Title	**Diagnose, repair, and test marine engine electrical wiring faults**		
Level	**4**	**Credits**	**5**

Purpose	People credited with this unit standard are able to: explain marine engine electrical wiring schematics; diagnose and repair marine engine electrical wiring faults; and test marine engine electrical circuits.

Classification	Boating Industries > Boatbuilding

Available grade	Achieved

Guidance Information

1 Legislation, regulations, references and/or industry standards relevant to this unit standard include but are not limited to the:

- Health and Safety at Work Act 2015
- Resource Management Act 1991.

Any new, amended or replacement Acts, regulations, rules, standards, codes of practice, guidelines, or authority requirements or conditions affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.

2 Assessment information
Assessment against this unit standard must be in accordance with manufacturers' specifications.
Range
marine engine – inboard or outboard.

3 Definitions
Manufacturers' specifications refer to technical information of a boat or product detailing: operation, installation and servicing procedures; technical terms and descriptions; and illustrations. Manufacturer specifications must be followed to ensure compliance with manufacturer warranty, safe operation, and operation that meets manufacturer performance claims.
Workplace policies and procedures refers to the documented procedures and policies providing guidelines of the tasks and activities carried out in the workplace. This typically includes relevant health and safety policies to manage hazards and/or risks in the workplace.

Outcomes and performance criteria

Outcome 1

Explain marine engine electrical wiring schematics.

Performance criteria

1.1 Wiring schematic information is explained in relation to marine engine electrical systems.

Range circuit protection, coding and routing of wires, location and specification of components and connectors.

1.2 Current capacity ratings in a cable are identified in terms of cable types and applications.

Outcome 2

Diagnose and repair marine engine electrical wiring faults.

Performance criteria

2.1 Marine engine electrical circuits are checked and faults are diagnosed.

2.2 Electrical wiring components are selected in accordance with current capacity requirements and suitability for the marine environment.

Range components include – cable types, cable size, battery types, cable load capacity.

2.3 Damaged electrical circuits are repaired or replaced in accordance with job specifications.

Range wires include – single connectors, multiple connectors, cables, looms.

2.4 All joins are insulated for adequate protection and suitable for the marine environment.

2.5 Short circuit faults are located and rectified.

Outcome 3

Test marine engine electrical circuits.

Performance criteria

3.1 Electrical circuit is tested to ensure adequate circuit protection.

3.2 Electrical circuit is tested to ensure circuit and components meet job specifications.

Planned review date	31 December 2030

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	26 July 2018	31 December 2027
Review	2	29 May 2025	N/A

Consent and Moderation Requirements (CMR) reference	0136

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Comments on this unit standard

Please contact Hanga-Aro-Rau Engineering, Manufacturing and Logistics Workforce Development Council at qualifications@hangaarorau.nz if you wish to suggest changes to this skill standard.