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Australian Standard 2595, Part 1—1983

**ELECTRICAL EQUIPMENT FOR COAL
MINES—ELECTRICAL REQUIREMENTS
FOR UNDERGROUND MINING
MACHINES AND ACCESSORIES**

**Part 1—EQUIPMENT FOR USE IN
EXPLOSIVE
ATMOSPHERES**



STANDARDS ASSOCIATION OF AUSTRALIA
Incorporated By Royal Charter



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Association of Mining Electrical and Mechanical Engineers, Australia
Australian Coal Association
Australian Electrical and Electronic Manufacturers Association
Confederation of Australian Industry
Department of Industrial Relations, N.S.W.
Department of Mines, Qld
Elcom Collieries, N.S.W.
Joint Coal Board
Queensland Confederation of Industry
State Energy Commission of Western Australia

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AUSTRALIAN STANDARD

**ELECTRICAL EQUIPMENT FOR COAL
MINES—ELECTRICAL REQUIREMENTS
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MACHINES AND ACCESSORIES**

**Part 1
EQUIPMENT FOR USE IN
EXPLOSIVE ATMOSPHERES**

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PREFACE

This standard was prepared by the Association's Committee on Electrical Equipment in Coal Mines. It is intended for the guidance of manufacturers, users, statutory authorities and associated interests and for use with SAA standards and relevant mining regulations.

In its terminology and general treatment of the subject, this standard took into account Part 18, Chapter I, Title 30, of the U.S.A. Code of Federal Regulations 1975 (known as Schedule 2G), and other Parts. The values for dimensions, specific descriptions and tests which are known to be in conflict with Australian standards or regulations have been altered accordingly, but some information which has not previously appeared in other Australian documents has been retained in the interest of guiding the industry. Acknowledgement is made of the assistance received from this source.

This standard does not cover long-wall machines. It is intended that long-wall machines will be covered in a future edition.

Part 2 of this standard is in course of preparation to cover equipment for use in non-explosive atmospheres.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

for

ELECTRICAL EQUIPMENT FOR COAL MINES—ELECTRICAL REQUIREMENTS FOR UNDERGROUND MINING MACHINES AND ACCESSORIES

PART 1—EQUIPMENT FOR USE IN EXPLOSIVE ATMOSPHERES

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This standard specifies the requirements for the design, construction and testing of electric motor-driven coal mining machines (hereinafter referred to as electrical machines) and accessories intended for use in explosive atmospheres of underground coal mines.

This standard does not apply to long-wall machines.

1.2 APPLICATION. All electrical machines shall comply with the requirements of Sections 2, 3 and 6.

Battery-operated machines shall, in addition, comply with Section 4.

Electrical machines incorporating remote control systems shall, in addition, comply with Section 5.

1.3 REFERENCED DOCUMENTS. A list with titles of the documents referred to in this standard is given in the Annex.

1.4 DEFINITIONS. For the purpose of this standard, the following definitions apply:

1.4.1 Accessory—associated electrical equipment, such as a distribution or control box, that is not an integral part of an approved (permissible) machine.

1.4.2 Applicant—a company, corporation, organization, association, partnership, individual or manufacturer's registered agent that designs, manufactures, repairs, assembles, or controls the assembly of an electrical machine or accessory and seeks approval from the authority for its use in an explosive atmosphere in an underground coal mine.

1.4.3 Approval—a formal document issued by the Authority which states that a completely assembled electrical machine or accessory has complied with the applicable requirements of this standard and which authorizes the attachment of an approval plate so indicating.

1.4.4 Approval plate—a stainless steel or brass metal plate, the design of which complies with the Authority's requirements, and is attached to an approved machine or accessory, identifying it as permissible for use in explosive atmospheres in underground coal mines.

1.4.5 Approved—approved by the Authority.

1.4.6 Assembly—a combination of components and explosion-protected equipment.

1.4.7 Authority—the relevant Statutory Authority responsible for the implementation of State government regulations applying to coal mines in the States of Australia.

1.4.8 Authorized inspector—a person authorized by the Authority to determine whether the applicable requirements of this standard have been complied with in the original manufacture, rebuilding, or repairing of equipment for which approval is sought.

1.4.9 Cable hose—an approved flexible hose used for enclosing a covered or braided machine cable, as described in AS 1972, in order to provide the required mechanical protection.

1.4.10 Component—an integral part of an electrical machine or accessory.

1.4.11 Encapsulated component—a component that is entirely embedded in a solidified insulating material within an enclosure.

1.4.12 Experimental equipment—any electrical machine or accessory that an applicant or an Authority may desire to operate experimentally for a limited time in a coal mine. (For example, this might include a machine constructed at a mine, an imported machine or a machine or device designed and developed by the Authority.)

1.4.13 Flameproof enclosure—an enclosure for electrical equipment that will withstand, without damage, an explosion of a prescribed flammable gas or vapour within the enclosure and will prevent the transmission of flame such as will ignite the external prescribed flammable gas or vapour for which it is designed, and which operates at such an external temperature as will not ignite a surrounding flammable atmosphere.

A flameproof enclosure, in accordance with the foregoing definition, will not necessarily or ordinarily be weatherproof, dustproof, etc.

1.4.14 Flameproof joint—the place where corresponding surfaces of two parts of an enclosure come together and prevent the transmission of an internal explosion to the explosive atmosphere surrounding the enclosure.

1.4.15 Flame resistant—as applied to cable, hose and insulating materials means material that will not support combustion.

1.4.16 Flammable mixture—a mixture of a prescribed gas and air that when ignited will propagate flame.