

Title	Demonstrate knowledge of damp situations, SELV and PELV systems, and single-phase transformers		
Level	3	Credits	5

Purpose	People credited with this unit standard are able to demonstrate knowledge of: <ul style="list-style-type: none"> – damp situations; – SELV and PELV systems; and – single-phase transformers.
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Classification	Electrical Engineering > Core Electrical
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Available grade	Achieved
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Guidance Information

- 1 References
AS/NZS 3000 (version as cited in the Electricity (Safety) Regulations), *Electrical Installations (known as the Australian/New Zealand Wiring Rules)*; or any current subsequent amendments and replacements.
- 2 Definitions
IP rating – ingress protection rating.
PELV – protected extra-low voltage.
SELV – separated extra-low voltage.
- 3 This unit standard can be used together with other relevant unit standards, additional learning and workplace training to meet the requirements of the Electrical Workers Registration Board (EWRB) core competencies, available at <https://www.ewrb.govt.nz>.
- 4 Candidates are expected to locate and reference the relevant clauses in electrical Standards relating to this unit standard.
- 5 Where needed, sketches and drawings may be used to aid explanations.
- 6 This unit standard applies to installations and equipment rated above extra-low voltage unless specifically stated.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of damp situations.

Performance criteria

- 1.1 Identify location boundaries of damp zones.
Range three boundary identifications.
- 1.2 Identify the limitations of electrical equipment and fittings in damp zones.
Range two different damp zones.
- 1.3 Identify the appropriate circuit protection and IP ratings required for the location of electrical equipment in damp situations.
Range two different damp situations.
- 1.4 Identify equipotential bonding requirements for a room containing a shower or a bath.

Outcome 2

Demonstrate knowledge of SELV and PELV systems.

Performance criteria

- 2.1 Describe SELV and PELV systems and their applications.
- 2.2 Identify requirements for SELV and PELV installations from AS/NZS 3000.
Range one SELV, one PELV installation.

Outcome 3

Demonstrate knowledge of single-phase transformers.

Performance criteria

- 3.1 Describe the construction of a single-phase transformer.
Range double wound, auto transformer;
construction must include – core, windings, winding connections.
- 3.2 Explain the operating principles of a single-phase transformer.
Range one of double wound, auto transformers.
- 3.3 Describe the features, applications, and restrictions of single-phase transformers.
Range one of double wound, auto or instrument transformers.
- 3.4 Explain the operating principles, and safety precautions for using isolating transformers.

Planned review date	31 December 2026
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	24 March 2022	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 Waihanga Ara Rau Construction and Infrastructure Workforce Development Council at qualifications@waihanga.nz if you wish to suggest changes to the content of this unit standard.