

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; and – install, wire, and test discharge lighting.
----------------	---

Classification	Electrical Engineering > Electrical Standards and Statutes
-----------------------	--

Available grade	Achieved
------------------------	----------

Entry information	
Critical health and safety prerequisites	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.

Explanatory notes

- 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 3000:2007, *Electrical Installations (known as the Australian/New Zealand Wiring Rules)*;
Electricity Act 1992;
Electricity (Safety) Regulations 2010;
EWRB *Teaching Guidelines* available at [EWRB - Publications](#);
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 [EWRB - Training and Examinations](#).
 - 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; and
 - vi where appropriate manufacturers' instructions, specifications, and data sheets.

Outcomes and evidence requirements

Outcome 1

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

Evidence requirements

- 1.1 Explain cardio pulmonary 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.

Evidence requirements

- 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.

Evidence requirements

- 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.

Evidence requirements

- 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 is required for two starter types.

Outcome 5

Select and test electrical protection equipment.

Evidence requirements

- 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.

Evidence requirements

- 6.1 Visual checks of 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 Construct/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.

Evidence requirements

- 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.

Evidence requirements

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

Planned review date	31 December 2021
----------------------------	------------------

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	17 November 2016	N/A

Consent and Moderation Requirements (CMR) reference	0003
--	------

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

Please note

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMRs). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

Comments on this unit standard

Please contact The Skills Organisation reviewcomments@skills.org.nz if you wish to suggest changes to the content of this unit standard.