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**Electrical installations—  
Surface mines and associated  
processing plant**

**Part 3: General requirements for  
equipment and ancillaries**

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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.

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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  
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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 3—1982.

It is essentially identical with IEC 621-3\* which was prepared by the corresponding IEC Technical Committee, i.e. TC 71. Where this standard deviates technically from IEC 621-3 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 composite standard and provides definitions for some of the terms used. AS 3007.2 specifies the 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 (this standard) specifies general requirements for the equipment and ancillaries associated with the electrical installation. AS 3007.4 sets out the requirements which are specific to particular installations, together with any exemptions from the general requirements of AS 3007.2 and AS 3007.3 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 the protection of personnel from indirect contact (see Section 2 of AS 3007.2) are based on the concept of permissible voltage versus time limits, which take into account the patho-physiological effects of electric current passing through the human body, the 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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\* Including Amendment No 1 (1986) to IEC 621-3.

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STANDARDS ASSOCIATION OF AUSTRALIA

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**Australian Standard**

**for**

**ELECTRICAL INSTALLATIONS — SURFACE MINES AND ASSOCIATED PROCESSING  
PLANT**

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PART 3 — GENERAL REQUIREMENTS FOR EQUIPMENT AND ANCILLARIES

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SCOPE OF PART

This standard sets out requirements for the equipment and ancillaries associated with electrical installations within the scope of AS 3007.1.

REFERENCED DOCUMENTS

The following standards are referred to in this standard:

AS 1081	Methods of Measurement of Airborne Noise Emitted by Rotating Electrical Machinery
AS 1217	Acoustics — Determination of Sound Power Levels of Noise Sources
AS 1221	Fire Hose Reels
AS 1603	Automatic Fire Detection and Alarm Systems
AS 1668	SAA Mechanical Ventilation and Airconditioning Code Part 1 — Fire Precautions in Buildings with Air-handling Systems
AS 1670	SAA Code for Automatic Fire Alarm Installations
AS 1850	Portable Fire Extinguishers — Classification, Rating and Fire Testing
AS 2118	SAA Code for Automatic Fire Sprinkler Systems
AS 2279	Disturbances in Mains Supply Networks Part 2 — Limitation of Harmonics Caused by Industrial Equipment
AS 2380	Electrical Equipment for Explosive Atmospheres — Explosion Protection Techniques
AS 2441	Installation of Fire Hose Reels
AS 2444	Portable Fire Extinguishers — Selection and Location
AS 2665	Smoke/Heat Venting Systems — Design, Installation and Commissioning
AS 3007.1	Electrical Installations — Surface Mines and Associated Processing Plant Part 1 — Scope and Definitions
AS 3007.2	Electrical Installations — Surface Mines and Associated Processing Plant Part 2 — General Protection Requirements
AS 3007.4	Electrical Installations — Surface Mines and Associated Processing Plant Part 4 — Additional Requirements for Specific Applications
IEC 502	Extruded Solid Dielectric Insulated Power Cables for Rated Voltages from 1 kV Up to 30 kV
IEC 621-3	Electrical Installations for Outdoor Sites Under Heavy Conditions (Including Open-cast Mines and Quarries) Part 3: General Requirements for Equipment and Ancillaries.