

AS/NZS 1747:2022



Australian/New Zealand Standard™

Reeling, trailing and feeder cables used for mining, repair, testing and training of accessories

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AS/NZS 1747:2022

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Better Regulation Division (Fair Trading, Safework NSW, TestSafe)
Construction Forestry Miners and Energy Union
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Reeling, trailing and feeder cables used for mining —

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accessories

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Preface

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-023-03, Cables, Couplers and Receptacles, to supersede AS/NZS 1747:2003, *Reeling, trailing and feeder cables used for mining—Repair and testing*.

The objective of this document is to provide standard procedures for the repair and testing of reeling, trailing and feeder cables used in mining applications, and to establish requirements for the repair of cables which will ensure that the repaired cable is returned to a condition as near as possible to the original design. It also sets out requirements for the fitting of accessories to these cables.

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

- (a) Reference to AS/NZS 60079 standards has been included.
- (b) Definitions for Competent Person, Responsible Person, Insulation Earth Screens, Insulation Stress Relief Screens and Twist Test have been included.
- (c) The reference to Spark test has been changed to Sheath Test throughout this standard.
- (d) **This is a preview. Click here to purchase the full publication.**
- (e) A new [Clause 2.5](#), *Inspection of cable accessories*, has been included.
- (f) A new [Clause 3.7](#), *Joining pilot conductors and control conductors other than reeling cables*, has been included.
- (g) A new [Clause 3.11](#), *Joining of PILSWA and XLPE armoured cables*, has been included.
- (h) A new [Clause 3.19](#), *Replacement of outer rubber sheath only*, has been included.
- (i) A new [Clause 3.20](#), *Replacement/repair of PVC outer sheath*, has been included.
- (j) Plug inspections have been divided into [Clauses 4.2](#), *Plug inspection external*, 4.3, *Plug inspection internal*, 4.4, *Flamepath inspection*, and 4.5, *Tail inspection*.
- (k) The phase rotation of power conductors in plugs has been defined.
- (l) Flameproofing has been changed to explosion protection.
- (m) A new [Clause 5.2](#), *HV Connections*, has been included.
- (n) The high voltage proof test voltage for 1.1kV cables has been increased from 3.5kV DC to 5kV DC.
- (o) A new [Clause 5.3](#), *Discharge times*, has been included.
- (p) The application of fault location pulses has been changed.
- (q) A test time has been included to the High voltage proof test table.
- (r) A new [Table 5.8](#) *Test voltages for high voltage proof test on PILSWA and XLPE cable*, has been included.
- (s) New connection diagrams have been included for insulation tests and proof testing.
- (t) The minimum insulation resistance value for 1.1kV cables has been increased to 250 mΩ.
- (u) Testing of pilot conductors now includes control cores.
- (v) Test times have been included to the minimum insulation resistance table.
- (w) The practicability of symmetrical load and Partial break testing has been included.

- (x) New marking codes for outer sheath repair, single ferrule and long hand splice have been included in [section 6](#).
- (y) AS/NZS 1747:2003 section 7, *Temporary sheath repairs*, has been deleted.
- (z) A new [Section 7](#), *Responsible person*, has been included.
- (aa) [Appendix A](#) has been expanded and a rating matrix has been included in [Appendix G](#).
- (bb) [Appendix F](#) has been amended.
- (cc) Discharge stick and earth bridging leads have been included in [Appendices H](#) and [I](#).
- (dd) AS/NZS 1747:2003 Appendix J, *Combined resistance of earth conductors*, has been deleted.
- (ee) New [Appendix J](#) has been included for measuring equipment.

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.

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Reeling, trailing and feeder cables used for mining — Repair, testing and fitting of accessories

Section 1 Scope and general

1.1 Scope

This document sets out requirements for the repair and testing of reeling, trailing and feeder cables used in underground coal mines, metalliferous mines, open cut mines, tunnelling, quarries and dredges. This document also details the requirements for the inspection, fitting and replacement of plugs, couplers fitted to the cables and for the test equipment used for testing cables.

Where type or code numbers are referred to in this document for cables, the numbers are as specified in AS/NZS 1802, AS/NZS 2802 and AS/NZS 1972.

NOTE 1 The Standard applies particularly to reeling and trailing cables conforming to AS/NZS 1802 and AS/NZS 2802, and to cables with similar constructions conforming to AS/NZS 1972, but is not restricted in application.

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NOTE 2 Where reference is made to 1.5 mm in respect to the sheath of the cable, the reference is valid for any of the alternative thermoplastic sheath materials.

NOTE 3 Where reference is made to plugs in this standard, it also refers to receptacles, bolted couplers and adaptors.

1.2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document.

AS 1683.15.2, *Methods of test for elastomers, Method 15.2: Durometer hardness*

AS 1834.1, *Material for soldering, Part 1: Solder alloys*

AS/NZS 1299, *Electrical equipment for mines and quarries — Explosion-protected three-phase restrained plugs and receptacles for working voltages up to and including 3.3. kV*

AS/NZS 1300, *Electrical equipment for mines and quarries — Bolted explosion-protected three-phase cable coupling devices*

AS/NZS 1802, *Electric cables — Reeling and trailing — For underground coal mining*

AS/NZS 1972, *Electric cables — Underground coal mines — Other than reeling and trailing*

AS/NZS 2802, *Electric cables — Reeling and trailing — For mining and general use (other than underground coal mining)*

AS/NZS 60079.7, *Explosive atmospheres, Part 7: Equipment protection by increased safety 'e'*

1.3 Terms and definitions

For the purpose of this document, the following terms and definitions apply:

1.3.1

arduous flexing

cable under constant flexing up to but not exceeding its minimum bend radius