

Title	Demonstrate knowledge of documentation and compliance requirements for marine electrical systems		
Level	4	Credits	5

Purpose	People credited with this unit standard are able to demonstrate knowledge of: rules and standards to meet compliance requirements for marine electrical systems; and good electrical system documentation practice.
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Classification	Boating Industries > Boatbuilding
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Available grade	Achieved
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Guidance Information

- 1 Definitions
 - ABYC – American Boat and Yacht Council.
 - IEC – International Electrotechnical Commission.
 - ISO – International Standard Organisation.
 - NMEA – National Marine Electronics Association.
- 2 Assessment against this unit standard must be compliant in any of the following –
 - (a) Relevant rules of a classification society in accordance with hull or full certification standards for the ship's operating limits.
 - (b) AS/NZS 3004.2:2014 – *Electrical installations – Marinas and recreational boats – Part 2: Recreational boats installations*, available at <https://shop.standards.govt.nz/>.
 - (c) ISO 10133:2017 – *Small craft – Electrical systems – Extra low voltage d.c. installations*, available at <https://shop.standards.govt.nz/>.
 - (d) NZ Maritime Rules Part 40D, available at www.maritimenz.govt.nz.
 - (e) Electrical (Safety) Regulations 2010, and any subsequent amendments, available at www.legislation.govt.nz.
- 3 References
 - International Association of Classification Societies, available at <http://www.iacs.org.uk/>.
 - International Electrotechnical Commission (IEC) – standards <http://www.iec.ch/>.
 - Maritime and marine protection rules (New Zealand), available at www.maritimenz.govt.nz.
 - National Marine Electronics Association (NMEA) <http://www.nmea.org/>.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of rules and standards to meet compliance requirements for marine electrical systems.

Range includes – IEC, AS/NZS 3004, maritime rules, NMEA, ABYC, classification societies.

Performance criteria

- 1.1 Rules and standards are described in terms of the effect and potential applications of the rules.
- 1.2 Compliance requirements on the design and installation of marine electrical and electronic systems are explained.

Outcome 2

Demonstrate knowledge of good electrical system documentation practice.

Performance criteria

- 2.1 The function of different types of documentation used for defining marine electrical systems is explained.

Range types of documentation include – wiring drawings, connection drawings, schematics, user manual, equipment specifications, component manuals.
- 2.2 The process of good practice electrical design and installation is described in terms of order of tasks performed.
- 2.3 Documentation preparation and use requirements are described for the different stages of design and installation.

Range stages include – preliminary design, approved design, as built design, purchasing, installation, testing, commissioning, hand over, maintenance.
- 2.4 Documentation storage media options are explained in terms of advantages, disadvantages, and good practice.

Range hard copy, electronic copy.

Planned review date	31 December 2025
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	20 May 2011	31 December 2022
Rollover and Revision	2	30 August 2018	31 December 2022
Review	3	27 August 2020	N/A

Consent and Moderation Requirements (CMR) reference	0136
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact the NZ Marine and Composites Industry Training Organisation training@nzmarine.com if you wish to suggest changes to the content of this unit standard.