Australian Government

MEM04025 Produce moulds and cores by hand (advanced)

Release: 2

MEM04025 Produce moulds and cores by hand (advanced)

Modification History

Release 2. Quantum of hours of workplace practice removed. Supersedes and is equivalent to MEM04025 Produce moulds and cores by hand (advanced) (Release 1).

Release 1. Supersedes and is not equivalent to MEM04005C Produce moulds and cores by hand (jobbing).

Application

This unit of competency has been developed for Engineering Tradesperson – Casting and Moulding apprenticeship training and the recognition of trade-level skills in the production of moulds and cores using advanced manual (jobbing) methods. It defines the skills and knowledge required to use advanced manual (jobbing) methods to produce moulds and cores for the production of metal castings and includes the ability to match patterns, moulds and cores to meet requirements.

Where the selection and use of welding skills is required unit MEM05012 Perform routine manual metal arc welding and unit MEM05050 Perform routine gas metal arc welding, should also be selected as appropriate.

Where lifting and moving moulds and cores requires the use of mobile load shifting equipment or overhead cranes, appropriate manual handling units should also be selected.

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

Band: **A**

Unit Weight: **12**

Pre-requisite Unit

MEM04024	Produce moulds and cores by hand
MEM09002	Interpret technical drawing
MEM11011	Undertake manual handling
MEM12023	Perform engineering measurements
MEM12024	Perform computations
MEM13015	Work safely and effectively in manufacturing and engineering
MEM14006	Plan work activities
MEM16006	Organise and communicate information

MEM18001	Use hand tools
MEM18002	Use power tools/hand held operations

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.	
1	**Determine job requirements**	1.1	Follow standard operating procedures (SOPs)
		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, drawings, job sheets or work instructions
		1.5	Determine sequence of operations, including material selection, job set up, for maximum safety, efficiency and to meet job specifications
2	**Select inspect and prepare pattern equipment**	2.1	Identify pattern and associated equipment from specifications
		2.2	Inspect pattern equipment conformance to specifications, and identify damaged patterns for repair or replacement
		2.3	Assemble pattern to specification
		2.4	Set up pattern equipment to specification
3	**Make mould and core**	3.1	Position core in prints utilising chaplets and chills, as required, and vent to specification
		3.2	Close mould and check for compliance to component

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		specification
	3.3	Select and position appropriate moulding/core making equipment
	3.4	Select and use appropriate moulding media to produce mould and core to specification
	3.5	Secure mould
	3.6	Select or manufacture pouring basin to specification and position in accordance with procedures
	3.7	Ram up mould and cores with joints and drawbacks as required
	3.8	Use parting and stripping systems
	3.9	Position and secure loose pieces, vents, risers and runners as required
	3.10	Remove pattern and loose pieces from mould and core box in safely and without causing damage to the pattern
	3.11	Inspect and repair mould as required
	3.12	Clean and paint mould and core according to specification using site procedures
4 **Complete work requirements**	4.1	Leave the worksite in a safe state, including clearing all materials/debris and cleaning the worksite
	4.2	Dispose of unwanted treated sand according to SOPs
	4.3	Complete reports/records in accordance with SOPs

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.

Materials include one (1) or more of the following:	• binders • hardeners • sand additives • mould coatings
Patterns include one (1) or more of the following:	• irregular/uneven • patterns with undercuts • multi-joint • consumable • loose piece patterns • patterns requiring odd sides • core assembly patterns
Moulds include one (1) or more of the following:	• undercut/drawback • irregular/uneven jointed • multi-part moulds
Cores include one (1) or more of the following:	• full • half • segment
Mould securing methods include one (1) or more of the following:	• weights • clamps • bolting
Moulding media includes one (1) or more of the following:	• green sand • shell sand • chemically bonded media
Pouring basins include one (1) or more of the following:	• hand • pattern formed
Parting and stripping	• dry

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systems include one (1) or more of the following:	• wet

Unit Mapping Information

Release 2. Supersedes and is equivalent to MEM04025 Produce moulds and cores by hand (advanced) (Release 1).

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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