

Australian/New Zealand Standard™

**Overhead line design—Detailed
procedures**



AS/NZS 7000:2010

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Electricity Engineers Association (New Zealand)
Energy Networks Association
Engineers Australia
National Generators Forum
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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-052-05, Electrical Energy Networks, Construction and Operation—Design of Overhead Electrical Lines.

The objective of this Standard is to provide Electricity Industry network owners, overhead line maintenance service providers, design consultants, construction contractors, structure designers, and pole manufacturers with an industry standard that replaces all previously used reference guidelines.

This Standard is one of a series of three documents—

1: *Overhead line design Standard—Detailed procedures*, which is a Standard that sets the detailed design requirements for overhead lines.

2: *A proposed Application guide for the design of overhead lines*, which will be a handbook providing supporting information, commentary, worked examples and supporting software (where applicable) for the design of overhead lines.

3: *Proposed ENA guidelines for the construction, maintenance and work practices of overhead lines*, which will be an Electricity Industry guideline for the purpose of facilitation of standard work practices throughout the electricity supply industry.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

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STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard
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SECTION 1 SCOPE AND GENERAL**1.1 SCOPE AND GENERAL**

This Standard specifies the general requirements that shall be met for the design and construction of new overhead lines to ensure that the line is suitable for its intended purpose, and provides acceptable levels of safety for construction, maintenance and operation, and meets requirements for environmental considerations.

This Standard is only applicable to new overhead lines and is not intended to be retrospectively applied to the routine maintenance, and ongoing life extension of existing overhead lines constructed prior to the issue of this Standard. Such maintenance and life extension work ensures that lines continue to comply with the original design standards and remain safe and 'fit for purpose'.

However, where existing overhead lines are proposed to be altered such that elements of the overhead line may be overloaded or overstressed to the original design standard; then the overhead line shall be required to be assessed by a competent person for compliance with the provisions of this Standard.

This Standard is applicable to overhead lines supporting telecommunication systems or where they are used on overhead lines either attached to the aerial line conductor/earth wire systems or as separate cables supported by the supports. These telecommunication systems include optical ground wires (OPGWs), optical conductors and all dielectric self supporting (ADSS) cables.

It is also applicable to overhead line structures supporting telecommunications equipment.

The electrical requirements of this standard apply to alternating current (a.c.) systems with a nominal frequency of 50 Hz.

This Standard does not apply to catenary systems of electrified railways.

1.2 USE OF ALTERNATIVE MATERIALS OR METHODS

This Standard shall not be interpreted so to prevent innovation or the use of materials or methods of design or construction not specifically referred to herein.

Alternative methods, dimensions or materials that provide safety and reliability levels equal to or greater than this Standard can be used and are deemed to comply with this Standard.

Special studies shall be carried out to demonstrate comprehensive engineering design including a risk management assessment. This study shall include appropriate documentation to show the source of all data in the context of the specific evaluation. It should include the following, where relevant:

- (a) Departures from this Standard and rationale.
- (b) Reference to other national or international Standards.
- (c) Comparison with other data.
- (d) Analytical methods used.