AS/NZS 3015:2004

Australian/New Zealand Standard™

Electrical installations—Extra-low voltage d.c. power supplies and service earthing within public telecommunications networks

STANDARDS AUSTRALIA

STANDARDS NEW ZEALAND
Paerewa Aotearoa

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 11 May 2004 and on behalf of the Council of Standards New Zealand on 25 May 2004.
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The following are represented on Committee EL-001:

Australian Building Codes Board
Australian Electrical and Electronic Manufacturers Association
Canterbury Manufacturers Association New Zealand
Communications, Electrical Plumbing Union
Consumers Federation of Australia
Electrical Contractors Association of New Zealand
Electrical Safety Organization (New Zealand)
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Institute of Electrical Inspectors
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National Electrical and Communications Association
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Regulatory authorities (electrical)
Telstra Corporation

Additional Interests:

Australian Communications Authority
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We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia International or Standards New Zealand at the address shown on the back cover.

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Australian/New Zealand Standard™

Electrical installations—Extra-low voltage d.c. power supplies and service earthing within public telecommunications networks

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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 3015—1993, *Electrical installations—Extra low-voltage d.c. power supplies within public telecommunications networks*.

The objective of this Standard is to establish safety requirements, consistent with maintaining continuity of essential supply, for the installation of extra-low voltage d.c. power supplies in restricted access locations of public telecommunications networks.

This standard is intended to apply only to installations constructed after its date of publication. The previous edition may be applied to upgrades to installation that were originally constructed prior to he publication of this edition.

Major changes to AS 3015—1993 are as follows:

(a) The ventilation requirements for valve-regulated cells have been reviewed.

(b) Requirements for colours of earthing conductors have been added.

(c) Allowance has been made for the use of main distribution frame or single-point connection as the service earth bar frame in installations with the single power supply rated at less than 2.4 kW.

(d) Requirements for equipotential bonding conductors for the lightning protection system have been added.

(e) Appendix C has been extensively reviewed.

(f) Provision has been made for sharing of sites by two or more carriers

(g) Requirements for the protection of battery strings against overcurrent have been added

(h) Requirements for the care and protection of batteries have been aligned with the following:

AS	
3011	Electrical installations—Secondary batteries installed in buildings
3011.1	Part 1: Vented cells
3011.2	Part 2: Sealed cells
2676	Guide to the installation, maintenance, testing and replacement of secondary batteries in buildings
2676.1	Part 1: Vented cells
2676.2	Part 2: Sealed cells

Statements expressed in mandatory terms in notes to tables are deemed to be requirements of this Standard.

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FOREWORD

Most public telecommunications network equipment is powered commonly from a 48 V or less supply. This voltage is the nominal voltage between positive and negative regardless of which pole, if either, is earthed. Consequently, these supplies and their power distribution systems fall into the category of extra-low voltage (ELV), as defined in AS/NZS 3000.

The power supplies form an integral part of the public telecommunications facility and their proper function is vital to the continuation of such a facility, especially to essential services such as police, fire brigade and ambulance. The practices that are included in this Standard have been developed over many years of safe operation in public telecommunications networks.

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S E C T I O N 1 S C O P E A N D G E N E R A L

1.1 SCOPE

This Standard sets out requirements for telecommunications ELV d.c. power supplies used by licensed public telecommunications carriers in the provision of public telecommunications networks where—

(a) the carrier owns the d.c. power supply;

(b) the d.c. power supply is located in a restricted access location;

(c) the d.c. power supply is located in premises and land that are owned, leased or otherwise occupied in whole or in part by the telecommunications carrier; and

(d) the power supply has a battery with a nominal rating of 2 A.h. or greater at the 10 h rate.

It specifies the minimum requirements for personal safety and safety from fire while maintaining the viability of the public telecommunications network.

1.2 APPLICATION

This Standard applies to the installation of ELV d.c. power supplies in restricted access locations of public telecommunications networks, e.g., telephone exchanges, telecommunications transmission sites and pair gain systems. Application of the requirements should ensure that the installation is safe and that continuity of the ELV d.c. supply is maintained at all times so that telecommunications services are available to agencies such as police, fire and ambulance authorities.

If there is conflict between the Section on ELV in AS/NZS 3000 or with any other Australian/New Zealand Standard, the provisions of this Standard shall apply to the ELV d.c. installations of public telecommunications carriers.

If there is conflict between this Standard and the requirements of the telecommunications carrier's internal documents, this Standard shall apply.

The appropriate requirements of AS/NZS 3000, AS/NZS 3100 and related Standards shall apply to power supplies that are not installed in restricted access locations within the telecommunications carrier's network.

1.3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS
1170 Minimum design loads on structures
1170.4 Part 4: Earthquake loads

1768 Lightning protection