

Australian/New Zealand Standard™

**Electrical equipment for mines and
quarries—Bolted explosion-protected
three-phase cable coupling devices**



AS/NZS 1300:2009

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-023, Electrical Equipment in Mines and Quarries. It was approved on behalf of the Council of Standards Australia on 26 November 2009 and on behalf of the Council of Standards New Zealand on 13 November 2009. This Standard was published on 9 December 2009.

The following are represented on Committee EL-023:

Australian Chamber of Commerce and Industry
Australian Coal Association
Australian Industry Group
Aviation and Marine Engineers Association, New Zealand
Department of Mines and Energy, Qld
Department of Mines and Petroleum, WA
Department of Primary Industries, Mine Safety NSW
Electrical Apparatus Service Association
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**Electrical equipment for mines and
quarries—Bolted explosion-protected
three-phase cable coupling devices**

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-023 Electrical Equipment in Mines and Quarries to supersede AS 1300—1989, *Electrical equipment for coal mines—Bolted flame-proof cable coupling devices*.

This Standard incorporates Amendment No. 1 (March 2012). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

The objective of this Standard is to provide requirements and guidance for bolted explosion-protected three-phase cable coupling devices and adaptors of the pin and socket type to manufacturers, users, regulatory authorities and associated interests and for use with Australian/New Zealand Standards and relevant mining regulations. It also is to allow for the use of existing compatible cable coupling systems and for the introduction of new non-compatible cable coupling systems.

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

- (a) Recognizes the AS/NZS 60079 series of Standards.
- (b) Introduces provisions for alternative designs. Couplers and adaptors that are dimensionally compatible with this Standard are called Type A. Alternative designs are called Type B.
- (c) Updated Figures showing critical compatibility dimensions and flamepaths ensure compatibility between different makes of Type A components.
- (d) Provides for transition devices between Type A and B components.
- (e) Increased emphasis on integrity of earth paths.
- (f) Clarifies test criteria.
- (g) Allows for higher current ratings.
- (h) Removes reference to coal mines and includes mines and quarries.
- (i) Withdrawal of AS 1147.1, *Electrical equipment for coal mines—Insulating materials, Part 1: Materials for insulating power conducting components* and incorporation of test requirements into Appendix B of this Standard. Materials tested by authorities to Standards listed in Appendix B may be accepted without verification.
- (j) Outlines additional marking requirements in Clause 1.6.
- (k) Introduces the term ‘explosion-protected’ throughout the Standard.
- (l) Allows for non-metallic materials to be used in the construction of the components (refer to Clause 2.3).
- (m) Details requirements of earthing through the couplers and adaptors.
- (n) Increases phase barrier earth connection to at least 6 mm².
- (o) Provides template drawings to allow manufacturers of explosion-protected enclosures to design outlets that do not compromise the integrity of adaptors.
- (p) Adds Section 4 with Figures and dimensions.
- (q) Adds partial discharge and impulse withstand tests.

Statements expressed in mandatory term in notes to tables are deemed to be requirements of this Standard.

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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies the design and test requirements for bolted explosion-protected three-phase cable coupling devices and adaptors of the pin and socket type, referred to in this Standard as 'cable coupling devices', for use with restricted earth-fault systems in mines and quarries. The devices are designed to couple cables together, or to couple a cable to equipment.

Cable coupling devices and adaptors constructed to this Standard are not intended to be coupled or uncoupled while the circuit is energized.

The Standard covers two types of coupling devices:

(a) Type A

Designed according to Figures in this Standard that prescribe the dimensions necessary to interconnect cable coupling devices from different manufacturers.

(b) Type B

Designed to dimensions that are not compatible with Type A coupling devices. Type B couplers cannot be directly coupled to Type A coupling devices under normal operation.

Type B plugs and receptacles do not comply with Figures 4.1 to 4.5 but comply with all other requirements of this Standard. Where there is a variation to a particular clause for Type B plugs and receptacles it is specifically stated. The use of transition devices between Type A and Type B systems is permitted.

This Standard also deals with some electrical and mechanical requirements, including the provision of earthed phase barriers to protect against interphase faults. It does not specify fully detailed designs.

NOTES:

- 1 Appendix A lists the information a user should provide with any enquiry or order.
- 2 Appendix C lists the information that should be supplied by the designer or manufacturer.

1.2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard.

AS

1856	Electroplated coatings—Silver
1931	High-voltage test techniques
1931.1	Part 1: General definitions and test requirements
2700	Colour standards for general purposes
60270	High-voltage test techniques—Partial discharge measurements
60529	Degrees of protection provided by enclosures (IP Code)