recording equipment
- communication equipment
- hand tools
- emergency stop buttons and lanyards
- safety clothing and equipment

Typical problems

Typical problems may include:

- equipment malfunctions
- temperature fluctuations
- quality of product
- material/feed variations
- spillages and leakages

Occupational health and safety (OHS)

All operations are subject to stringent OHS requirements and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and OHS requirements, the OHS requirements take precedence

Unit Sector(s)

Unit sector

Operational/technical

Competency field

Competency field	
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Co-requisite units

Co-requisite units		