AS 1154.1—2004

Australian Standard™

Insulator and conductor fittings for overhead power lines

Part 1: Performance, material, general requirements and dimensions

STANDARDS AUSTRALIA

This Australian Standard was prepared by Committee EL-010, Overhead Lines. It was approved on behalf of the Council of Standards Australia on 25 August 2004. This Standard was published on 29 September 2004.

The following are represented on Committee EL-010:

Australasian Railway Association
Australian Chamber of Commerce and Industry
Australian Electrical and Electronic Manufacturers Association
Australian Porcelain Insulators Association
Electricity Engineers Association (New Zealand)
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Insulator and conductor fittings for overhead power lines

Part 1: Performance, material, general requirements and dimensions

Originated as AS C345.1—1962 and AS C345.2—1967.
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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-010 on Overhead Lines to supersede AS 1154, *Insulator and conductor fittings for overhead power lines,* Part 1—1985*, Performance and general requirements*, and Part 2—1985, *Dimensions*. After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian, rather than an Australian/New Zealand Standard.

The objective of this Standard is to provide users and manufacturers of fittings with definitions of terms, performance requirements, dimensions, test methods and acceptance criteria.

This Standard is one of a two-part series covering insulator and conductor fittings for overhead power lines, as follows:

Part 1: Performance, material, general requirements and dimensions (this Standard)

Part 3: Performance and general requirements for helical fittings

NOTE: Part 3 will be redesignated at its next revision to become Part 2.

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.

In the preparation of this Standard consideration was given to IEC 61284:1997, *Overhead lines—Requirements and tests for fittings*, relevant parts of which have been incorporated in this Standard.

The following parts of this Standard are technically identical to IEC 61284:1997:

(a) Section 6, Support fittings is technically identical to Clauses 11.2 to 11.4 of IEC 61284:1997.

(b) Appendix H, Electrical heat cycle test, is technically identical to Clause 13 of IEC 61284:1997.

(c) Appendix J, Typical joint types, is technically identical to Annex A of IEC 61284:1997.

(d) Appendix K, Typical test circuit—Class A joints, is technically identical to Annex B of IEC 61284:1997.

(e) Appendix L, Typical test circuit—Class B joints, is technically identical to Annex C of IEC 61284:1997.

(f) Appendix M, Diagrammatic representation of heat cycle test sequence, is technically identical to Annex D of IEC 61284:1997.

(g) Appendix N, Mathematical acceptance criterion, is technically identical to Annex E of IEC 61284:1997.

(h) Appendix O, Potential points, is technically identical to Annex G of IEC 61284:1997.

The following parts of this Standard are technically identical to IEC 61897:1998:

(i) Clause 8.1.2.3, Field test, is technically identical to Clause 7.11.3.3 of IEC 61897:1998.

(ii) Clause 8.1.2.4, Analytical method, is technically identical to Clause 7.11.3.4 of IEC 61897:1998.

This Standard includes the following significant changes to the content of AS 1154.1—1985 and AS 1154.2—1985:

(A) The dimensions of fittings have been changed to reflect current Australian practice.

(B) The electrical heat cycle test has been made technically identical to that of IEC 61284:1997.

(C) The corona and radio interference voltage tests have been made technically identical to those of IEC 61284:1997.

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

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Part 1: Performance, material, general requirements and dimensions

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard sets out performance and general requirements for insulator and conductor fittings (other than helical fittings, which are covered in AS 1154.3) together with the critical dimensions for a limited range of insulator pins and cast, forged or fabricated insulator fittings for use on overhead electric power lines using insulators with minimum failing loads of 70 kN, 120 kN and 160 kN.

Pulling eyes provided to assist installation and fittings for insulated service lines, aerial bundled cables and high-voltage covered conductors are not covered by this Standard.

NOTES:

1 Appendix G provides guidance on means of demonstrating compliance with this Standard.

2 Appendix F provides guidance on items to be specified by purchasers of insulator and conductor fittings.

1.2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS	
1110	ISO metric hexagon bolts and screws—Product grades A and B
1110.1	Part 1: Bolts
1111	ISO metric hexagon bolts and screws—Product grade C
1111.1	Part 1: Bolts
1112	ISO metric hexagon nuts
1112.1	Part 1: Style 1—Product grades A and B
1112.2	Part 2: Style 2—Product grades A and B
1112.3	Part 3: Product grade C
1112.4	Part 4: Chamfered thin nuts—Product grades A and B
1154	Insulator and conductor fittings for overhead power lines
1154.3	Part 3: Performance and general requirements for helical fittings
1199	Sampling procedures for inspection by attributes
1199.0	Part 0: Introduction to the ISO 2859 attribute sampling system
1199.1	Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection
1214	Hot-dip galvanized coatings on threaded fasteners (ISO metric coarse thread series)
1237	Plain washers for metric bolts, screws and nuts for general purposes
1237.2	Part 2: Tolerances

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