



Australian Government

**Assessment Requirements for MARL012
Apply basic principles of marine mechanics**

Release: 1

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Modification History

Release 1. New unit of competency.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least one occasion and include:

- applying relevant work health and safety/occupational health and safety (WHS/OHS) requirements and work practices
- assessing own work outcomes and maintaining knowledge of current codes, standards, regulations and industry practices
- identifying and applying relevant mathematical formulas and techniques to solve basic problems related to marine mechanics
- identifying and interpreting numerical and graphical information, and performing mathematical calculations to determine resultant and equilibrant of coplanar forces, linear and angular velocity, and hoop and longitudinal stress in thin walled pressure vessels
- identifying, collating and processing information required to perform basic calculations related to marine mechanics
- reading and interpreting written information needed to perform basic calculations in marine mechanics
- solving problems using appropriate laws and principles
- performing accurate and reliable mathematical calculations using a calculator.

Knowledge Evidence

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

- centre of gravity
- conservation of energy theorem
- effective verbal, written and visual communication strategies
- factor of safety
- force
- joint efficiency factor
- laws of motion
- momentum

- nature and laws of friction
- pressure vessels
- principles of marine mechanics
- stress and strain
- thin cylinder theory
- types and uses of simple machines
- WHS)/(OHS requirements and work practices.

Assessment Conditions

Assessors must satisfy National Vocational Education and Training Regulator (NVR)/Australian Quality Training Framework (AQTF) assessor requirements.

Assessment must satisfy the National Vocational Education and Training Regulator (NVR)/Australian Quality Training Framework (AQTF) standards.

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.

Assessment must occur in workplace operational situations or where these are not available, in simulated workplace operational situations or an industry-approved marine operations site that replicates workplace conditions where basic principles of marine mechanics can be applied.

Resources for assessment include access to:

- diagrams, specifications and other information required for performing basic calculations related to marine mechanics
- relevant regulatory and equipment documentation that impacts on work activities including workplace procedures, regulations, codes of practice and operation manuals
- technical reference library with current publications on basic marine mechanics
- tools, materials and equipment and personal protective equipment currently used in industry.

Performance should be demonstrated consistently over time and in a suitable range of contexts.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=772efb7b-4cce-47fe-9bbd-ee3b1d1eb4c2>