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ELECTRIC CABLES—AERIAL BUNDLED—VOLTAGES UP TO AND INCLUDING 0.6/1 kV

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The following interests are represented on Committee EL/3:

Australian Electrical and Electronic Manufacturers Association Ltd

Confederation of Australian Industry

Department of Defence

Department of Industrial Relations and Employment, New South Wales

Department of Transport and Communications

Electrical Contractors Associations of Australia

Electrical Regulatory Authorities

Electricity Supply Association of Australia

Electrical testing laboratories

Railways of Australia Committee

Additional interests participating in preparation of Standard:

Australian Porcelain Insulators Association

Electrical and Radio Federation of Victoria

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AUSTRALIAN STANDARD

ELECTRIC CABLES—AERIAL BUNDLED—VOLTAGES UP TO AND INCLUDING 0.6/1kV

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PREFACE

This Standard was prepared by the Association's Committee on Electric Wires and Cables and is based on a draft Standard prepared by representatives from the Electricity Supply Association of Australia and Australian cable manufacturers.

The Standard applies to aerial bundled cables (ABC) intended for power distribution and electric lines operating at voltages up to and including 0.6/1 kV.

Construction, dimensions and test requirements are specified for cables of two, three and four cores, each being of equal size and type in conductor sizes of 25, 35, 50, 70, 95, 120 and 150 mm^2.

A guide to the selection of cables for specific applications is given in Appendix D.

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Australian Standard

ELECTRIC CABLES—AERIAL BUNDLED—VOLTAGES UP TO AND INCLUDING 0.6/1 kV

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This Standard specifies the construction, dimensions, and test requirements for aerial bundled cables (ABC), cross linked polyethylene (XLPE) insulated, of two, three or four core construction, having conductors of equal size and type in sizes of 25, 35, 50, 70, 95, 120 and 150 mm^2 and having a voltage rating of 0.6/1 kV.

A guide to the selection of cables is provided in Appendix D.

Preferred sizes are 25, 50 and 95 mm^2.

1.2 REFERENCED DOCUMENTS. The following documents are referred to in this Standard:

AS

1049 Telecommunication cables—Insulation and sheath—Polyethylene

1125 Conductors in insulated electric cables, and flexible cords

1531 Aluminium conductors for overhead power transmission purposes
Part 1: All-aluminium conductors (AAC) (AS 1531.1)

1660 Methods of test for electric cables, cords and conductors
Part 1: Conductors and metallic components (AS 1660.1)
Part 2: Insulation, extruded semi-conductive screens and non-metallic sheaths (AS 1660.2)
Part 3: Electrical tests (AS 1660.3)

2193 Methods for calibration and grading of force-measuring system of testing machines

2857 Timber drums for insulated electric cables and bare conductors

3000 The electrical installations of buildings, structures and premises (SAA Wiring Rules)

3008 Electrical installations—Selection of cables
Part 1: Cables for alternating voltages up to and including 0.6/1 kV (AS 3008.1)

1.3 DEFINITIONS. For the purpose of this Standard, the definitions given in the referenced Standards and those below apply:

1.3.1 Core (of a cable)—the conductor with its insulation.

1.3.2 Voltage designation—for cables for a.c. systems, the rated voltages U_0 and U expressed in the form U_0/U; or of cables for d.c. systems, the rated voltage U_0:

where—

U_0 is the r.m.s. power frequency voltage to earth of the supply system or d.c. voltage of the supply system for which the cable is designed; and

U is the r.m.s. power frequency voltage between phases of the supply system and for which the cable is designed.

1.3.3 Direction of lay of cores—the slope of the helically laid up cores, when the cable is held vertically.

It is right hand when the slope is in the direction of the central part of the letter Z, and left hand when the slope is in the direction of the central part of the letter S.

1.3.4 Length of lay—the axial distance between successive turns of the helix formed, as appropriate, e.g. by a core of a multicore cable, wire of a stranded conductor.

1.3.5 Approximate value—a value which is neither guaranteed nor checked; it is used, for example, for the calculation of other dimensional values.

1.3.6 Routine tests—tests made by the manufacturer on all cores and all production lengths of finished cable to demonstrate the integrity of the cable.

1.3.7 Special tests—tests made by the manufacturer on samples of completed cables or components taken from completed cables, at a specified frequency so as to verify that the finished product meets the design specification.

NOTE: These tests are only made if requested by the purchaser at the time of ordering.

1.3.8 Type tests—tests required to be made by a manufacturer before supplying on a general commercial basis a type of cable covered by this Standard, in order to demonstrate satisfactory performance characteristics to meet the intended application. These tests are of such a nature that, after they have been made, they need not be repeated, unless changes are made in the cable materials or design which might change the performance characteristics.