



Australian Government

Assessment Requirements for MEM04001 Operate melting furnaces

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM04001B Operate melting furnaces

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria on at least two (2) occasions and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- identifying and interpreting specifications and relevant test data sheets for furnace operation
- completing materials requisitions as required
- undertaking charge analysis and converting charge analysis to furnace charge weight and weighing the weight in accordance with procedures
- completing the start-up procedures for the applicable furnace, including completing routine operational maintenance and inspection for any:
 - defects
 - damage
 - faults
 - areas for routine repair
- starting up and charging applicable furnace whilst following emergency/safety procedures, including identifying suitable areas for emergency unloading of molten metal
- maintaining the furnace at optimum operating condition, including:
 - taking sample for chemical analysis and applying remedial action as required
 - drossing and/or degassing furnace
 - checking temperature of metal and adjusting if necessary
- undertaking tapping or unloading of furnace by identifying the quantity of required metal to SOPs
- completing shutdown and performing routine operational maintenance.

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)
- refractory conditions, faults, and routine repair and maintenance
- condition of cooling water supply

- starting procedures for different types of furnaces
- metallic charge materials and alloying elements
- weighing procedures and scale types
- correct order of loading of different charge materials
- thermocouple condition monitoring and adjustment mechanism for furnace
- interpretation of carbon equivalent and wedge test results
- degassing procedures, including tablet, lance and other procedures
- coagulant agents, application procedures and slag removal procedures
- shutdown procedures
- applicable industry standards, national/Australian Standards, Safe Work Australia guidelines, and state/territory regulatory codes of practice/standards.

Assessment Conditions

- Assessors must:
 - have vocational competency in operating melting furnaces 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. This must 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.

Links

Companion Volume implementation guides are found in VETNet -

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