

Title	Demonstrate knowledge of electrical installations in special situations		
Level	4	Credits	6

Purpose	<p>This unit standard is intended for people working in the electrical industry and covers essential basic knowledge relating to electrical installations in special situations.</p> <p>People credited with this unit standard are able to demonstrate knowledge of electrical requirements for:</p> <ul style="list-style-type: none"> – electrical installations and equipment in explosive atmospheres; – electrical installations in damp situations; – relocatable premises and their site supplies; – marinas and pleasure craft; – patient treatment and electro-medical areas; – high voltage installations; – electrical installations for construction and demolition sites; and – other special electrical installations.
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Classification	Electrical Engineering > Core Electrical
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Available grade	Achieved
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Guidance Information

- 1 This unit standard has been developed for learning and assessment off-job.
- 2 Achievement of this unit standard does not by itself imply competency in performing work in explosive atmospheres or other special situations.
- 3 This unit standard and unit standards 15869 and 16415 together meet the assessment requirements of ERAC CEPCs 25.
This unit standard and unit standards 2021, 17602, and 29468 together meet the assessment requirements of ERAC CEPCs 26.
This unit standard meets the assessment requirements of ERAC CEPCs 28.
This unit standard and unit standards 2021, 29419, and 29482 meet the assessment requirements of ERAC EPCs 29.
This unit standard and unit standards 17602, and 29465 meet the assessment requirements of ERAC CEPCs 42.
- 4 Definitions
CEPC – Critical Essential Performance Capability.
EPC – Essential Performance Capability.

ERAC – Electrical Regulatory Authorities Council.

Explosion-protection techniques – Ex – techniques applied to the design of electrical apparatus, components, and systems to prevent the electrical energy from becoming an ignition source in the presence of flammable vapours and gases or combustible dusts in explosive atmospheres. See *explosion-protected apparatus*.

Explosion-protected apparatus – electrical apparatus to which specific measures are applied to avoid ignition of a surrounding explosive atmosphere. Such apparatus employs one or more explosion-protection (Ex) techniques.

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

Safe and sound practice – as it relates to the installation of electrical equipment is defined in AS/NZS 3000:2007, *Electrical Installations (known as the Australian/New Zealand Wiring Rules)*.

Special situations include – hazardous areas, pleasure vessels and marinas, medical areas, caravans and caravan parks, and high voltage installations.

5 Range

- a Candidates may refer to current legislation and Standards during assessment.
- b Demonstration of safe working practices and installation in accordance with *safe and sound practice* are essential components of assessment of this unit standard.
- c All activities and evidence presented for all outcomes and performance criteria in 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 performance criteria

Outcome 1

Demonstrate knowledge of electrical requirements for electrical installations and equipment in explosive atmospheres.

Performance criteria

- 1.1 Describe the principles of combustion in terms of the fire triangle.
- 1.2 Outline the properties of flammable dusts, gases, and vapours.
- 1.3 Outline six sources of ignition.
- 1.4 Describe hazardous area zone classifications in simple terms.
- 1.5 Describe requirements for electrical installations in hazardous areas.
- 1.6 Describe safety precautions to be observed for areas zoned as hazardous.

- 1.7 State certification requirements for electrical work in hazardous areas.

Outcome 2

Demonstrate knowledge of electrical requirements for electrical installations in damp situations.

Performance criteria

- 2.1 Define the term damp situation in terms of electrical installations and provide three examples of commonly arising damp situations.
- 2.2 Explain the need for special treatment in wet or damp areas in terms of safety to people and equipment.
- 2.3 Identify common requirements applying to all damp situations.
- Range wiring system, means of connection, accessories, appliances, luminaires, earthing and bonding.
- 2.4 Outline the meanings of the IP rating code and describe the degree of protection afforded by each code.
- Range ingress of solid bodies, protection of persons against contact with live or moving parts, protection against the ingress of liquids.
- 2.5 Identify damp situation zones for electrical accessories in the vicinity of swimming pools, spas, baths and showers.

Outcome 3

Demonstrate knowledge of electrical requirements for relocatable premises and their site supplies.

Performance criteria

- 3.1 Identify requirements for electrical site supplies for relocatable premises.
- 3.2 Identify requirements for electrical installations in relocatable premises.
- 3.3 Identify requirements for the connection of relocatable premises to the site supply.
- 3.4 Identify requirements for electrical installation in tents.
- 3.5 Outline the need for periodic re-verification that the requirements for electrical installations in, and site supply connection of, relocatable premises are being met appropriately.

Outcome 4

Demonstrate knowledge of electrical requirements for marinas and pleasure craft.

Performance criteria

- 4.1 Identify the Standard and the requirements for electrical installation in marinas for pleasure craft berth supplies.
- 4.2 Identify the Standard and the requirements for electrical installation in pleasure craft.

Outcome 5

Demonstrate knowledge of electrical requirements for patient treatment and electro-medical areas.

Performance criteria

- 5.1 Identify the Standard and the requirements for patient treatment and electro-medical areas.

Outcome 6

Demonstrate knowledge of electrical requirements for high voltage installations.

Performance criteria

- 6.1 Identify the Standard and the requirements for high voltage electrical installations.

Outcome 7

Demonstrate knowledge of electrical requirements for electrical installations for construction and demolition sites.

Performance criteria

- 7.1 Identify the requirements for electrical installations for construction and demolition sites.

Outcome 8

Demonstrate knowledge of electrical requirements for other special electrical installations.

Performance criteria

- 8.1 Identify requirements for electrical installation for shows and carnivals.
- 8.2 Identify requirements for the installation of electric fences.

Replacement information	This unit standard replaced unit standard 20961.
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This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	21 July 2016	31 December 2027
Review	2	25 May 2023	31 December 2027

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>.