



Australian Government

Department of Education, Employment and Workplace Relations

MEM04019B Perform refractory installation and repair

Release: 1

MEM04019B Perform refractory installation and repair

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers repairing and installing/replacing refractory.
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Application of the Unit

Application of the unit	This unit applies to the repair and replacement of all types of refractory, including relining furnaces, treatment vessels, ladles and launders, and covers material which can be machine rammed, hand rammed, forked or vibrated. This includes refractory bricks and their replacement. For operational maintenance such as routine repair/repointing of refractory see Units MEM04001B (Operate melting furnaces) and/or Unit MEM04007B (Pour molten metal). Further refractory skills are covered by Manufactured Mineral Products Training Package PMC03. Band: A Unit Weight: 4
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM18001C	Use hand tools
	MEM18002B	Use power tools/hand held operations

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. Inspect refractory	1.1. Specification is interpreted and understood. 1.2. Specific areas of the refractory are identified for repair or replacement.
2. Knock out refractory	2.1. Sequence of operations to remove refractory is determined to meet the job specification. 2.2. Appropriate tools and equipment are selected to safely remove damaged refractory. 2.3. Damaged refractory is removed and disposed of safely.
3. Prepare refractory materials	3.1. Appropriate refractory materials are selected to meet specifications. 3.2. Refractory media is mixed to specification.
4. Install refractory	4.1. Sequence of operations to install refractory is determined to meet the job specification. 4.2. Refractory is installed using appropriate techniques and tools and equipment to meet the job specification.
5. Cure refractory	5.1. Refractory is cured to specifications using appropriate techniques and equipment to meet the job specification.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

Look for evidence that confirms skills in:

- interpreting job specifications and other applicable reference documents
- planning and sequencing operations
- inspecting and identifying faults
- removing damaged refractory safely
- mixing refractory correctly
- installing refractory correctly
- curing refractory correctly

REQUIRED SKILLS AND KNOWLEDGE

- following oral instructions

Required knowledge

Look for evidence that confirms knowledge of:

- repair or replacement requirements
- inspection techniques
- mixing, installing and curing techniques and equipment
- OH&S legislation and EPA regulations applying to working with refractory
- use and application of personal protective equipment
- safe work practices and procedures
- hazards and control measures associated with refractory installation and repair

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

A person who demonstrates competency in this unit must be able to repair and install/replace of all types of refractory. Competency in this unit cannot be claimed until all prerequisites have been satisfied.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Context of and specific resources for assessment

This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate.

This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with to repair and install/replace of all types of refractory or other units requiring the exercise of the skills and knowledge covered by this unit.

Method of assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

EVIDENCE GUIDE**Guidance information for assessment****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.

Refractory

The heat insulating material used inside molten metal vessels and includes material which can be machine rammed, hand rammed, forked or vibrated including refractory bricks, fibreboard

Installed

Hand ramming, machine ramming, internal and external vibration

Unit Sector(s)**Unit sector****Co-requisite units****Co-requisite units**

Competency field

Competency field	Casting and moulding
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