



Australian Government

MEM48005 Apply basic knowledge of casting operations

Release: 1

MEM48005 Apply basic knowledge of casting operations

Modification History

Release 1. Supersedes and is equivalent to MSATCM305A Demonstrate basic knowledge of casting operations.

Application

This unit of competency defines the knowledge and skills required to convey basic job requirements with a tradesperson, members of a team, production manager or customer.

It covers a basic understanding of the principles and commercial metal casting practices and will enable a person to be able to safely access areas of a metal casting business and to identify and explain casting processes.

This unit is for introductory training in metallurgy where a person does not have any prior casting work experience. All work is carried out under supervision and in consultation with others.

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

Pre-requisite Unit

Nil

Competency Field

Metallurgy

Elements and Performance Criteria

Elements	Performance Criteria
<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 Identify job requirements from work information
2. Apply basic knowledge of casting processes	2.1 Identify the major areas and activities of foundry work including melting, casting, heat treatment, pattern and mould making, finishing and despatch 2.2 Identify the major items of equipment and their purpose in each

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	foundry area 2.3 Identify the most common metals and alloys used in casting processes 2.4 Observe and monitor the flow of metal through the foundry in the correct order
3. Demonstrate knowledge of foundry terminology	3.1 Use correct names for foundry processes and equipment 3.2 Identify properly metals and alloys including their chemical composition
4. Identify basic understanding of commercial aspects of foundry operations	4.1 Identify major advantages and disadvantages of casting over other metal manufacturing processes 4.2 Identify key cost factors including energy, material and labour 4.3 Observe a basic WHS and environmental requirements of foundries

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.

Casting processes includes one or more of the following:	• melting • pouring • casting • patternmaking • mould preparation including sand moulds • dies • metal moulds • lost wax and lost foam casting • heat treatment
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	• finishing • despatch and testing.
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Unit Mapping Information

Release 1. Supersedes and is equivalent to MSATCM305A Demonstrate basic knowledge of casting operations.

Links

Companion Volume Implementation Guides are available on VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>
