



Australian Government

Assessment Requirements for MEM48019 Monitor secondary steel making operations

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MSATCM508A Monitor secondary steelmaking operations.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- identifying and interpreting specifications, safety procedures and other reference material to monitor secondary steel making operations
- meeting specifications for furnace output on at least two occasions
- communicating within the workplace
- maintaining accurate records.

Note: Where a volume and/or frequency is not specified, demonstration must be provided at least once.

Knowledge Evidence

Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include knowledge of:

- safe work practices and procedures and use of personal protective equipment (PPE)
- metallurgical principles
- post steel making methods employed including:
 - ladler stirring
 - ladle heating and ladle furnace
 - degassing including vacuum, ladle, stream and circulating
 - argon oxygen decarburation (AOD)
 - electroslag refining and remelting (ESR)
 - vacuum melting
- types of steel including ingot characteristics of rimmed, capped, killed and semi-killed
- factors contributing to successful casting
- ingots including:
 - influence of pouring techniques on structures of ingots
 - pit practices
 - teeming including type of ingot moulds
- mode of solidification including:

- types of ingot structure
- control of ingot structure
- ingot defects
- continuous casting processes including:
 - basic principles
 - need for concast
 - development including new technologies and facilities of continuous casting for concast
 - types of concast units including vertical continuous caster (VCC), horizontal continuous caster (HCC) and curvilinear
 - description of plant equipment and process principles, concast operations
- metallurgical aspects including:
 - instrumentation - sensor quality
 - solidification/internal quality
 - defects and their origin - avoidance of defects
- comparison of concast units and static ingot production.
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Assessment Conditions

- Assessors must:
 - have vocational competency in monitoring secondary steel making operations at least to the level being assessed with relevant industry knowledge and experience
 - satisfy the assessor requirements in the *Standards for Registered Training Organisations 2015* or its replacement and comply with the *National Vocational Education and Training Regulator Act 2011*, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory as the case requires.
- Where possible, assessment must occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions that cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required including relevant workplace procedures, product and manufacturing specifications.
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
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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>

