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Reconfirmed 2020

AS/NZS 1972:2006

Australian/New Zealand Standard™

Electric cables—Underground coal mines—Other than reeling and trailing

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 22 March 2006 and on behalf of the Council of Standards New Zealand on 31 March 2006.
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The following are represented on Committee EL-003:

Australasian Railway Association
Australian Electrical and Electronic Manufacturers Association
Australian Industry Group
Canterbury Manufacturers Association, New Zealand
Department of Primary Industries, Mine Safety (NSW)
Electrical Contractors Association of New Zealand
Electrical Regulatory Authorities Council
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This Standard was issued in draft form for comment as DR 05187.

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

RECONFIRMATION

OF
AS/NZS 1972:2006
Electric cables—Underground coal mines—
Other than reeling and trailing

RECONFIRMATION NOTICE

Technical Committee EL-023 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

Certain documents referenced in the publication may have been amended since the original date of publication. Users are advised to ensure that they are using the latest versions of such documents as appropriate, unless advised otherwise in this Reconfirmation Notice.

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NOTES

Australian/New Zealand Standard™

Electric cables—Underground coal mines—Other than reeling and trailing

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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 1972:2002.

The objective of this Standard is to specify the construction, dimensions and tests for cables used underground in coal mines, excluding reeling and trailing cables.

The Standard applies to cables and flexible cables intended for underground use in coal mines, but does not apply to reeling and trailing cables, which are covered by AS/NZS 1802, *Electric cables— Reeling and trailing—For underground coal mining purposes*, cables for use in intrinsically safe (IS) circuits and data, communication and control cables not specifically covered by this Standard. This Standard includes requirements for cables intended for fixed apparatus (e.g. power, lighting and control circuitry); impregnated paper insulated and polymeric insulated power cables for use at working voltages of 1.9/3.3 (3.6) kV up to and including 19/33 (36) kV; feeder cables for connecting equipment to substations; cables for both the internal and external wiring on machines and mine shaft winder cables. These cables may be used in other applications where a risk assessment has been carried out to establish their suitability.

In each case, the requirements are supplementary to those in other Australian/New Zealand Standards for cables and flexible cords. These extra requirements are necessary to meet the more onerous conditions existing for cables used in underground coal mines.

This Standard is required to be used in conjunction with the requirements of the regulatory authorities administering regulations for the use of electricity in underground coal mines.

The need for new or modified cables will be addressed when the situation arises.

This Standard differs from the 2002 edition as follows:

(a) An additional type of machine cable, Type 2S.3, with a voltage designation of 3.3/3.3 kV has been introduced into Section 5.

(b) The voltage designation of Type 1, 2, 2S, 3, 3S, 7, 7S and 8 machine cables has been changed from 0.6/1 (1.2) kV to 1.1/1.1 kV.

(c) A new a.c. high voltage test has been included for cables designated as 1.1/1.1 kV in order to demonstrate that these cables are able to withstand 1.1/1.1 kV conditions.

(d) As AS 1979 has been withdrawn, relevant content from this Standard has been incorporated into Section 6.

(e) Appropriate cable diameters have been deleted from the tables of dimensions in Appendix C.

(f) Appendix D, covering machine cables with critical overall diameters, has been deleted.

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.

CONTENTS

Page

SECTION 1 SCOPE AND GENERAL
1.1 SCOPE 5
1.2 APPLICATION 5
1.3 REFERENCED DOCUMENTS 6
1.4 DEFINITIONS 6

SECTION 2 0.6/1 (1.2) kV CABLES FOR FIXED APPARATUS
2.1 SCOPE OF SECTION 8
2.2 DESIGN 8
2.3 CONSTRUCTION 8
2.4 CONDUCTORS 9
2.5 FILLERS 9
2.6 SCREENS 9
2.7 COLLECTIVE TAPE SCREEN 9
2.8 ARMOUR 10
2.9 TESTS 10

SECTION 3 ARMOURED CABLES FOR USE AT WORKING VOLTAGES OF 1.9/3.3 (3.6) kV UP TO AND INCLUDING 19/33 (36) kV
3.1 SCOPE OF SECTION 11
3.2 CONDUCTORS 11
3.3 SCREENS FOR CABLES MANUFACTURED IN ACCORDANCE WITH AS/NZS 1429.1 11
3.4 ARMOUR FOR CABLES MANUFACTURED IN ACCORDANCE WITH AS/NZS 1026 11
3.5 OUTER SHEATH 12
3.6 MARKING 12
3.7 TESTS 12

