AS 3007.2—1987

Australian Standard®

Electrical installations—Surface mines and associated processing plant

Part 2: General protection requirements

This Australian standard was prepared by Committee EL/33, Electrical Installations for Outdoor Sites Under Heavy Conditions (Including Open-cast Mines and Quarries). It was approved on behalf of the Council of the Standards Association of Australia on 27 February 1987 and published on 4 May 1987.

The following interests are represented on Committee EL/33:

Association of Consulting Engineers Australia

Australian Electrical and Electronic Manufacturers Association

Australian Institute of Mining and Metallurgy

Confederation of Australian Industry

Department of Industrial Relations, N.S.W.

Department of Mines, Qld

Department of Mines, Tas.

Electricity Supply Association of Australia

Mining Interests

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PREFACE

This standard was prepared by the Association's Committee on Electrical Installations for Outdoor Sites Under Heavy Conditions (including Open-cast Mines and Quarries) to supersede AS 3007, Part 2—1982.

It is essentially identical with IEC 621-2, as supplemented by IEC 621-2A, which were prepared by the corresponding IEC Technical Committee, i.e. TC 71. The alterations incorporated in this new edition stem primarily from several amendments to IEC 621-2 which have recently been published or which are in the final stages of preparation, viz:

(a) Amendment No 1 (1984) — see Section 4 and Appendix B herein.

(b) Amendment No 2 (1986) — see Clause 2 and Table 2 herein.

(c) A further amendment, in course of publication, based on IEC Document 71(Central Office)34 — see Clause 7, Table 5 and Figs 1 to 4 herein.

Where this standard deviates technically from IEC 621-2 (including the amendments described above) by way of different or additional requirements, this is indicated by a rule in the margin against the clause, or part thereof, affected. A summary of such technical variations is given in the Annex.

The Australian Committee (EL/33) has actively participated in the work of IEC TC 71 which has as its objective the development of uniform and internationally acceptable rules for the safe use of electricity in open-cast mines, quarries, stockpiles and the like. Such applications present particularly onerous conditions for the electrical apparatus and systems, including continual alteration of the location of the apparatus and systems, extension of the operational area, and adverse environmental conditions. Because of the size of the plant and the need for mobility, supply is frequently at high voltage over long distances, by means of trailing cables. This should be compared with other industries where the electrical installations are generally fixed.

The AS 3007 series specifies requirements for the installation and operation of electrical apparatus and systems in the above mentioned locations, with the object of ensuring the safety of persons, livestock and property. AS 3007.1 outlines the scope of the AS 3007 series and provides definitions for some of the terms used. AS 3007.2 (this standard) specifies measures which are required for protection against electric shock in normal service from direct contact with live parts, for protection against electric shock from parts which may become live in the event of a fault (indirect contact), and for protection against the effects of overcurrent resulting from overload or short-circuit conditions. AS 3007.3 prescribes general requirements for equipment and ancillaries associated with the electrical installation. AS 3007.4 sets out the requirements which are specific to particular installations, together with exemptions from the general requirements of AS 3007.2 and 3, which apply for such installations. AS 3007.5 sets out the normal operating procedures which should be carried out to ensure the safety of personnel.

The AS 3007 series recognizes several types of power supply system and specifies the protective measures which are necessary for each system. Requirements for protection of persons from indirect contact (see Section 2 of this standard) are based on the concept of permissible voltage versus time limits, which take into account the pathophysiological effects of electric current passing through the human body, typical industry conditions, and the probability of persons being in contact with the plant. In this and other respects the AS 3007 series differs in approach from the practically evolved requirements of AS 3000, SAA Wiring Rules.

It will therefore be necessary for the regulatory authorities concerned to clearly delineate the respective areas of application for the AS 3007 series and for AS 3000.

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