

Title	Install and inspect an earthing and bonding system for equipment used in the electricity supply industry		
Level	4	Credits	3

Purpose	People credited with this unit standard are able to: interpret design drawings and installation requirements of earthing and bonding standards and plan for installation; and install; and inspect earthing and bonding system.
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Classification	Electricity Supply > Electricity Supply - Power System Maintenance
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Available grade	Achieved
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Prerequisites	Unit 14287, <i>Use and maintain test instruments used in the high voltage electricity supply industry</i> , or demonstrate equivalent knowledge and skills.
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Guidance Information

- 1 Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable legislative and industry requirements.
- 2 Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the current version of the Health and Safety at Work Act 2015; Electricity Act 1992; Electricity (Safety) Regulations 2010; and any subsequent amendments and replacements; Electricity supply industry codes of practice and documented enterprise procedures, including *Safety Manual – Electricity Industry* (SM-EI) (2015) Wellington: Electricity Engineers' Association, available at www.eea.co.nz.
- 3 Definitions
AS/NZS refers to Australian/New Zealand Standard.
Asset owner refers to a participant who owns or operates assets used for generating or conveying electricity.
Industry requirements include all asset owner requirements; manufacturers' specifications; and enterprise requirements which may include the documented workplace policies, procedures, specifications, business, and quality management requirements relevant to the workplace in which assessment is carried out.
IEC refers to International Electrotechnical Commission.
NZCEP refers to New Zealand Electrical Code of Practice.

Outcomes and performance criteria

Outcome 1

Interpret design drawings and installation requirements of earthing and bonding standards and plan for installation.

Performance criteria

- 1.1 Earthing and bonding design drawings are interpreted in terms of client installation requirements.
- 1.2 Earthing and bonding installation standards are interpreted in terms of client requirements.
- Range NZECP 35, AS/NZS 3000:2007 Section 5.
- 1.3 The drawings and standards are translated into practical installation requirements and work plans.
- Range includes but is not limited to – quantities and size of bonding conductors, distances, fixture and excavation requirements, installation work plan.

Outcome 2

Install an earthing and bonding system.

Performance criteria

- 2.1 The required materials, plant, tools and resources are assembled in terms of installation requirements.
- Range includes but is not limited to – the selection of suitable moulds to suit the conductors if exothermic welding (cadweld) is to be used for jointing and terminating conductors, welding tools, and materials.
- 2.2 The earth mat installation is completed following the work plan.
- Range may include but is not limited to – installation following work plan and design for earth mat.
- 2.3 All bus system equipment is bonded to the earth mat.
- Range may include but is not limited to – checks of all earthing bonds to ensure acceptability of connection to the earth mat.

Outcome 3

Inspect earthing and bonding system.

Performance criteria

- 3.1 Each item of bus equipment is bonded to meet the requirements of the earthing and bonding standards.
- 3.2 Operational safety earthing tail clamps and bus bonding points are located at operationally suitable positions to allow compliance with industry electrical safety rules.
- Range may include but is not limited to – providing suitably located bus bonding points as specified for operational requirements.
- 3.3 The earth mat resistance is tested.
- Range may include but is not limited to – compliance with NZECP 35 in regard to step and touch voltages resistance.

Replacement information	This unit standard replaced unit standard 14330.
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Planned review date	31 December 2025
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	27 February 2020	N/A

Consent and Moderation Requirements (CMR) reference	0120
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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 Connexis – Infrastructure Industry Training Organisation qualifications@connexis.org.nz if you wish to suggest changes to the content of this unit standard.