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Australian Standard®

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



This Australian Standard was prepared by Committee EL/3, Electric Wires and Cables. It was approved on behalf of the Council of Standards Australia on 12 July 1991 and published on 16 September 1991.

The following interests are represented on Committee EL/3:

Australian Electrical and Electronic Manufacturers Association
Department of Defence
Department of Minerals and Energy (New South Wales)
Electrical Contractors Associations of Australia
Electrical regulatory authorities
Electricity Supply Association of Australia
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**Electric cables—Underground coal
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trailing cables**

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PREFACE

This Standard was prepared by the Standards Australia Committee on Electric Wires and Cables and supersedes AS 1972—1976, *Cables for use below ground in coal mines (other than trailing cables)*.

The Standard applies to cables and flexible cables intended for use below ground in coal mines, but does not apply to reeling and trailing cables, which are covered by AS 1802, *Reeling and trailing electric cables for underground coal mining purposes*. 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 kV up to and including 19/33 kV; feeder cables for connecting equipment to substations; and cables for both the internal and external wiring on machines.

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

Standards Australia points out that 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 Standard now incorporates cables manufactured in accordance with AS 3178 (in Section 2) and AS 1429 (in Section 3). Rationalization of machine cables (Section 5) has been effected, deleting Types 4 and 5 (that incorporated asbestos) and a new Type 8 cable has been introduced to replace Type 4. Appendices have been added covering selection of paper or cross-linked polyethylene (XLPE) cables, machine cables with critical overall diameters (Section 5) and information to be supplied with enquiry and order.

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STANDARDS AUSTRALIA

Australian Standard

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

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE This Standard specifies the construction of cables used below ground in coal mines. This Standard does not cover reeling and trailing cables, which are covered by AS 1802, or mine winder cage control and communication cables.

NOTES:

- 1 Mine winder cage control and communication cables shall conform to the requirements for underground coal mines, AS 3116, and AS 1979 where relevant, and shall comply with statutory authority provisions and approval requirements as appropriate.
- 2 Information to be supplied with enquiry and order is stated in Appendix C.

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

0.6/1 kV cables for fixed apparatus	Section 2
Armoured cables for use at working voltages of 1.9/3.3 kV up to and including 19/33 kV	Section 3
Feeder cables	Section 4
Machine cables	Section 5

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 3116, AS 3147, AS 3178 or AS 3198

Section 3 AS 1026 or AS 1429

Section 4 AS 3116 and, for sheath material, AS 1802

Section 5	Type 1	AS 3147
	Type 2, 2S	AS 3116
	Type 3, 3S	AS 3116 and AS 3178
	Type 7, 7S	AS 3116
	Type 8	AS 3116

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

AS

- | | |
|--------|---|
| 1026 | Impregnated paper insulated cables for electricity supply at working voltages up to and including 33 kV (metric units) |
| 1125 | Conductors in insulated electric cables and flexible cords |
| 1429 | Polymeric insulated cables for electricity supply at working voltages 1.9/3.3 kV up to and including 19/33 kV |
| 1660 | Methods of test for electric cables, cords and conductors |
| 1802 | Reeling and trailing electric cables for underground coal mining purposes |
| 1979 | Flexible trailing cables for lifts |
| 2380 | Electrical equipment for explosive atmospheres—Explosion-protection techniques |
| 2380.7 | Part 7: Intrinsic safety i |
| 3116 | Approval and test specification—Electric cables—Elastomer insulated—For working voltages up to and including 0.6/1 kV |
| 3147 | Approval and test specification—Electric cables—Thermoplastic insulated for working voltages up to and including 0.6/1 kV |
| 3178 | Approval and test specification—Electric cables—Silicone rubber insulated—For working voltages up to and including 0.6/1 kV |
| 3191 | Approval and test specification—Electric flexible cords |
| 3198 | Approval and test specification—Electric cables—XLPE insulated—For working voltages up to and including 0.6/1 kV |