



Australian Government

Assessment Requirements for MEM23113 Evaluate hydrodynamic systems and system components

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM23113A Evaluate hydrodynamic systems and system components.

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:

- determining parameters and context of evaluation task
- determining work health and safety (WHS), regulatory requirements, risk management and organisational procedures
- identifying features, functions and components of hydrodynamic systems
- investigating and reviewing sustainability implications, features and functions of hydrodynamic systems and components on at least two occasions
- applying hydrodynamic principles and analysis techniques for hydrodynamic systems including software and software validation techniques
- evaluating components and system compatibility with fluid properties, pumps, turbines, piping forces, hydrodynamic performance of components, open channel systems, collar and cylindrical lubrication and determining safety, efficiency and fitness for purpose on at least two occasions
- reporting and documenting process and results of evaluation.

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:

- hydrodynamic systems
- WHS and regulatory requirements, codes of practice, standards, risk management and organisation requirements
- availability of professional and technical assistance for engineering specialisations
- current options and trends in performance analysis software including underpinning program techniques and software validation techniques
- properties of fluids including:
 - fluid types
 - relevant units of measurement
 - chemical properties
- sustainability issues including:

- hydrodynamic energy, generation and consumption
- environmental effects of manufacturing and use
- fluid statics
- fluid dynamics including:
 - flow
 - velocity
 - viscosity
 - pressure
 - fluid power
 - hydrodynamic forces
- hydrodynamic system components
- head loss in pipes and fittings
- pumping systems including components and methods for determining efficiency
- forces developed by flowing fluids
- open channel flow
- oiled bearings
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Assessment Conditions

- Assessors must:
 - have vocational competency in evaluating hydrodynamic systems and system components 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>