

Australian/New Zealand Standard™

**Electrical installations—Verification
guidelines**



AS/NZS 3017:2007

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-001, Wiring Rules. It was approved on behalf of the Council of Standards Australia on 26 October 2007 and on behalf of the Council of Standards New Zealand on 23 October 2007.

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The following are represented on Committee EL-001:

Association of Consulting Engineers Australia
Australian Building Codes Board
Australian Electrical and Electronic Manufacturers Association
Canterbury Manufacturers Association New Zealand
Communications, Electrical and Plumbing Union
Consumers' Federation of Australia
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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-001 Wiring Rules to supersede AS/NZS 3017:2001 from the date of publication.

This Standard aims to provide people who carry out inspections and tests of an electrical installation with some methods of checking that the electrical installation complies with the safety requirements for the prevention of fire and the protection of persons and livestock from electric shock.

AS/NZS 3017 may be applied through legislative requirements made in each State and Territory of Australia and in New Zealand.

AS/NZS 3000, *Electrical installations* (known as the Australian/New Zealand Wiring Rules), requires electrical installations to be inspected and tested before being placed in service. The inspection and test methods described in this Standard are provided for guidance. Alternative methods are acceptable.

This Standard has been revised to align with AS/NZS 3000:2007, to include optional tests to those previously listed, and additional tests for measurement of the resistance of the earth electrode; measurement of touch voltage; tests for phase sequence; and tests of the continuity and resistance of the incoming neutral.

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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard sets out some of the common inspection and test methods required to verify that a low voltage, multiple earthed neutral (MEN) (TN-C-S) electrical installation complies with safety requirements for the prevention of fire, or a person or livestock from sustaining an electric shock.

The tests detailed in this Standard are as follows:

- (a) Earthing system continuity and resistance;
- (b) Insulation resistance;
- (c) Polarity;
- (d) Correct circuit connections;
- (e) Phase sequence;
- (f) Fault-loop impedance;
- (g) Verification of operation of residual current devices;
- (h) Earth electrode resistance;
- (i) Touch voltage; and
- (j) Continuity and resistance of the incoming neutral.

The Standard illustrates testing procedures for an electrical installation connected to an MEN system of earthing. The equipment and methods:

- (k) Are not exclusive and other equipment and methods may be used;
- (l) May be applied to types of low voltage installations other than MEN; and
- (m) May be applied to work affecting only part of an installation, e.g. alterations, additions or repairs.

1.2 SAFETY

To comply with the requirements of AS/NZS 3000, all electrical installations and any alterations, additions and repairs to electrical installations shall, prior to being placed in service or use, be:

- (a) Inspected as far as is practicable; and
- (b) Tested.

Electrical testing inherently involves some degree of hazard. It is the responsibility of the person performing the tests to ensure that safe practices are used in the performance of test procedures.

In this Standard tests are described both for situations where the supply is connected and where it is not connected. Preference has been given to tests where the supply is not connected as this would minimize the shock risk. However, testing with the supply connected may also be conducted and some alternative test methods have been included. In these situations greater care must be exercised to avoid direct or indirect contact with live parts or the energizing of exposed conductive parts.

Whether testing with supply disconnected or connected, the following precautions should be followed:

- (c) Treat equipment, such as cables and terminations, as being energized until proven otherwise;