

AS/NZS 2947.1:1999

Australian/New Zealand Standard™

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**Insulators—Porcelain and glass for  
overhead power lines—Voltages  
greater than 1000 V a.c.**

**Part 1: Test methods—  
Insulator units**

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[Based on and including the full text of IEC 60383-1:1993]

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This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL/10, Overhead Lines. It was approved on behalf of the Council of Standards Australia on 7 December 1998 and on behalf of the Council of Standards New Zealand on 26 November 1998. It was published on 5 March 1999.

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The following interests are represented on Committee EL/10:

Australasian Railway Association  
Australian Chamber of Commerce and Industry  
Australian Electrical and Electronic Manufacturers Association  
Electricity Engineers Association of New Zealand  
Electricity Supply Association of Australia

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## PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL/10, Overhead Lines, to supersede, in part, AS 2947.1—1989, *Insulators—Porcelain and glass for overhead power lines—Voltages greater than 1000 V a.c.*, Part 1: *Test methods*.

This Standard is based on but not equivalent to, and has been reproduced from, IEC 60383-1:1993, *Insulators for overhead lines with a nominal voltage above 1000 V*, Part 1: *Ceramic or glass insulator units for a.c. systems—Definitions, test methods and acceptance criteria*.

In January 1997, IEC commenced numbering its Standards from 60000 by adding 60000 to the number of each existing Standard. This coordinates IEC numbering with ISO numbering. During the transition period an IEC Standard might be identified by its new number (e.g. IEC 60050 or IEC 50).

This Standard is Part 1 of a series covering porcelain and glass insulators for overhead power lines with voltages greater than 1000 V a.c. which, when complete, will be as follows:

- Part 1: Test methods—Insulator units (this Standard)
- Part 2: Characteristics
- Part 3: Couplings
- Part 4: Test methods—Insulator strings and insulator sets

The objective of this Standard is to provide users and manufacturers of porcelain and glass insulators for overhead lines with definitions of terms, requirements and acceptance criteria to facilitate the specifications of insulator units.

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

For the purposes of this Standard the source text is modified as follows:

- (a) The source text is amended, supplemented or replaced as set out in Annex ZZ.
- (b) In the source text, ‘this part of IEC 383’ should read ‘this Australian/New Zealand Standard’.
- (c) A full point should substitute for a comma when referring to a decimal marker.

Sections 1 to 5 of this Standard contain general requirements and relevant test procedures. Sections 6 to 9 cover five different types of insulators, as follows:

Section 6: Pin insulators and shackle insulators.

Section 7: Line post insulators.

Section 8: String insulator units.

Section 9: Insulators for overhead electric traction lines.

Sections 6, 7 and 8 each contains a cross-reference table giving the tests applicable to the insulators and the quantity of insulators to be tested. Section 9, dealing with traction insulators, does not have a cross-reference table as traction insulators can be referenced to one of the three other types of insulator dealt with by this Standard.

The user of this Standard need only refer to the Section dealing with the type of insulator to be tested and to the general requirements and relevant test procedures contained in Sections 1 to 5.

References to International Standards should be replaced by equivalent Australian or Joint Australian/New Zealand Standards as follows:

<i>Reference to International Standard</i>	<i>Australian or Joint Australian/New Zealand Standard</i>
IEC	AS
60050(471) International Electrotechnical Vocabulary (IEV) Chapter 471: Insulators	1852 International Electrotechnical Vocabulary 1852.471 Chapter 471: Insulators
60060 High-voltage test techniques	1931 High voltage testing techniques
60060-1 Part 1: General definitions and test requirements	1931.1 Part 1: General definitions, test requirements, test procedures and measuring devices
60120 Dimensions of ball and socket couplings of string insulator units	2947 Insulators—Porcelain and glass for overhead power lines— Voltages greater than 1000 V a.c. 2947.3 Part 3: Couplings
60305 Characteristics of string insulator units of the cap and pin type	2947 Insulators—Porcelain and glass for overhead power lines— Voltages greater than 1000 V a.c. 2947.2 Part 2: Characteristics
60372 Locking devices for ball and socket couplings of string insulator units: Dimensions and tests	2947 Insulators—Porcelain and glass for overhead power lines— Voltages greater than 1000 V a.c. 2947.3 Part 3: Couplings
60433 Characteristics of string insulator units of the long rod type	2947 Insulators—Porcelain and glass for overhead power lines— Voltages greater than 1000 V a.c. 2947.2 Part 2: Characteristics
60471 Dimensions of clevis and tongue couplings of string insulator units	2947 Insulators—Porcelain and glass for overhead power lines— Voltages greater than 1000 V a.c. 2947.3 Part 3: Couplings
60720 Characteristics of line post insulators	2947 Insulators—Porcelain and glass for overhead power lines— Voltages greater than 1000 V a.c. 2947.2 Part 2: Characteristics
60797 Residual strength of string insulator units of glass or ceramic material for overhead lines after mechanical damage of the dielectric	—
60815 Guide for the selection of insulators in respect of polluted conditions	4436 Guide for the selection of insulators in respect of polluted conditions

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