Australian Standard®

INSULATOR AND CONDUCTOR FITTINGS FOR OVERHEAD POWER LINES

Part 1—PERFORMANCE AND GENERAL REQUIREMENTS

This Australian Standard was prepared by Committee EL/10, Overhead Line Materials. It was approved on behalf of the Council of Standards Australia on 31 May 1985 and published on 6 September 1985.

The following interests are represented on Committee EL/10:

Australian Electrical and Electronic Manufacturers Association

Australian Porcelain Insulators and Technical Ceramic Manufacturers Association

Confederation of Australian Industry

Electrical and Radio Federation of Victoria

Electricity Supply Association of Australia

Railways of Australia Committee

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Part 1—PERFORMANCE AND GENERAL REQUIREMENTS

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PREFACE

This edition of this standard was prepared by the Association's Committee on Overhead Line Materials and supersedes AS 1154, Part 1—1980. It specifies standards of performance for the various types of fittings used on overhead power lines in close association with the insulators and conductors, excluding insulated service lines.* It is applicable to fittings made of any material acceptable to the purchaser.

AS 1154 is a three-part standard, its parts being as follows:

Part 1—Performance and General Requirements (this standard)

Part 2—Dimensions

Part 3—Performance and General Requirements for Helical Fittings.

This standard differs from the previous edition in the following respects:

(a) The tests and criteria for fittings have been revised in line with current practice.

(b) Details of repair sleeves have been deleted from Section 8 as current practice favours the use of helical fittings (covered in AS 1154, Part 3).

(c) The requirements for vibration dampers have been included and appear in Section 8.

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* Helical fittings suitable for use on insulated service lines are dealt with in AS 1154, Part 3.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
INSULATOR AND CONDUCTOR FITTINGS FOR OVERHEAD POWER LINES

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, Part 3) for use on overhead electric power lines, excluding insulated service lines.

NOTE: The term 'manufacturer' in this standard shall also be taken to mean 'supplier'.

1.2 APPLICATION. The fittings shall comply with the relevant requirements of this Section and with the specific requirements of the following Sections, as appropriate:

Section 2—Insulator Pins
Section 3—Insulator Fittings and Earth Conductor Fittings
Section 4—Anchor and Tension Fittings
Section 5—Non-tension Fittings
Section 6—Support Fittings
Section 7—Electrical Control Fittings
Section 8—Protective Fittings.

1.3 REFERENCED DOCUMENTS. The following documents are referred to in this standard:

AS 1111 ISO Metric Hexagon Commercial Bolts and Screws

AS 1112 ISO Metric Hexagon Nuts, Including Thin Nuts, Slotted Nuts and Castle Nuts

AS 1137 Insulators
Part 1—Porcelain and Glass Insulators for Overhead Power Lines (For Voltages Greater than 1000 V a.c.)

AS 1214 Hot-dip Galvanized Coatings on Threaded Fasteners (ISO Metric Coarse Thread Series)

AS 1220 Aluminium Conductors Steel Reinforced for Overhead Power Transmission Purposes
Part 1—Galvanized Steel Reinforced (ACSR/GZ)
Part 2—Aluminized Steel Reinforced (ACSR/AZ)
Part 3—Aluminium-clad Steel Reinforced (ACSR/AC)

AS 1222 Steel Conductors and Stays for Overhead Power Transmission Purposes
Part 1—Galvanized (SC/GZ)
Part 2—Aluminium Clad (SC/AC)

AS 1154 Insulator and Conductor Fittings for Overhead Power Lines
Part 2—Dimensions
Part 3—Performance and General Requirements for Helical Fittings.

AS 1531 Aluminium Conductors for Overhead Power Transmission Purposes
Part 1—All-aluminium Conductors (AAC)
Part 2—All-aluminium Alloy Conductors (AAAC)
Part 3—All-aluminium Alloy Conductors (AAAC/1120)

AS 1566 Copper and Copper Alloy Plate, Rolled Bar, Sheet, Strip and Foil for General Engineering Purposes

AS 1650 Galvanized Coatings on Ferrous Articles

AS 1746 Hard-drawn Copper Conductors for Overhead Power Transmission Purposes

AS 1852 International Electrotechnical Vocabulary

AS B195 Plain Limit Gauges: Limit and Tolerances

IEEE 563 Guide for Self-damping Measurements.

IEEE 664 Aeolian Vibration Dampers for Single Conductors, Guide on the measurement for performance of.

CIGRE PUBLICATION, Interferences Produced by Corona Effects of Electric Systems.

1.4 DEFINITIONS. For the purpose of this standard, the definitions given in AS 1137, Part 1, in AS 1852, and the following apply:

1.4.1 Failing load—the load at which a fitting fails under the prescribed conditions of test.

1.4.2 Specified minimum failing load—the minimum failing load specified by the purchaser or declared by the manufacturer.

1.4.3 Breaking load—the calculated minimum breaking load of a conductor as specified in the appropriate conductor standard.

1.4.4 Nominated conductor tension—the conductor tension specified by the purchaser or manufacturer, and is the calculated working tension under wind load, combination of loads, and temperature conditions to which the conductor may be subjected in service. The loading, temperature conditions and maximum allowable conductor tension may be specified in statutory regulations or codes.

1.4.5 Nominated holding tension—the test load which a fitting is required to withstand for 1 min without slip of the conductor.

1.4.6 Insulator pin—rigid fitting for attaching a pin insulator to a supporting structure.

NOTE: Insulator pins are designated as Pattern 'A', Pattern'B', or Pattern 'C', according to thread pattern of the head (see AS 1154, Part 2).