

Australian/New Zealand Standard™

**Electrical equipment for coal mines, for
use underground**

Part 1: General requirements



Standards Australia



STANDARDS
NEW ZEALAND
Pūrongo Aotearoa

AS/NZS 4871.1:2002

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The following interests are represented on Committee EL-023:

Australian Chamber of Commerce and Industry
Australian Coal Association
Australian Electrical and Electronic Manufacturers Association
Australian Industry Group
Department of Mineral Resources, N.S.W.
Department of Natural Resources and Mines (QLD)
Electrical Apparatus Service Association
Mining Electrical and Mining Mechanical Engineering Society
New Zealand Hazardous Areas Electrical Co-ordinating Committee
Regulatory authorities (electrical)
Regulatory interests, New Zealand
University of Newcastle
WorkCover New South Wales

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Australian/New Zealand Standard™

Electrical equipment for coal mines, for use underground

Part 1: General requirements

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-023, Electrical Equipment in Coal Mines.

The objective is to set out the minimum design, manufacturing, testing and performance standards for electrical equipment intended for use in underground coal mines.

This Standard is Part 1 of the series AS/NZS 4871 *Electrical equipment for coal mines, for use underground*, prepared to supersede AS 1039, AS 1740, AS 2595.1 and AS 2989 (in part). The Australian Standards will remain available superseded until all relevant regulations have been updated.

The AS/NZS 4871 series comprises the following parts:

- Part 1: General requirements (this Part)
- Part 2: Distribution, control and auxiliary equipment
- Part 3: Substations
- Part 4: Mains powered electrical mobile machines
- Part 5: Battery powered electrical mobile machines

In recognition of changes made to this Standard, existing equipment should be assessed for risk and interim control measures should be implemented.

Current installed equipment should be updated to conform to this Standard. Compliance improvements should be made within a time frame that takes into consideration the cost of upgrading and the associated risk levels.

Enquiries concerning approval in Australia should be made to the following organizations:

- (a) Department of Mineral Resources N.S.W.
- (b) Department of Natural Resources and Mines (QLD).
- (c) Department of Mineral and Petroleum Resources, W.A.
- (d) Department of Mines and Energy S.A.
- (e) Department of Industry, Technology and Resources, Vic.

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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STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard sets out the general requirements for all electrical equipment intended for use in underground coal mines.

1.2 APPLICATION

This Standard applies to electrical equipment for use in underground coal mines, with additional requirements specified in the other relevant Parts of this series of Standards:

Part 2: Distribution, control and auxiliary equipment

Part 3: Substations

Part 4: Mains powered electrical mobile machines

Part 5: Battery powered electrical mobile machines

NOTE: Information to be supplied by the purchaser is given in Appendix A.

1.3 SERVICE CONDITIONS

Electrical equipment complying with this Standard shall be suitable, within the limits of its ratings, for installation under the following service conditions:

(a) *Range of ambient temperature*

Ambient temperatures within the range of -5°C to 40°C .

NOTE: Where higher temperatures are possible special consideration should be given to the design of equipment.

(b) *Humidity*

The relative humidity of the mine environment may vary between 30% and dew point.

(c) *Environmental conditions*

Conditions peculiar to mining such as chemical fumes, wetting agents, stone dusting and corrosive agents present in mine water.

(d) *Service range*

Where equipment has a defined electrical and mechanical service range, suitable precautions shall be taken to ensure their proper functioning. The manufacturer shall inform the purchaser of any restrictions and precautions to be taken.

NOTE: Certain applications may require service conditions outside those specified above.