



Australian Government

Department of Education, Employment and Workplace Relations

PMC552022C Prepare materials for clay and ceramic production

Revision Number: 1

PMC552022C Prepare materials for clay and ceramic production

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency covers the operation of equipment used to prepare a range of raw materials used in clay and ceramic product production.
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Application of the Unit

Application of the unit	<p>This unit of competency applies to operators who are responsible for using equipment to load and prepare clays and other materials for ceramic production.</p> <p>Operators must be able to determine requirements and quantities of materials from the production schedule and product specifications, and determine the adjustments required to meet the production needs.</p> <p>This competency does NOT include bulk raw materials blending and forming processes.</p> <p>This competency is typically performed by operators working either independently or as part of a team.</p>
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

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. Mix raw materials	1.1.Receive, sample and store raw materials as required 1.2.Load and start mixing equipment to procedures 1.3.Operate mixing equipment to produce materials as specified 1.4.Operate mixing equipment within specifications 1.5.Carry out routine maintenance to specifications 1.6.Unload and shut down mixing equipment to specifications 1.7.Store materials as required
2. Settle mixtures as required	2.1.Operate pumps and valves to move materials as required 2.2.Load materials into tank as required 2.3.Produce a properly settled mixture 2.4.Pump mixture to appropriate storage after treatment 2.5.Carry out routine maintenance to settling equipment to specifications 2.6.Report sediment status to designated person
3. Control moisture of mixtures	3.1.Operate equipment to produce clay with the correct moisture content 3.2.Carry out routine maintenance to moisture control equipment to specifications 3.3.Unload and shut down moisture control equipment as required 3.4.Store materials as required
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 to procedures 4.4.Maintain appropriate records and log books of equipment operations in accordance with procedures 4.5.Identify non-routine problems and report to designated person
5. Control hazards	5.1.Identify hazards from the job to be done 5.2.Identify other hazards in the work area 5.3.Assess the risks arising from those hazards 5.4.Implement measures to control those risks in line with procedures

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 conditions which will lead to out of specification product and taking appropriate action
- implementing enterprise's procedures and relevant regulatory requirements within 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:

- source and properties of typical raw materials
- operation of the preparation equipment
- consistency of the prepared materials
- distinguish between causes of faults such as:
 - material variations
 - specification or recipe tolerance
 - equipment malfunction

Evidence Guide

EVIDENCE GUIDE	
<p>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.</p>	
Overview of assessment	<p>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.</p>
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>Competence must be demonstrated in the ability to recognise situations requiring action and then in implementing appropriate corrective action. Consistent performance should be demonstrated. In particular look to see that:</p> <ul style="list-style-type: none"> • raw materials are correctly selected • preparation is as specified • completed products meet specifications • performance of materials is as required.
Context of and specific resources for assessment	<p>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.</p> <p>Assessment will occur over a range of situations which will include disruptions to normal, smooth operation.</p> <p>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.</p>
Method of assessment	<p>This unit may be assessed in conjunction with:</p> <ul style="list-style-type: none"> • <i>PMC552002B Operate equipment to blend/mix materials.</i> <p>Individual enterprises may choose to add prerequisites and co-requisites relevant to their processes.</p>
Guidance information for assessment	<p>Assessment processes and techniques must be culturally appropriate and appropriate to the language and literacy capacity of the candidate and the work being performed.</p>

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

Materials

Materials may include:

- additives
- body materials
- glaze pigments and stains
- slip
- waste

Equipment

Equipment may include:

- ball mill
- blunger
- bobcat
- box feeder
- filter press and filters
- fine rolls
- fork lift truck
- front end loader
- hammer mill
- hygrometer
- magnet
- mortar and pestle
- power consumption gauge
- pug mill
- rotameter
- sieves and screens
- spray drying tower
- storage room
- tanks and silos
- tempering machine
- thermometer
- timing equipment

RANGE STATEMENT	
	<ul style="list-style-type: none"> • weighing equipment • PLCs • scrapper • penetrometers • balances • infrared • microwave
Processes	Processes may include: <ul style="list-style-type: none"> • batch • continuous • dry materials • wet materials
Typical problems	Typical problems may include: <ul style="list-style-type: none"> • adjustments to allow for materials variations • equipment malfunction • contamination
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
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Competency field

Competency field	
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Co-requisite units

Co-requisite units		