AS 1299:2022

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Electrical equipment for mines and quarries — Explosion-protected three-phase restrained and bolted cable coupling devices for working voltages up to and including 11 kV

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This Australian Standard® was prepared by EL-023, Electrical Equipment in Mines and Quarries. It was approved on behalf of the Council of Standards Australia on 05 August 2022.

This Standard was published on 19 August 2022.

The following are represented on Committee EL-023:

Australian Cablemakers Association
Australian Chamber of Commerce and Industry
Australian Industry Group
Aviation and Marine Engineers Association
Better Regulation Division (Fair Trading, SafeWork NSW, TestSafe)
Construction Forestry Miners and Energy Union
Department of Mines, Industry Regulation and Safety WA
Department of Regional NSW
Engineers Australia
Engineers Australia/Mining Electrical and Mining Mechanical Engineering Society
Minerals Council of Australia
National Association of Testing Authorities Australia
Resources Safety & Health Queensland
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This Standard was issued in draft form for comment as DR AS 1299:2022.

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ISBN 978 1 76113 904 8

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Originated as AS 1299—1973 and AS 1300—1973.
Previous editions AS/NZS 1299:2009 and AS/NZS 1300:2009.
Revised amalgamated and redesignated as AS 1299:2022.

Preface

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee EL-023, Electrical Equipment in Mines and Quarries, to supersede AS/NZS 1299:2009, *Electrical equipment for mines and quarries — Explosion-protected three-phase restrained plugs and receptacles for working voltages up to and including 3.3 kV* and AS/NZS 1300:2009, *Electrical equipment for mines and quarries — Bolted explosion-protected three-phase cable coupling devices*.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this document as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this document is to provide requirements and guidance for explosion-protected three-phase restrained plugs, receptacles and cable coupling devices 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 document differs from the previous edition in that it combines the previous AS/NZS 1299 and AS/NZS 1300 into one document (now designated AS 1299).

The terms “normative” and “informative” are used in Standards to define the application of the appendices 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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1 Scope and general

1.1 Scope

This document specifies the design and test requirements for explosion-protected three-phase restrained and bolted devices. These devices incorporate power contacts, one or more pilot contacts, an earth contact, an earthed phase barrier and possibly one or more auxiliary contacts. These devices are intended for use with restricted earth-fault systems in mines and quarries. Bolted devices are intended for use with a working voltage up to and including 11 kV. Restrained devices are limited to a working voltage of up to and including 3.3 kV.

This document is also applicable to back-to-back couplers (receptacles), that enable lengths of cable fitted with restrained plugs to be coupled together.

Restrained and bolted devices constructed to this document are not intended to be coupled or uncoupled while the circuit is energized.

This document covers two types of restrained and bolted devices as follows:

(a) **Type A**

Designed according to figures in this document that prescribe the dimensions necessary to interconnect restrained and bolted devices from different manufacturers.

(b) **Type B**

Designed to dimensions that are not compatible with Type A. Type B restrained and bolted devices cannot be plugged into or accept a Type A device under normal operation.

Type B restrained devices do not conform to Figures 4.1 to 4.21 and Type B bolted devices do not conform to Figures 5.1 to 5.8 but conform to all other requirements of this document. Where there is a variation to a particular clause for Type B restrained and bolted devices it is specifically stated. The use of transition devices between Type A and Type B systems is permitted.

This document 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.

This document provides for plug and receptacle discrimination, i.e. an arrangement whereby plugs and receptacles of different rated voltages or currents are physically prevented from being engaged.

The requirements of AS/NZS 1747 should be considered in the design of these devices.

NOTE 1 Appendix A lists the information that a user should provide with any enquiry or order.

NOTE 2 Appendix C lists the information which should be supplied by the designer or manufacturer.

NOTE 3 See Figures 4.1 to 4.21 for dimensions of restrained devices.

NOTE 4 See Figures 5.1 to 5.8 for dimensions of bolted devices.