AS/NZS 1429.2:2009

Australian/New Zealand Standard™

Electric cables—Polymeric insulated

Part 2: For working voltages above 19/33 (36) kV up to and including 87/150 (170) kV

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 7 August 2009 and on behalf of the Council of Standards New Zealand on 26 August 2009.
This Standard was published on 17 September 2009.

The following are represented on Committee EL-003:

Australasian Railway Association
Australian Industry Group
Department of Defence (Australia)
Department of Primary Industries, Mine Safety (NSW)
Electrical Contractors Association of New Zealand
Electrical Regulatory Authorities Council
Energy Networks Association
Engineers Australia
Ministry of Economic Development (New Zealand)
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This Standard was issued in draft form for comment as DR 07213.

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Part 2: For working voltages above 19/33 (36) kV up to and including 87/150 (170) kV

First published as AS/NZS 1429.2:1998.
Second edition 2009.

Jointly published by Standards Australia, GPO Box 476, Sydney, NSW 2001 and Standards New Zealand, Private Bag 2439, Wellington 6020

ISBN 0 7337 9238 3

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-003, *Electric Wires and Cables*, to supersede AS/NZS 1429.2:1998, *Electric cables—Polymeric insulation*, Part 2: *For working voltages above 19/33 (36) kV up to and including 76/132 (145) kV.*

The objective of this Standard is to specify requirements for single-core cross-linked polyethylene insulated cables for fixed installations operating at voltages above 19/33 (36) kV up to and including 87/150 (170) kV.

In the preparation of this Standard, consideration was given to the following publication and acknowledgment is made of the assistance received:

IEC

60229 Tests on cable oversheaths which have a special protective function and are applied by extrusion

60502 Extruded solid dielectric insulated power cables for rated voltages from 1 kV up to 30 kV

60811 Common test methods for insulating and sheathing materials of electric cables (all parts)

60840 Power cables with extruded insulation and their accessories for rated voltages above 30 kV (U_m = 36 kV) up to 150 kV (U_m = 170 kV)—Test methods and requirements

One type of insulation compound is specified in this Standard, namely insulation comprising cross-linked polyethylene (XLPE).

Although the Standard provides tables of insulation thicknesses and the necessary information to establish precisely the dimensions of the cable protective coverings, no cable dimension tables are provided owing to the variety of cable constructions that could affect such dimensions.

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

(a) The voltage range has changed with the deletion of the 64/110 (123) kV type and the addition of a 87/150 (170) kV type.

(b) The conductor may comply with IEC 60228 or AS/NZS 1125.

(c) The types of metallic moisture barrier included have been increased.

(d) An increased range of oversheath materials, referenced to AS/NZS 3808, has been included.

(e) Optional outer conductive coatings and fibre optic components have been included.

(f) Testing has been referenced to AS/NZS 60840 with compulsory additional tests only included in a table of tests.

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.

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

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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies requirements for single-core cross-linked polyethylene (XLPE) insulated cables for fixed installations for electricity supply.

This standard does not define tests after installation. Refer AS/NZS 60840 Clause 15.

NOTES:

1 Optional requirements for metallic wire screen, the protection from insect attack, outer conductive coating, inclusion of fibre optic elements, and metre marking on cable, are provided in Clauses 2.8, 2.11, 2.12, 2.13 and 2.15.

2 The full list of customer nominated requirements is given in Appendix A.

1.2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

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

1660.2.5 Part 2.5: Insulation, extruded semi-conductive screens and non-metallic sheaths—Methods specific to cables above 1 kV

1660.3 Part 3: Electrical tests

2848 Aluminium and aluminium alloys

2848.1 Part 1: Wrought products

3983 Metal drums for insulated electric cables and bare conductors

AS/NZS

1125 Conductors in insulated electric cables and flexible cords

2857 Timber drums for insulated electric cables and bare conductors

[illegible] Electric cables—Lead and lead alloy sheaths—Composition

[illegible] Insulating and sheathing materials for electric cables

60840 Power cables with extruded insulation and their accessories for rated voltages above 30 kV (U_m = 36 kV) up to 150 kV (U_m = 170 kV)—Test methods and requirements

ASTM

A240/A240M Standard specification for chromium and chromium-nickel stainless steel plate, sheet, and strip for pressure vessels and for general applications

IEC

60228 Conductors of insulated cables