



Australian Government

MEM04006 Operate sand moulding and core making machines

Release: 1

MEM04006 Operate sand moulding and core making machines

Modification History

Release 1. Supersedes and is equivalent to MEM04006B Operate sand moulding and core making machines

Application

This unit of competency defines the skills and knowledge required to operate sand moulding and core making machines in a foundry.

Where the interpretation of technical drawings is required unit MEM09002 Interpret technical drawing should also be selected.

Where the selection and use of engineering measuring equipment is required unit MEM12023 Perform engineering measurements should also be selected.

Where the selection and use of tools is required unit MEM18001 Use hand tools and unit MEM18002 Use power tools/hand held operations, should also be selected as appropriate.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Band: A

Unit Weight: 8

Pre-requisite Unit

MEM11011	Undertake manual handling
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information

Competency Field

Casting and moulding

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
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1	Determine job	1.1	Follow standard operating procedures (SOPs)
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Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
	requirements	1.2	Comply with work health and safety (WHS) requirements at all times
		1.3	Use appropriate personal protective equipment (PPE) in accordance with SOPs
		1.4	Identify job requirements from specifications, job sheets or work instructions
2	Conduct pre-operational checks	2.1	Select and inspect pattern/core box for conformance to specifications and clean as required
		2.2	Identify damaged patterns/core boxes for repair or replacement
		2.3	Set up pattern/core box in bolster and core box according to specifications
3	Operate machine to produce mould/cores	3.1	Select appropriate moulding media to produce mould and core to specification
		3.2	Fill moulds/cores to specification
		3.3	Operate machine
		3.4	Unload machine in a safe manner
		3.5	Strip, inspect and paint moulds/cores as required
4	Assemble moulds/cores	4.1	Dry, glue and vent moulds/cores as required to specification and close
		4.2	Set runner bush to specification as required
5	Restore work area	5.1	Leave the work site in a safe state, including clearing all materials/debris from the worksite
		5.2	Dispose of unwanted treated sand according to SOPs and legislative and statutory requirements

Foundation Skills

This section describes those required skills (reading, writing, oral communication and numeracy) that are essential to workplace performance in this unit of competency.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Machines include one (1) or more of the following:

- automatic mould and core making
- semi-automatic mould and core making

Moulding media includes one (1) or more of the following:

- green sand
- shell sand
- chemically bonded media

Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>

Assessment Requirements for MEM04006 Operate sand moulding and core making machines

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria on at least two (2) occasions and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- identifying and interpreting specifications and other applicable reference documents to operate sand moulding and core making machines
- selecting and inspecting pattern/core box for damage against specifications
- setting up pattern/core box in bolster and core box
- operating relevant machine to produce moulds/cores, including selecting appropriate moulding media
- filling moulds/cores to specifications
- unloading machine according to SOPs
- stripping, inspecting and painting moulds/cores as required
- assembling moulds/cores as required by specifications
- disposing of unwanted treated sand according to SOPs
- shutting down and cleaning machine
- completing all proformas and standard workplace forms as required.

Knowledge Evidence

Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include knowledge of:

- safe work practices and procedures and use of personal protective equipment (PPE)
- characteristics and applications of sand and binding agents
- sand moulding and core making machine operation, fault identification, analysis and rectification procedures
- core selection and loading procedures.

Assessment Conditions

- Assessors must:

- have vocational competency in operating sand moulding and core making machines at least to the level being assessed with relevant industry knowledge and experience
- satisfy the assessor requirements in the *Standards for Registered Training Organisations 2015* or its replacement and comply with the *National Vocational Education and Training Regulator Act 2011*, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory as the case requires
- Where possible assessment must occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

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