



Australian Government

Department of Education, Employment and Workplace Relations

MEM04006B Operate sand moulding and core making machines

Release: 1

MEM04006B Operate sand moulding and core making machines

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers operating automatic and semi-automatic sand moulding and core making machines.
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Application of the Unit

Application of the unit	<p>This unit applies to the operation of a range of automatic and semi-automatic sand moulding and core making machines in a foundry using a range of moulding media such as green sand, shell sand, chemically bonded media.</p> <p>Band: A</p> <p>Unit Weight: 8</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. Determine job requirements	1.1. Instructions and specifications are interpreted correctly.
2. Conduct pre-operational checks	2.1. Pattern/core box is selected and inspected to specifications and cleaned as required. Damaged patterns/core boxes are identified for repair or replacement to standard operating procedures. 2.2. Pattern/core box is set up in bolster and core box according to standard operating procedures.
3. Operate machine to produce mould/cores	3.1. Appropriate moulding media is selected to produce mould and core to specification. 3.2. Moulds/cores are filled to specification according to standard operating procedures. 3.3. Machine is operated in accordance with standard operating procedures. 3.4. Machine is unloaded safely to standard operating procedures. 3.5. Moulds/cores are stripped, inspected and painted as required according to standard operating procedures.
4. Assemble moulds/cores	4.1. Moulds/cores are dried, glued and vented as required to specification and closed in accordance with standard operating procedures. 4.2. Runner bush is set to specification as required.
5. Clean and restore work area	5.1. All material/debris is cleared and work site is cleaned and left in a safe state. 5.2. Unwanted treated sand is disposed of according to standard operating procedures.

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 written instructions and specifications

REQUIRED SKILLS AND KNOWLEDGE

- preparing and installing pattern or core box
- programming operating parameters
- operating and monitoring moulding and core making machines
- assembling moulds and cores
- inserting cores (in moulding machines)
- inserting runner bushes
- maintaining integrity of mould or core
- maintaining integration of interrelated metal melting, core making and sand mixing processes
- maintaining operational capability of moulding and core making machines
- entering routine and familiar information onto proformas and standard workplace forms

Required knowledge

Look for evidence that confirms knowledge of:

- characteristics and applications of sand and binding agents
- machine operation, fault identification, analysis and rectification procedures
- core selection and loading procedures
- use and application of personal protective equipment
- safe work practices and procedures
- hazards and control measures associated with operating sand moulding and core making machines

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>A person who demonstrates competency in this unit must be able to operate a sand moulding and core making machine.</p>
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>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.</p>
Context of and specific resources for assessment	<p>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.</p> <p>This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with operation of sand moulding and core making machines or other units requiring the exercise of the skills and knowledge covered by this unit.</p>
Method of assessment	<p>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.</p>
Guidance information for	

EVIDENCE GUIDE

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.

Moulding media

Shell, chemically bonded or green sand as appropriate for the particular machine

Machine

Automatic, semi-automatic, moulding and core making

Unit Sector(s)

Unit sector

Co-requisite units

Co-requisite units

Competency field

Competency field	Casting and moulding
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