



Australian Government

Department of Education, Employment and Workplace Relations

PMC562075B Maintain kiln refractory

Revision Number: 1

PMC562075B Maintain kiln refractory

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency covers the removal and replacement of a kiln refractory. It involves preparing and assembling appropriate plant and equipment, removing and replacing refractory and brickwork according to procedures and completing relevant records.
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Application of the Unit

Application of the unit	<p>This unit of competency is intended for simple kiln refractory maintenance such as may be performed by trained operators. It is intended to apply to one example of a refractory lined kiln only. For more general refractory lining competencies refer to the relevant refractories units (PMC552090 - 2095).</p> <p>This unit of competency is typically performed by more experienced operators working either independently or as part of a work team. The competency covers the removal and replacement of a kiln refractory and also covers the preparation of materials and the removal of waste from repairs.</p>
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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 for refractory replacement	1.1. Prepare and assemble, in accordance with specified requirements, materials used for the replacement of refractory 1.2. Prepare and assemble appropriate plant and equipment in accordance with specific needs and manufacturer's operating instructions 1.3. Notify appropriate personnel and ensure that required permits have been obtained
2. Replace refractory	2.1. Ensure that the removal of refractory and brickwork is performed in accordance with standard procedures/work instructions 2.2. Ensure that brickwork/refractory is replaced following standard procedures and work instructions 2.3. Ensure that waste from repairs to kiln is removed and disposed of correctly 2.4. Complete all records and permit 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 variance from specification and then analysing the problem to determine the level of appropriate action required, which is consistent with operating guidelines
- implementing 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 process
- reading and numeracy to interpret workplace documents and technical information

Required knowledge

Required knowledge includes:

- safe work practices
- function of tools/equipment used
- procedures used to prepare the kiln
- procedures used to install refractory
- first-line maintenance procedures required
- correct removal and replacement of refractory and brickwork
- correct preparation and assembly of materials and tools/equipment used
- safely remove waste from repairs to kiln
- distinguish between causes of faults such as:
 - refractory materials
 - refractory problems

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>It is essential that the process be understood and that the importance of critical material properties is known. Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action.</p> <p>Consistent performance should be demonstrated. In particular look to see that:</p> <ul style="list-style-type: none"> • replacement follows standard procedures • correct materials are used • permit and other health and safety procedures are followed. <p>Competence must be demonstrated in the operation of all ancillary equipment to the level required for this unit of competency.</p>
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>Individual enterprises may choose to add prerequisites and co-requisites relevant to their processes.</p>
Guidance information for	<p>Assessment processes and techniques must be culturally</p>

EVIDENCE GUIDE	
assessment	appropriate and appropriate to the language and literacy capacity of the candidate and the work being performed.

Range Statement

RANGE STATEMENT	
<p>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.</p>	
Procedures	All operations are performed in accordance with standard procedures and work instructions
Equipment	<p>Equipment may include:</p> <ul style="list-style-type: none"> • protective clothing, hearing protection, safety glasses and adequate ventilation • hand and power tools • mobile plant • refractory support mechanisms
Variations	<p>This unit may vary according to:</p> <ul style="list-style-type: none"> • length and type of kiln • the type of process, i.e. dry, wet, semi-wet, semi-dry • type of kiln maintenance being performed • method of waste disposal
Typical problems include:	<p>Typical problems may include:</p> <ul style="list-style-type: none"> • furnace/kiln problems • major refractory problems
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	Support
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Competency field

Competency field	
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Co-requisite units

Co-requisite units		