AS 1824.1—1995 IEC 71-1:1993

Australian Standard®

Insulation co-ordination

Part 1: Definitions, principles and rules

This Australian Standard was prepared by Committee EL/7, Power Switchgear. It was approved on behalf of the Council of Standards Australia on 21 December 1994 and published on 5 March 1995.

The following interests are represented on Committee EL/7:

WorkCover Authority of New South Wales

Australian-British Chamber of Commerce
Australian Electrical and Electronic Manufacturers Association
Electricity Supply Association of Australia
Institution of Engineers, Australia
Railways of Australia Committee
Testing Authorities, Australia

Review of Australian Standards. To keep abreast of progress in industry, Australian Standards are subject to periodic review and are kept up to date by the issue of amendments or new editions as necessary. It is important therefore that Standards users ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all Australian Standards and related publications will be found in the Standards Australia Catalogue of Publications; this information is supplemented each month by the magazine 'The Australian Standard', which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.

Suggestions for improvements to Australian Standards, addressed to the head office of Standards Australia, are welcomed. Notification of any inaccuracy or ambiguity found in an Australian Standard should be made without delay in order that the matter may be investigated and appropriate action taken.

AS 1824.1—1995

# Australian Standard®

## Insulation co-ordination

# Part 1: Definitions, principles and rules

First published as AS C337—1963. Revised and redesignated AS 1824.1—1976. Second edition 1985. Third edition 1995.

Incorporating: Amdt 1—1997

ii

#### **PREFACE**

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL/7 on Power Switchgear to supersede AS 1824, Insulation co-ordination (phase-to-earth and phase-to-phase, above 1 kV), Part 1: Basic principles, standard insulation levels and test procedures.

This Standard is the result of a consensus among representatives on the Joint Committee to produce it as an Australian Standard.

With the exception of Appendix ZZ, this Standard is equivalent in technical content but does not correspond in full presentation with IEC 71-1 (1993), *Insulation co-ordination*, Part 1: *Definitions*, principles and rules.

Appendix ZZ lists the Australian variations between this Standard and IEC 71-1. For the purposes of this Standard, the IEC text is amended, supplemented or replaced as set out in Appendix ZZ. These changes are indicated by a marginal bar against each clause, table, figure or part thereof affected.

As this Standard is reproduced from an international Standard, the following applies:

- (a) The AS number is shown only on the cover and title page.
- (b) In the source text, 'this International Standard' should read 'this Australian Standard'.
- (c) A full point substitutes for a comma when referring to a decimal marker.

The term 'normative' has been used in this Standard to define the application of the appendix to which it applies. A 'normative' appendix is an integral part of a Standard.

The reference to international Standards should be replaced by equivalent Australian Standards as follows:

Reference to International Standard		Australian Standard		
IEC		AS		
38	IEC standard voltages	2926	Standard voltages—	
			Alternating (50 Hz) and direct	
60	High-voltage test techniques	1931	High voltage testing techniques	
60-1	Part 1: General definitions and test	1931.1	Part 1: General definitions, test	
	requirements		requirements, test procedures and	
			measuring devices	

#### © Copyright - STANDARDS AUSTRALIA

Users of Standards are reminded that copyright subsists in all Standards Australia publications and software. Except where the Copyright Act allows and except where provided for below no publications or software produced by Standards Australia may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing from Standards Australia. Permission may be conditional on an appropriate royalty payment. Requests for permission and information on commercial software royalties should be directed to the head office of Standards Australia.

Standards Australia will permit up to 10 percent of the technical content pages of a Standard to be copied for use exclusively in-house by purchasers of the Standard without payment of a royalty or advice to Standards Australia.

Standards Australia will also permit the inclusion of its copyright material in computer software programs for no royalty payment provided such programs are used exclusively in-house by the creators of the programs.

Care should be taken to ensure that material used is from the current edition of the Standard and that it is updated whenever the Standard is amended or revised. The number and date of the Standard should therefore be clearly identified.

The use of material in print form or in computer software programs to be used commercially, with or without payment, or in commercial contracts is subject to the payment of a royalty. This policy may be varied by Standards Australia at any time.

## iii

## CONTENTS

Clau	ise		Page
1	Scope		. 1
2	Norma	ative references	. 1
3	Defini	tions	. 2
	3.1	Insulation co-ordination	. 2
	3.2	External insulation	. 2
	3.3	Internal insulation	. 2
	3.4	Self-restoring insulation	. 2
	3.5	Non-self-restoring insulation	
	3.6	Insulation configuration terminal	
	3.7	Insulation configuration	
	3.8	Nominal voltage of a system	
	3.9	Highest voltage of a system	
	3.10	Highest voltage for equipment $(U_m)$	
	3.11	Isolated neutral system	
	3.12	Solidly earthed neutral system	
	3.13	Impedance earthed (neutral) system	
	3.14	Resonant earthed (neutral) system	
	3.15	Earth fault factor	
	3.16	Overvoltage	
	3.17	Classification of voltages and overvoltages	
	3.18	Standard voltage shapes	
	3.19	Representative overvoltages $(U_p)$	
	3.20	Overvoltage limiting device	
	3.21	Lightning (or switching) impulse protective level	
	3.22	Performance criterion	
	3.23	Withstand voltage	
	3.24	Co-ordination withstand voltage $(U_{cw})$	
	3.25	Co-ordination factor $(K_c)$	
	3.26	Standard reference atmospheric conditions	. 6
	3.27	Required withstand voltage $(U_{rw})$	
	3.28	Atmospheric correction factor $(K_a)$	
	3.29	Safety factor $(K_s)$	
	3.30	Standard withstand voltage $(U_{w})$	
	3.31	Test conversion factor $(K_i)$	
	3.32	Rated insulation level	
	3.33	Standard insulation level	
	3.34	Standard withstand voltage tests	



	This is a free preview.	Purchase the e	entire publication	at the link below:
--	-------------------------	----------------	--------------------	--------------------

**Product Page** 

- Dooking for additional Standards? Visit Intertek Inform Infostore
- Dearn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation