

Title	Demonstrate and apply knowledge of theory and practice for registration of electrical workers (stage 3)		
Level	4	Credits	3

Purpose	<p>This unit standard is for people who are completing an electrical license and want to become registered and licenced with the Electrical Workers Registration Board.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – demonstrate and apply health and safety practices in an electrical workplace – demonstrate and apply knowledge to disconnect, test, and reconnect appliances or equipment – install and test electric motors – install and test motor starters – select and test electrical protection equipment – install, wire, and test a given electrical project – test existing single-phase and three-phase sub-circuit wiring – install, wire, and test discharge lighting.
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Classification	Electrical Engineering > Electrical Standards and Statutes
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Available grade	Achieved
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Prerequisite	Unit 29753, <i>Demonstrate and apply knowledge of theory and practice for registration of electrical workers (stage 2)</i> , or demonstrate equivalent knowledge and skills.
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Guidance Information

- 1 This unit standard may be used for learning and assessment off-job.
- 2 Under the Electricity Act 1992 the Electrical Workers Registration Board (EWRB) has a responsibility to set registration criteria for electrical workers and ensure that all persons applying for electrical registration are competent.
- 3 As part of the process to be eligible for registration as electrical workers, candidates must complete and pass a Stage 3 EWRB approved assessment which is based on the requirements of the EWRB *Teaching Guidelines*. Electricians, Electrical Engineers, Electrical Installers must also pass the EWRB Regulations examination.

The EWRB Stage 3 examination is the assessment tool for this unit standard, and credit for this unit standard may only be granted on evidence of passing this examination.

However, in terms of meeting the above requirement, candidates who have been awarded recognition of equivalent knowledge and skills from another Regulatory Body may gain exemption from the EWRB Stage 3 examination.

4 References

AS/NZS 3000 (version as cited in the Electricity (Safety) Regulations), *Electrical Installations (known as the Australian/New Zealand Wiring Rules)*

Electricity Act 1992

Electricity (Safety) Regulations 2010

EWRB *Teaching Guidelines* available at [Teaching guidelines and resources |](#)

[Electrical Workers Registration Board \(ewrb.govt.nz\)](#) The New Zealand Electrical Codes of Practice, available from [WorkSafe New Zealand](#)

and all subsequent amendments and replacements.

5 Definitions

Industry practice – those practices that competent practitioners within the industry recognise as current industry best practice.

RCD – Residual Current Device.

MEN – Multiple Earth and Neutral system.

PVC – Polyvinyl Chloride.

6 Range

a Candidates must refer to current legislation and Standards during assessment.

b Material required for EWRB examinations is available at [Exams and practical assessments | Electrical Workers Registration Board \(ewrb.govt.nz\)](#)

c All evidence presented for assessment against this unit standard must be in accordance with:

i legislation

ii policies and procedures

iii ethical codes

iv Standards – may include but are not limited to those listed in Schedule 2 of the Electricity (Safety) Regulations 2010

v applicable site, enterprise, and industry practice

vi where appropriate manufacturers' instructions, specifications, and data sheets.

Outcomes and performance criteria

Outcome 1

Demonstrate and apply health and safety practices in an electrical workplace.

Performance criteria

1.1 Explain cardiopulmonary resuscitation.

1.2 Apply safe working practices and procedures in an electrical workplace.

Outcome 2

Demonstrate and apply knowledge to disconnect, test, and reconnect appliances or equipment.

Performance criteria

- 2.1 Describe lockout and tag out procedures, isolation and disconnections of supply methods.
- 2.2 Disconnect and reconnect electrical appliances or equipment.
- 2.3 Test and tag three single-phase Class I and Class II in service appliances and one poly-phase in service appliance.

Outcome 3

Install and test electric motors.

Performance criteria

- 3.1 Install and test single-phase universal and induction motors and change rotation direction on each motor direction.
- 3.2 Install and test capacitor start, capacitor start/capacitor run, and split-phase motors and change rotation direction on each motor.

Outcome 4

Install and test motor starters.

Performance criteria

- 4.1 Install and test direct on line starting for three-phase cage induction motors including remote two-wire control and three-wire control.
- 4.2 Install and a test three-phase slip ring induction motor.
- 4.3 Install and test three-phase reduced voltage motor automatic starters, star/delta, primary resistance, and autotransformer.

Range evidence of two starter types is required.

Outcome 5

Select and test electrical protection equipment.

Performance criteria

- 5.1 Test RCDs installed for personal protection.
- 5.2 Test isolating transformer installed for personal protection.

5.3 Select and replace rewirable and high rupturing capacity fuses.

Outcome 6

Install, wire, and test a given electrical project.

Performance criteria

- 6.1 Visually check sub-circuit wiring for compliance.
- 6.2 Test an existing installation main earthing conductor and equipotential bonding and protective earthing conductors for compliance.
- 6.3 Test sub-circuit wiring for polarity and correct connections for compliance.
- 6.4 Test switchboard mounted RCDs affording personal protection for compliance.
- 6.5 Test single-phase and three-phase sub-circuits using appropriate test instruments to obtain voltage, current and earth fault loop impedance values.
- 6.6 Design, install and terminate sub-circuit wiring for single-phase lighting and socket-outlets, three-phase socket-outlets enclosed in PVC conduit for compliance.
- 6.7 Assemble and wire a MEN switchboard for a domestic installation that incorporates correct components, fittings, layout, wiring and terminations for compliance.
- 6.8 Design, install and connect electrical appliance control circuits including protective devices for domestic water heating or space heating or similar applications.
- 6.9 Design, install, terminate and protected lighting control circuits suitable for switching lighting banks in commercial and industrial applications. Control circuits are to include light sensing devices, contactors or relays.

Outcome 7

Test existing single-phase and three-phase sub-circuit wiring.

Performance criteria

- 7.1 Test an existing single-phase MEN installation.
- 7.2 Test an existing three-phase MEN installation.

Outcome 8

Install, wire, and test discharge lighting.

Range sodium vapour, mercury vapour, metal halide;
evidence of two is required.

Performance criteria

8.1 Install, wire, and terminate necessary components for high intensity discharge light fittings.

Planned review date	31 December 2028
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	17 November 2016	31 December 2025
Review	2	28 March 2024	N/A

Consent and Moderation Requirements (CMR) reference	0003
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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 Waihanga Ara Rau Construction and Infrastructure Workforce Development Council qualifications@WaihangaAraRau.nz if you wish to suggest changes to the content of this unit standard.