

Australian Standard[®]

**Electrical equipment for coal
mines—Flameproof restrained
plugs and receptacles**

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The following interests are represented on Committee EL/23:

Australian Chamber of Commerce and Industry
Australian Coal Association
Australian Electrical and Electronic Manufacturers Association
Department of Mineral Resources, N.S.W.
Department of Resource Industries, Qld
Joint Coal Board
Institution of Mining Electrical and Mining and Mechanical Engineers
Regulatory authorities (Electrical)

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**Electrical equipment for coal
mines—Flameproof restrained
plugs and receptacles**

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PREFACE

This Standard was prepared by the Standards Australia Committee on Electrical Equipment in Coal Mines and supersedes AS 1299—1989, *Electrical Equipment for Coal Mines—Flameproof restrained plugs and receptacles*. It is intended for the guidance of manufacturers, users, regulatory authorities and associated interests and for use with other related Australian Standards and relevant mining regulations.

Major changes are as follows:

- (a) Incorporation of all amendments to the 1989 edition.
- (b) Change of material tensile strength requirement of Clause 2.3 from 450 MPa to 220 MPa for parts other than the engaging portion of the plug case.
- (c) Provision for six-pin plug and receptacles.
- (d) Reference to AS 3573—*Electrical equipment for coal mines—Glossary of terms*.

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STANDARDS AUSTRALIA

Australian Standard
**Electrical equipment for coal mines—
Flameproof restrained plugs and receptacles**

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE This Standard specifies the dimensional and test requirements for flameproof restrained plugs and receptacles, incorporating three power contacts, one pilot contact and possibly one or more auxiliary contact, a scraping earth contact and an earthed phase barrier, intended for use with restricted earth-fault systems in coal mines. Provision is also made for restrained coupling units which enable lengths of trailing cable to be coupled together.

Restrained plugs and receptacles to this Standard are not intended to be coupled or uncoupled while the circuit is energized.

The Standard prescribes the dimensions necessary to provide for the interconnection of restrained plugs and receptacles of different makes; it also deals with some electrical and mechanical requirements including the provision of earthed phase barriers for protection against interphase faults. It does not, however, purport to specify a fully detailed design.

The Standard provides for plug and receptacle discrimination, i.e. an arrangement whereby plugs and receptacles of different rated voltages are physically prevented from engagement.

NOTES:

- 1 The term 'receptacle' as used in this Standard is synonymous with the term 'socket-outlet' in AS 3000. The term 'receptacle' has been chosen to avoid confusion with the individual sockets within the plug.
- 2 Appendix A lists information which should be supplied by a user with any enquiry or order.
- 3 A typical plug and receptacle assembly is shown in Figure 1.1 and a typical plug coupling unit is shown in Figure 1.2.

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

AS

1147	Electrical equipment for coal mines—Insulating materials
1147.1	Part 1: Materials for insulating power conducting components
1802	Reeling and trailing electric cables for underground coal mining purposes
1828	Electrical equipment for explosive atmospheres—Cable glands
1856	Electroplated coatings—Silver
1972	Electric cables—Underground coal mines—Other than reeling and trailing cables