



Australian Government

MEM04038 Produce polymer patterns

Release: 1

MEM04038 Produce polymer patterns

Modification History

Release 1. Supersedes and is equivalent to MEM04011 Produce polymer patterns (Release 2).

Application

This unit of competency defines the skills and knowledge required to design, manufacture and finish polymer patterns.

It applies to the manufacture of investment casting dies and polymer patterns for medium production castings, core boxes, tooling aids and jigs and checking of fixtures. Construction includes solid polymer, filled, laminated fibreglass or metal inserts.

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

Band: A

Unit Weight: 8

Pre-requisite Unit

MEM07032 Use workshop machines for basic operations

MEM09002 Interpret technical drawing

MEM11011 Undertake manual handling

MEM12023 Perform engineering measurements

MEM12024 Perform computations

MEM13003 Work safely with industrial chemicals and materials

MEM13004 Work safely with molten metals/glass

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	Performance Criteria
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<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
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
2. Inspect and prepare patterns or cores	2.1 Inspect patterns or cores for appropriate surface finish and set up on joint line or flat board to specification 2.2 Select and apply appropriate parting agent to specifications
3. Manufacture moulds, patterns and tooling aids	3.1 Select appropriate polymer materials to specifications 3.2 Mix polymer and hardener to correct ratios and specifications using manufacturer safety guidelines and standard operating procedures (SOPs) 3.3 Apply polymer to specification and use predetermined methods, ensuring that air is not entrapped in application, excessive heat is not generated and delamination does not occur in final use 3.4 Strip, inspect, clean and repair pattern or core box to specifications 3.5 Machine and finish faces of polymer pattern to specifications 3.6 Apply appropriate method of location to patterns or core boxes 3.7 Check polymer tooling for conformance to specifications

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

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.

<i>Specifications include one</i>	drawings
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<i>or more of the following:</i>	• job sheets • work instructions.
Surface finish includes one or more of the following:	• texture • gel coat • aluminium fill.
Parting agent includes one or more of the following:	• wax • polyvinyl acetate (PVA).
Polymer materials include one or more of the following:	• epoxy resins • urethane.
Method of location includes one or more of the following:	• male and female joint • pin and bush.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM04011 Produce polymer patterns (Release 2).

Links

Companion Volume implementation guides are found in VETNet -

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