SECTION 4 FEEDER CABLES
4.1 SCOPE OF SECTION 13
4.2 TYPES OF CABLES 13
4.3 CONSTRUCTION 13
4.4 CONDUCTORS 13
4.5 INSULATION 13
4.6 SCREENS 14
4.7 COVERING ON PILOT CORES 14
4.8 LAYING UP OF CORES 15
4.9 SHEATH 15
4.10 EXTERNAL MARKING OF CABLE 15
4.11 TESTS 16

SECTION 5 MACHINE CABLES
5.1 SCOPE OF SECTION 17
5.2 TYPES 17
5.3 DIMENSIONS FOR MACHINE CABLES 18
5.4 TYPE 1 18
5.5 TYPES 2 AND 2S 20
5.6 TYPES 3 AND 3S 22

Page

5.7 TYPES 7 AND 7S 23
5.8 TYPE 8 24
5.9 TYPE 9 25
5.10 MARKING 26

SECTION 6 MINE SHAFT WINDER CABLES
6.1 SCOPE OF SECTION 28
6.2 DESIGN 28
6.3 CONDUCTORS 28
6.4 INSULATION 28
6.5 TEXTILE BRAIDING OVER CORES 28
6.6 CORE IDENTIFICATION 29
6.7 SCREENED COMMUNICATION CORES 29
6.8 SUPPORT MEMBERS 29
6.9 FILLERS AND BINDERS 30
6.10 LAY-UP OF CABLE CORES 30
6.11 TEXTILE BRAID OVER LAID-UP CORE ASSEMBLY 30
6.12 SHEATH 30
6.13 SUSPENDED LENGTHS 31
6.14 MARKING 31
6.15 TESTS 31

APPENDICES
A INFORMATION TO BE SUPPLIED WITH ENQUIRY AND ORDER 35
B RECOMMENDATIONS FOR THE SELECTION OF PAPER, OR POLYMERIC INSULATED CABLES 36
C TABLES OF DIMENSIONS FOR MACHINE CABLES 38
D CALCULATION OF SUSPENDED LENGTHS FOR CABLES 41

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard

Electric cables—Underground coal mines—Other than reeling and trailing

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies the construction of cables used in underground coal mines.

This Standard does not apply to reeling and trailing cables, which are covered by AS/NZS 1802, cables for use in IS circuits and data, communication and control cables unless specifically covered.

NOTE: Guidelines on information that should be supplied with enquiries or orders are provided in Appendix A.

1.2 APPLICATION

The cables shall comply with the requirements of regulatory authorities and with the following sections, as appropriate:

0.6/1 (1.2) kV cables for fixed apparatus	Section 2
Armoured cables for use at working voltages of 1.9/3.3 (3.6) kV up to and including 19/33 (36) kV	Section 3
Feeder cables	Section 4
Machine cables	Section 5
Mine shaft winder cables	Section 6

The cables covered by this Standard shall be suitable for use in a distribution system where a phase-to-earth fault could produce a situation where U_0 may rise to equal U.

Cables covered by Section 4 and Section 5 are rated as U/U. They are considered as being capable of continuous operation with phase-to-earth voltage equivalent to phase-to-phase voltage without damage to cable insulation.

Cables covered by other Sections are rated as U_0/U and are not considered as being capable of continuous operation with phase-to-earth voltage equivalent to phase-to-phase voltage.

NOTE: Appendix B should be consulted when selecting the required voltage rating for cables rated 3.3 kV and above.

In addition to the requirements of the particular section of this Standard, cables shall comply with the relevant requirements of the following Standards, as appropriate for the types of cables specified.

Section 2	AS/NZS 5000.1	
Section 3	AS/NZS 1026 or AS/NZS 1429.1	
Section 5	Type 1	AS/NZS 5000.1
	Type 2, 2S	AS/NZS 5000.1
	Type 3, 3S	AS/NZS 5000.1
	Type 7, 7S	AS/NZS 5000.1