

Title	Demonstrate knowledge of conductors, insulators and resistance in the electricity supply industry		
Level	3	Credits	5

Purpose	People credited with this unit standard are able to demonstrate knowledge of: electrical conductors and insulators, and electrical resistance.
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Classification	Electricity Supply > Electricity Supply - Core Skills
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Available grade	Achieved
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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:
 - Health and Safety at Work Act 2015
 - Electricity Act 1992
 - Electricity (Safety) Regulations 2010
 - Electricity supply industry codes of practice and documented enterprise procedures, including *Safety Manual – Electricity Industry (SM-EI)* and relevant EEA guides available from www.eea.co.nz and any subsequent amendments and replacements.
- 3 Definitions
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 cover the documented workplace policies, procedures, specifications, business, and quality management requirements relevant to the workplace in which assessment is carried out.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of electrical conductors and insulators.

Performance criteria

1.1 Materials commonly used for conductors and insulators are identified, and their orders of resistance stated.

Range evidence of three conductor and two insulator materials is required.

1.2 Typical uses of conductors and insulators are stated.

Range three conductors, three insulators.

1.3 Conductor and insulator materials suitable for given environmental conditions are identified, and reasons for their suitability are stated.

Range evidence of one conductor and one insulator material for three environmental conditions is required.

Outcome 2

Demonstrate knowledge of electrical resistance.

Performance criteria

2.1 Resistance is described in terms of opposition to current flow.

2.2 The unit for resistance is stated, and the symbol drawn.

2.3 Ohm's Law is defined.

2.4 The relationship between resistance, voltage, and current is described in terms of the effect that a change in any quantity has on the other two.

Planned review date	31 December 2027
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	27 April 2001	31 December 2016
Revision	2	10 September 2004	31 December 2016
Rollover and Revision	3	20 June 2008	31 December 2016
Review	4	19 November 2010	31 December 2016
Review	5	20 March 2014	31 December 2021
Review	6	28 November 2019	31 December 2024
Review	7	2 March 2023	N/A

Consent and Moderation Requirements (CMR) reference

0120

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@WaihangaAraRau.nz if you wish to suggest changes to the content of this unit standard.