

Australian/New Zealand Standard™

**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 1299:2009

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.

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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
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STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

RECONFIRMATION
OF
AS/NZS 1299:2009
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NOTES

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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 1299—1993, *Electrical equipment for coal mines—Flameproof restrained plugs and receptacles*.

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 explosion-protected three-phase restrained plugs and receptacles to manufacturers, users, regulatory authorities and associated interests and for use with other related 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. Plugs and receptacles 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 Type B components.
- (e) Increased emphasis on integrity of earth paths.
- (f) Clarifies test criteria.
- (g) Allows for higher current ratings.
- (h) Defines maximum voltage for restrained systems at 3.3 kV.
- (i) Removes reference to coal mines and includes mines and quarries.
- (j) 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.
- (k) Outlines additional marking requirements in Clause 1.6.
- (l) Illustrates the quick-release concept in Figure 1.1.
- (m) Introduces the term ‘explosion-protected’ throughout the Standard.
- (n) Allows for non-metallic materials to be used in the construction of the components (refer to Clause 2.3).
- (o) Details requirements of earthing through the plugs and receptacles.
- (p) Allows for pins and socket earths in Type B designs (as opposed to scraping earth in Type A).
- (q) Defines the plug removal sequence (refer to Clause 2.11.2).
- (r) Increases earth size in cable reel receptacles from 6 mm² to 16 mm².
- (s) Increases phase barrier earth connection to at least 6 mm².

- (t) Provides template drawings to allow manufacturers of explosion-protected enclosures to design outlets that do not compromise the integrity of receptacles.
- (u) Establishes a test to ensure integrity of scraping earth contacts.
- (v) Adds Section 4 with figures and dimensions.

Statements expressed in mandatory terms in notes to tables are deemed to be requirements of this standard.