



Australian Government

Assessment Requirements for MARL010

Apply basic principles of marine electrotechnology

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 electrotechnology
- identifying and interpreting numerical and graphical information, and performing mathematical calculations such as resistance of electrical conductors, power output and efficiency in DC motors, and driving torque in induction motors
- identifying, collating and processing information required to perform basic calculations related to marine electrotechnology
- performing accurate and reliable calculations
- reading and interpreting written information needed to perform basic electrical calculations
- solving problems using appropriate laws and principles.

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:

- AC:
 - rotating machinery
 - principles
- basic electrical circuits
- basic principles of marine electrotechnology
- batteries
- DC:
 - rotating machinery

- motors
- difference between AC and DC
- electrical:
 - current
 - power
 - safety
 - units of measurement
- electromagnetic:
 - induction
 - force
- effective verbal, written and visual communication techniques
- Ohm's Law
- parallel circuits
- principles of electromagnetism and electrolytic action
- resistance
- series circuits
- 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 electrotechnology can be applied.

Resources for assessment include access to:

- electrical diagrams, specifications and other information required for performing basic electrical calculations
- relevant and appropriate tools, equipment and personal protective equipment currently used in industry
- relevant documentation including workplace procedures, regulations, codes of practice and operation manuals
- technical reference library with current publications on basic marine electrotechnology.

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>