



**Australian Government**

# **MEM04002 Perform gravity die casting**

**Release: 1**

## MEM04002 Perform gravity die casting

### Modification History

Release 1. Supersedes and is equivalent to MEM04002B Perform gravity die casting

### Application

This unit of competency defines the skills and knowledge required to perform gravity die casting into permanent dies.

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: 2**

### Pre-requisite Unit

MEM11011	Undertake manual handling
MEM13004	Work safely with molten metals/glass
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.

1 **Determine job** 1.1 Follow standard operating procedures (SOPs)

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<b>requirements</b>	<ul style="list-style-type: none"><li>1.2 Comply with work health and safety (WHS) requirements at all times</li><li>1.3 Use appropriate personal protective equipment (PPE) and apparatus in accordance with SOPs</li><li>1.4 Identify job requirements from specifications, job sheets or work instructions</li></ul>
2 <b>Prepare equipment</b>	<ul style="list-style-type: none"><li>2.1 Mix die coat in correct proportion in accordance with SOPs</li><li>2.2 Lift and maintain die temperatures at the appropriate level</li><li>2.3 Apply die coat in the correct sequence</li><li>2.4 Locate and close die</li><li>2.5 Place die on machine and attach and tighten toggle clamps to required torque</li><li>2.6 Attach air cooling to the die as specified if required</li></ul>
3 <b>Carry out manual pouring</b>	<ul style="list-style-type: none"><li>3.1 Undertake pour in a manner which reduces porosity and lamination</li><li>3.2 Identify conditions that contribute to inferior castings or rejects</li><li>3.3 Allow adequate cooling time</li><li>3.4 Pour at a continuous and appropriate rate during filling</li><li>3.5 Monitor condition of die coating condition and re-spray as required</li></ul>
4 <b>Remove materials</b>	<ul style="list-style-type: none"><li>4.1 Remove parts in a manner that minimises damage</li><li>4.2 Remove any flash from the die surface</li></ul>

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4.3 Store parts in a manner that minimises damage

## 5 Clean die

5.1 Operate shot blaster according to procedures

5.2 Take chemical analysis of melt and apply remedial action as required

5.3 Dross and/or degas furnace

5.4 Clean work area of coating and shot residue

5.5 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.

**Metals include one (1) or more of the following:**

- aluminium
- aluminium alloys
- non-ferrous
- ferrous

**Appropriate safety clothing and apparatus includes one (1) or more of the following:**

- Aluminium Association safety status sheet recommendations
- glasses
- aluminised suits
- masks
- gloves
- gauntlet

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## **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>