



Australian Government

MEM48007 Monitor and test sands, cores and moulds

Release: 1

MEM48007 Monitor and test sands, cores and moulds

Modification History

Release 1. Supersedes and is equivalent to MSATCM402A Monitor and test sands, cores and moulds.

Application

This unit of competency defines the knowledge and skills required to analyse mould and or core performance in terms of their design and sands used.

It applies where a technician will be required to draw conclusions as to the appropriateness of mould and/or core design and sand type chosen and make recommendations about design and selection of sands.

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 1.3 Use appropriate personal protective equipment (PPE) in accordance with SOPs 1.4 Identify job requirements from work information
2. Control hazards	2.1 Identify hazards in the sand mould and/or core making process 2.2 Assess the risks arising from those hazards 2.3 Implement procedures to control those hazards in line with procedures and duty of care

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. Select appropriate sand characteristics for job and process	3.1 Determine requirements of the casting 3.2 Identify types of sand appropriate for the type of mould or core 3.3 Identify types of binders appropriate for the job 3.4 Select sand and/or binder mix appropriate for the job
4. Prepare, test and evaluate moulding sand to desired characteristics	4.1 Monitor preparation of bonded sand mix 4.2 Test materials prepared 4.3 Evaluate test results and report
5. Evaluate finished casting for defects related to sand characteristics	5.1 Examine casting for sand-related defects 5.2 Determine cause of sand-related defects 5.3 Recommend improvements to sand type and/or preparation
6. Report results	6.1 Identify reporting requirements 6.2 Prepare report to meet requirements 6.3 Circulate and file report to procedures

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.

Hazards include:	- identification by standard techniques including safety data sheets (SDS) - control according to the hierarchy of control and SOPs.
Bonded materials for sand include one or more of the	- clay - organic binders

following:	• inorganic binders.
Sand-related defects include one or more of the following:	• wash • expansion • scabbing • rat-tails.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MSATCM402A Monitor and test sands, cores and moulds.

Links

The MEM Metal and Engineering Training Package Companion Volume Implementation Guide is available from VETNet -

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