

AS 2381.7—1989

Australian Standard[®]

**Electrical equipment for explosive
atmospheres— Selection,
installation and maintenance**

Part 7: Intrinsic safety i

This Australian Standard was prepared by Committee EL/14, Electrical Equipment in Hazardous Areas. It was approved on behalf of the Council of Standards Australia on 24 November 1988 and published on 20 March 1989.

The following interests are represented on Committee EL/14:

Australian Coal Association
Australian Electrical and Electronic Manufacturers Association
Australian Institute of Petroleum
Confederation of Australian Industry
Department of Defence
Department of Industrial Relations and Employment, N.S.W.
Department of Industry and Commerce
Department of Minerals and Energy, N.S.W.
Department of Mines, Qld
Electrical Contractors Associations of Australia
Electricity Supply Association of Australia
Institute of Instrumentation and Control
Insurance Council of Australia
Regulatory authorities (electrical)
Testing interests

Additional interests participating in preparation of Standard:

Australian Gas Association

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which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.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 2381.7—1989

Australian Standard[®]

**Electrical equipment for explosive
atmospheres— Selection,
installation and maintenance**

Part 7: Intrinsic safety i

First published in part as AS 1076.4—1977.
AS 2010 first published 1977.
AS 1076.4—1977 and AS 2010—1977 revised,
amalgamated and redesignated AS 2381.7—1989.

PUBLISHED BY STANDARDS AUSTRALIA
(STANDARDS ASSOCIATION OF AUSTRALIA)
1 THE CRESCENT, HOMEBUSH, NSW 2140

ISBN 0 7262 5463 0

PREFACE

This Standard was prepared by the Standards Australia Committee on Electrical Equipment in Hazardous Areas, to supersede AS 1076.4–1977, *Code of practice for selection, installation and maintenance of electrical apparatus and associated equipment for use in explosive atmospheres (other than mining applications), Part 4: Apparatus with type of protection 'i' – Intrinsically safe apparatus and systems*, and AS 2010–1977, *Code of practice for installation and application of shunt diode safety barriers*. This Standard is intended for the guidance of manufacturers, designers, installers, users, statutory authorities and associated interests.

In its terminology, definitions and general treatment of the subject, this Standard is similar to BS 5345, *Code of practice for selection, installation and maintenance of electrical apparatus for use in potentially explosive atmospheres (other than mining applications or explosive processing and manufacture, Part 4: Installation and maintenance requirements for electrical apparatus with type of protection 'i', intrinsically safe electrical apparatus and systems*.

Acknowledgement is made of the assistance received from this source.

This Standard is Part 7 of a series of Standards which deal with the installation of electrical equipment in potentially explosive atmospheres.

Historically, intrinsic safety has been used as a protection technique for electrical equipment intended to be used in explosive gas (Class I) atmospheres. However, this technique has now been recognized as suitable for combustible dust areas (Class II) under certain specified conditions.

The purpose of this new edition is to ensure that all requirements for intrinsic safety installations are contained in one Standard.

© 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.

CONTENTS

	<i>Page</i>
SECTION 1. SCOPE AND GENERAL	
1.1 SCOPE	4
1.2 REFERENCED DOCUMENTS	4
1.3 DEFINITIONS	4
1.4 CERTIFICATION	4
1.5 SIMPLE OR LOW ENERGY DEVICES	5
SECTION 2. SELECTION OF EQUIPMENT	
2.1 GENERAL	6
2.2 CATEGORIES	6
2.3 GROUPING	6
2.4 PERMISSIBLE USE	6
2.5 TEMPERATURE CLASSIFICATION	6
2.6 ENVIRONMENTAL CONDITIONS	6
2.7 SELECTION OF BARRIER DEVICES	6
SECTION 3. INSTALLATION	
3.1 SCOPE OF SECTION	7
3.2 APPLICATION	7
3.3 INTERCONNECTING CABLES	7
3.4 EARTHING	8
3.5 CABLE JOINTING DEVICES	9
3.6 BARRIER DEVICES	9
3.7 PROCESS CONNECTIONS	9
3.8 MODIFICATION	9
SECTION 4. INSPECTION, TESTING AND MAINTENANCE	
4.1 GENERAL	10
4.2 DOCUMENTATION	10
4.3 FORMS OF INSPECTION	10
4.4 ON-SITE ELECTRICAL TESTING	10
4.5 MAINTENANCE	11
APPENDICES	
A DETERMINATION OF EXTERNAL CIRCUIT PARAMETERS FOR INTRINSICALLY SAFE SYSTEMS	12
B INFORMATION REGARDING INSTALLATION	16
C INSPECTION, TESTING AND MAINTENANCE	17
D GUIDANCE ON EARTHING	22

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

[Product Page](#)

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