



Australian Government

MEM04022 Examine appropriateness of methoding for mould design

Release: 2

MEM04022 Examine appropriateness of methoding for mould design

Modification History

Release 2. Quantum of hours of workplace practice removed. Supersedes and is equivalent to MEM04022 Examine appropriateness of methoding for mould design (Release 1).

Release 1. Supersedes and is equivalent to MEM04022A Examine appropriateness of methoding for mould design.

Application

This unit of competency defines the skills and knowledge required to examine the methoding (gating, running and feeding of castings) for mould designs using basic metallurgical techniques and skills. This work is under the overall direction of a metallurgist.

It applies to a foundry tradesperson who has to examine the appropriateness of own or others methoding for a mould design using basic metallurgical skills and techniques supported by normal empirical trade skills.

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

Band: B

Unit Weight: 4

Pre-requisite Unit

MEM04024	Produce moulds and cores by hand
MEM04025	Produce moulds and cores by hand (advanced)
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

MSATCM304A Interpret basic binary phase diagrams

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	<p>1.1 Follow standard operating procedures (SOPs)</p> <p>1.2 Comply with work health and safety (WHS) requirements at all times</p> <p>1.3 Use appropriate personal protective equipment (PPE) in accordance with SOPs</p> <p>1.4 Identify job requirements from specifications, drawings, job sheets or work instructions</p>
2	Evaluate proposed mould design for methoding requirements	<p>2.1 Identify risk management strategies to minimise defect formation</p> <p>2.2 Identify desired solidification process and take into account casting design, metal composition, mould design and specifications</p> <p>2.3 Identify running, gating and feeding principles and techniques appropriate for the particular casting</p> <p>2.4 Identify methods to minimise shrinkage, porosity, segregation, hot tearing and shear</p> <p>2.5 Examine suitability of methoding, including gating and the number, placement and sizing of feeders/risers</p> <p>2.6 Enter data where required to facilitate the generation of a computer simulation of methoding and casting process for later comparison to actual casting</p>

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

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| 3 Report results | <p>3.1 Compare casting results with computer simulated predictions</p> <p>3.2 Determine reporting requirements</p> <p>3.3 Prepare reports and circulate for feedback and file in accordance with SOPs</p> <p>3.4 Communicate suggestions for improvements directly to other team members where appropriate</p> |
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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.

Size and number of feeder heads and gating includes the following:

- manual calculation and use of computer programs within defined design parameters

Unit Mapping Information

Release 2. Supersedes and is equivalent to MEM04022 Examine appropriateness of methoding for mould design (Release 1).

Release 1. Supersedes and is equivalent to MEM04022A Examine appropriateness of methoding for mould design.

Links

Companion Volume implementation guides are found in VETNet -

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

