



Australian Government

**Assessment Requirements for AURRTR006
Diagnose and repair marine electrical
systems**

Release: 1

Assessment Requirements for AURRTR006 Diagnose and repair marine electrical systems

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- diagnose and repair a fault in the following marine electrical systems and components:
 - dash instrumentation
 - switch and fuse panels
 - bilge pump system
 - lighting system
 - depth sounder or fish finder
 - global positioning system (GPS)
 - marine radio.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to diagnosing and repairing marine electrical systems and components, including procedures for:
 - checking and dealing with flammable gas build-up in boats, including LPG and hydrogen, prior to starting electrical system work
 - working with potentially high-current electrical systems
- operating principles of electrical system circuits and associated components, including:
 - Ohm's law
 - electromagnetic interference
- application, purpose and operation of marine electrical systems and components, including:

- marine vessel lighting systems, including marine regulations for vessel lighting
- dash instrumentation
- switch and fuse panels
- bilge pump systems
- depth sounders and fish finders
- GPS
- marine radios
- 12 volt marine accessories, including winches
- autopilot and radar
- marine battery charge management systems
- networked communication topographies
- diagnostic testing procedures for marine electrical systems and components, including:
 - testing for circuit resistance, voltage drop and current draw
 - testing for open and short circuits
 - testing for shorts to power circuits and grounds
 - inspecting for component moisture ingress and connector damage
 - testing marine battery charge management systems
 - testing networked communication topographies
- repair procedures for marine electrical systems and components, including procedures for:
 - selecting wiring gauge
 - soldering wiring
 - insulating wiring
 - crimping terminals
 - removing and replacing connectors
 - repairing networked communication topographies
- post-repair testing procedures for marine electrical systems and components.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the marine electrical systems that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- marine repair workplace or simulated workplace

- workplace instructions
- manufacturer electrical system specifications
- marine vessel with faults in the electrical systems and components specified in the performance evidence
- diagnostic equipment for marine vessel electrical systems
- tools, equipment and materials appropriate for repairing marine vessel electrical systems.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

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