

Title	Install marine electrical and electronic systems and equipment		
Level	3	Credits	20

Purpose	People credited with this unit standard are able to: establish installation requirements; run cabling; connect and mount the systems and equipment to the boat's structure; and check and static test the installation for marine electrical and electronic systems and equipment.
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Classification	Boating Industries > Boatbuilding
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Available grade	Achieved
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Guidance Information

- 1 Definition
Job specifications refers to the standard requirements of the jobs being undertaken.
- 2 All work practices must meet recognised codes of practice and workplace policies and procedures (where these exceed code) for personal, product, and workplace health and safety, and must meet the obligations required under the Health and Safety at Work Act 2015 and Resource Management Act 1991, and any subsequent amendments.
- 3 Range
Evidence of the performance criteria of this unit standard must be present across the following contexts:
 - a systems – AC/DC generation, distribution and reticulation systems; electrical vessel control and monitoring systems; marine electronic systems including communications, navigation, hydro acoustics and entertainment systems; evidence is required for one.
 - b equipment – electrical includes pumps, generators, batteries and electrical equipment attached to other systems, such as engines; electronic includes all communications, navigation, hydro acoustic, entertainment and electronic equipment attached to other systems, such as engines; evidence is required for one.

Outcomes and performance criteria

Outcome 1

Establish installation requirements for marine electrical and electronic systems and equipment.

Performance criteria

- 1.1 Installation position is located in accordance with job specifications.
- 1.2 Installation position is checked to ensure the boat's integrity is not compromised and to confirm it enables the subsequent attachment of any associated systems.
- 1.3 Installation requirements are established in accordance with system drawings and job specifications.
- 1.4 Materials and equipment are selected to meet job specifications.

Outcome 2

Run cabling.

Performance criteria

- 2.1 Areas established to run cables are matched with the commissioning plan.
- 2.2 Fixing, fastenings, cable types and current ratings are matched with the requirements of the cables being used.
- 2.3 Cables are run in accordance with job specifications and regulatory requirements.

Outcome 3

Connect and mount the systems and equipment to the boat's structure.

Performance criteria

- 3.1 Mounting requirements are identified in accordance with job specifications and manufacturer's recommendations.
- 3.2 Hardware and fastenings are selected in accordance with substrate materials and to meet job specifications for durability and appearance.
- 3.3 Systems and equipment are mounted in accordance with manufacturer's and boatbuilder's specifications.
- 3.4 Systems and equipment are connected to cabling in accordance with job specifications and manufacturer's specifications.

Outcome 4

Check and static test the installation.

Performance criteria

- 4.1 Equipment and systems are checked in terms of static testing installations.

- 4.2 All circuits are static tested with a multimeter to ensure they meet test requirements.
- 4.3 Checking and testing documentation is completed in accordance with regulatory requirements.

Planned review date	31 December 2027
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	27 August 1997	31 December 2024
Revision	2	20 March 2001	31 December 2024
Revision	3	16 April 2004	31 December 2024
Rollover	4	20 March 2009	31 December 2024
Rollover and Revision	5	26 July 2018	31 December 2024
Review	6	25 August 2022	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 Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council qualifications@hangaarorau.nz if you wish to suggest changes to the content of this unit standard.