

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**



AS/NZS 1429.2:2009

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.

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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
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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 publications and acknowledgment is made of the assistance received:

IEC

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| 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 conductors now 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.

CONTENTS

	<i>Page</i>
SECTION 1 SCOPE AND GENERAL	
1.1 SCOPE	4
1.2 REFERENCED DOCUMENTS	4
1.3 DEFINITIONS	5
1.4 VOLTAGE DESIGNATION	6
1.5 MAXIMUM CONDUCTOR TEMPERATURE	7
SECTION 2 CONSTRUCTION	
2.1 GENERAL	8
2.2 CONDUCTORS	8
2.3 CONDUCTOR SCREEN.....	8
2.4 INSULATION	9
2.5 EXTRUDED INSULATION SCREEN	10
2.6 WATER BLOCKING.....	10
2.7 METALLIC MOISTURE BARRIER	11
2.8 METALLIC WIRE SCREEN (OPTIONAL)	13
2.9 BINDERS AND BARRIER TAPES	13
2.10 OVERSHEATH.....	13
2.11 PROTECTION FROM INSECT ATTACK (OPTIONAL)	14
2.12 OUTER CONDUCTIVE COATING (OPTIONAL).....	14
2.13 FIBRE OPTIC COMPONENTS (OPTIONAL)	14
2.14 CABLE IDENTIFICATION.....	15
2.15 METRE MARKING ON CABLE (OPTIONAL).....	15
2.16 PREPARATION FOR DELIVERY	15
2.17 MARKING OF DRUMS	15
SECTION 3 TESTS	
3.1 GENERAL	16
3.2 SELECTION OF SAMPLES.....	16
3.3 RE-QUALIFICATION TESTS.....	17
APPENDICES	
A PURCHASING GUIDELINES.....	19
B THE FICTITIOUS CALCULATION METHOD FOR THE DETERMINATION OF THE DIMENSIONS OF INSULATION SCREEN AND PROTECTIVE COVERINGS	20
C RECOMMENDED DIAMETER OF DRUM BARREL AND INSTALLATION BENDING RADIUS FOR CABLES	23
D FREQUENCY OF SAMPLE TEST SELECTION AND RETEST PROCEDURE FOR SAMPLE TESTS	24
E ROUNDING OF NUMBERS	25
F GUIDE TO THE SELECTION OF ACCESSORIES FOR HV CABLES WITH EXTRUDED INSULATION	26

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Australian/New Zealand Standard
Electric cables—Polymeric insulated

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(170) kV

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

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| 1125 | Conductors in insulated electric cables and flexible cords |
| 2857 | Timber drums for insulated electric cables and bare conductors |
| 2893 | Electric cables—Lead and lead alloy sheaths—Composition |
| 3808 | 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

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

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| 60228 | Conductors of insulated cables |
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