

Title	Demonstrate knowledge of protection of circuits from static electricity and magnetic interference		
Level	2	Credits	2

Purpose	People credited with this unit standard are able to: <ul style="list-style-type: none"> – demonstrate knowledge of electrostatic discharge precautions for semiconductors; – explain magnetic interference; and – describe procedures to protect circuits from static electricity and magnetic interference.
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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 This unit standard and unit standards 15848, 15855, and 25070 together meet the assessment requirements of ERAC CEPC 5.
 This unit standard and unit standards 17602, 15848, 15855, 29465, and 29480 together meet the assessment requirements of ERAC CEPC 10.
 This unit standard and unit standards 15848, 15855, 29443, 29444, and 29480 together meet the assessment requirements of ERAC EPC 12.
 This unit standard and unit standards 5931, 15848, 15855, 29419, 29430, and 29480 together meet the assessment requirements of ERAC CEPC 23.
 This unit standard and unit standards 5931, 15848, 15855, 29419, 29430, 29440, 29471, and 29480 together meet the assessment requirements of ERAC CEPC 24.
 This unit standard and unit standards 5931, 15848, 15855, 29419, 29430, 29440, and 29474 together meet the assessment requirements of ERAC CEPC 37.
- 3 **Definitions**
CEPC – Critical Essential Performance Capability.
EPC – Essential Performance Capability.
ERAC – Electrical Regulatory Authorities Council.
ESD – electrostatic discharge.
EWRB – Electrical Workers Registration Board.
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)*.

4 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 electrostatic discharge precautions for semiconductors.

Performance criteria

- 1.1 Describe causes of static electricity in the electronics workplace in terms of triboelectric charging and separation and the amount of static charge generated.
- 1.2 Describe the effect of ESD on semiconductor devices, components, and equipment in terms of immediate failure, intermittent faults, re-servicing, and delayed breakdown.
- 1.3 State three precautions to minimise ESD to semiconductor devices, components, and equipment.
- 1.4 List the minimum requirements for a static-safe workstation.

Outcome 2

Explain magnetic interference.

Performance criteria

- 2.1 Outline causes of magnetic interference.
- 2.2 State typical effects of magnetic interference on a circuit.

Outcome 3

Describe procedures to protect circuits from static electricity and magnetic interference.

Performance criteria

- 3.1 Define accepted circuit protection procedures against the effects of static electricity.
- 3.2 Define accepted circuit protection procedures against the effects of magnetic interference.

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	23 April 1996	31 December 2013
Revision	2	3 April 2001	31 December 2013
Review	3	26 May 2005	31 December 2021
Rollover and Revision	4	15 March 2012	31 December 2021
Revision	5	15 January 2014	31 December 2021
Review	6	21 July 2016	31 December 2027
Revision	7	16 March 2017	31 December 2027
Review	8	25 May 2023	31 December 2027

Consent and Moderation Requirements (CMR) reference

0003

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