



Australian Government

MEM48002 Monitor ferrous melting and casting processes

Release: 1

MEM48002 Monitor ferrous melting and casting processes

Modification History

Release 1. Supersedes and is equivalent to MSATCM302A Monitor ferrous melting and casting processes.

Application

This unit of competency defines the skills and knowledge required to monitor the melting and casting of the alloys of iron and steel.

It applies where a technician will be required to monitor a ferrous melting and casting operation, ensuring that correct quantities and temperatures are used, and correct procedures followed.

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 Use appropriate personal protective equipment (PPE) in accordance with SOPs 1.4 Identify job requirements from work information
2. Identify specifications for required casting	2.1 Identify required material specification 2.2 Identify mould requirements 2.3 Identify any special appropriate requirements

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
3. Verify metal changes to melting	3.1 Select required components to give the required metal specification 3.2 Calculate required charge of each component 3.3 Recommend changes or additions to the charge 3.4 Monitor the preparation of the charge including checking for contaminants
4. Monitor furnace operation	4.1 Check that the furnace is in good operational condition and that appropriate lining is present 4.2 Identify need for maintenance and/or repairs and organise accordingly 4.3 Monitor a melt to ensure the product meets specification
5. Monitor pouring of molten metal	5.1 Check that the ladle is in good operational condition and that appropriate lining is present 5.2 Check pouring is to procedures 5.3 Take required samples for analysis
6. Control hazards	6.1 Identify hazards in the metal melting and pouring process 6.2 Assess the risks arising from those hazards 6.3 Implement procedures to control those hazards in line with procedures and duty of care

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.

Material specification	ferrous metals
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includes one or more of the following:	• ferrous alloys.
Contaminants include one or more of the following:	• non-specified metal • rubber • grease • water • paint and non-metallics • closed containers or pipes • pressure containers including aerosols.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MSATCM302A Monitor ferrous melting and casting processes.

Links

Companion Volume implementation guides are found in VETNet -

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