Australian/New Zealand Standard™

# Electric cables—Aerial bundled—Polymeric insulated—Voltages 6.35/11 (12) kV and 12.7/22 (24) kV

## Part 1: Metallic screened



Standards Australia

STANDARDS NEW ZEALAND Paerewa Aotearoa

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-003, Electric Wires and Cables. It was approved on behalf of the Council of Standards Australia on 8 August 2003 and on behalf of the Council of Standards New Zealand on 19 August 2003. It was published on 11 September 2003.

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Australian Electrical and Electronic Manufacturers Association
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# Part 1: Metallic screened

Originated as AS 3599.1—1988.
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# PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-003, Electric Wires and Cables, and is based on requirements laid down by the Electricity Supply Association of Australia. This Standard supersedes AS 3599.1—1988.

The objective of the Standard is to specify construction, dimensions and test requirements for cross-linked polyethylene insulated individually metallic screened, three phase, aerial bundled cables (ABCs), steel wire supported, for working voltages 6.35/11 (12) kV and 12.7/22 (24) kV.

For reasons of standardization and rationalization, this Standard provides for the construction, dimensions, and test requirements of only a limited range of individually screened three-core cables.

This Standard is complementary to the range of cables covered in AS/NZS 3599.2, *Electric cables—Aerial bundled—Polymeric insulated—Voltages 6.35/11 (12) kV and 12.7/22 (24) kV*, Part 2: *Non-metallic screened*, and in AS/NZS 1429.1, *Electric cables—Polymeric insulated*, Part 1: *For working voltages 1.9/3.3 (3.6) kV up to and including 19/33 (36) kV*. This Standard is generally compatible with the appropriate requirements specified in those Standards.

This Standard differs from the previous edition in the following significant ways.

(a) The Standard has been published as a Joint Australian/New Zealand Standard.

(b) The specifications for the conductor screen, insulation and insulation screen have been referenced to AS/NZS 1429.1.

(c) The HDPE sheath material has been referenced to AS/NZS 3808.

(d) The word ‘catenary’ has been deleted from the definition of the support wire.

(e) Current carrying capacities have been provided for both a 30°C and a 40°C ambient air temperature.

(f) Recalculated values have been provided for the recommended copper screen wires and the mechanical characteristics of the support wire.

The term ‘informative’ has been used in this Standard to define the application of the appendix to which it applies. An ‘informative’ appendix is only for information and guidance.

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## Part 1: Metallic screened

## 1 SCOPE

This Standard specifies the construction, dimensions, and test requirements for cross-linked polyethylene (XLPE) insulated, individually metallic screened, high density polyethylene (HDPE) sheathed, steel wire supported, three phase, aerial bundled cable (ABC) (see Figure 1), for electricity supply.

NOTES:

1 Cable data and recommendations to assist in the selection of the appropriate cables are given in Appendix A.

2 Purchasing guidelines are provided in Appendix B.

## 2 REFERENCED DOCUMENTS

The documents below are referred to in this Standard.

AS

1222 Steel conductors and stays—Bare overhead

1222.1 Part 1: Galvanized (SC/GZ)

1222.2 Part 2: Aluminium clad (SC/AC)

3983 Metal drums for insulated electric cables and bare conductors

AS/NZS

1125 Conductors in insulated electric cables and flexible cords

1429 Electric cables—Polymeric insulated

1429.1 Part 1: For working voltages 1.9/3.3 (3.6) kV up to and including 19/33 (36) kV

1660 Test methods for electric cables, cords and conductors

1660.2.1 Part 2.1: Insulation, extruded semi-conductive screens and non-metallic sheaths—Methods for general application

1660.2.2 Part 2.2: Insulation, extruded semi-conductive screens and non-metallic sheaths—Methods specific to elastomeric, XLPE and XLPVC materials

1660.3 Part 3: Electrical tests

2858 Timber drums for insulated electric cables and bare conductors

3008 Electrical installations—Selection of cables

3008.1.1 Cables for alternating voltages up to and including 0.6/1 kV—Typical Australian installation conditions

3008.1.2 Cables for alternating voltages up to and including 0.6/1 kV—Typical New Zealand installation conditions

3808 Insulating and sheathing materials for electric cables