Australian/New Zealand Standard™

Electrical apparatus for explosive gas atmospheres

Part 10: Classification of hazardous areas (IEC 60079-10:2002 MOD)

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee MS-011, Classification of Hazardous Areas. It was approved on behalf of the Council of Standards Australia on 31 March 2004 and on behalf of the Council of Standards New Zealand on 30 April 2004.
This Standard was published on 20 May 2004.

The following are represented on Committee MS-011:

Auckland Regional Chamber of Commerce
Australian Association of Certification Bodies
Australian Chamber of Commerce and Industry
Australian Industry Group
Australian Liquefied Petroleum Gas Association Limited
Australian Paint Manufacturers Federation
Certification Bodies (Australia)
Department of Labour New Zealand
Department of Natural Resources and Mines (Qld)
Electricity Supply Association of Australia
Gas Association of New Zealand Inc
Institute of Electrical Inspectors
Institute of Instrumentation and Control Australia
Institution of Engineers Australia
LPG Association of New Zealand (Inc)
Ministry of Economic Development (New Zealand)
National Electrical and Communications Association
New Zealand Association of Marine, Aviation and Power Engineers
New Zealand Oil Companies
The Australian Gas Association
The New Zealand Chemical Industry Council Inc
Victorian WorkCover Authority
WorkCover New South Wales

Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at www.standards.com.au or Standards New Zealand web site at www.standards.co.nz and looking up the relevant Standard in the on-line catalogue.

Alternatively, both organizations publish an annual printed Catalogue with full details of all current Standards. For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia or Standards New Zealand at the address shown on the back cover.

This Standard was issued in draft form for comment as DR 03567.

AS/NZS 60079.10:2004
(Incorporating Amendment No. 1)

Australian/New Zealand Standard™

Electrical apparatus for explosive gas atmospheres

Part 10: Classification of hazardous areas (IEC 60079-10:2002 MOD)

Originated in Australia as AS 1076.2—1977 and AS 2430.1—1981.
Previous edition AS 2430.1—1987.
Originated in New Zealand as NZS 6101.1:1988.
AS 2430.1—1987 and NZS 6101.1:1988 jointly revised and redesignated as AS/NZS 60079.10:2004.
Reissued incorporating Amendment No. 1 (March 2007).

Jointly published by Standards Australia, GPO Box 476, Sydney, NSW 2001 and Standards New Zealand, Private Bag 2439, Wellington 6020

ISBN 0 7337 5977 7

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee MS-011, Classification of Hazardous Areas to supersede AS 2430.1—1987 and NZS 6101.1:1988, *Classification of hazardous areas, Part 1: Flammable gas and vapour atmospheres.*

This Standard incorporates Amendment No. 1 (March 2007). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

The objective of this Standard is to set out requirements for the classification of areas where flammable gas or vapour risks might arise, in order to permit the proper selection and installation of electrical apparatus for use in such hazardous areas. This Standard is for the use of manufacturers and installers of electrical equipment as well as by electrical inspecting authorities.

This Standard is an adoption with national modifications and has been reproduced from, IEC 60079-10:2002, *Electrical apparatus for explosive gas atmospheres—Part 10: Classification of hazardous areas*; it has been varied as indicated, for the protection of human health and safety, a legitimate reason under the WTO Agreement on Technical Barriers to Trade (TBT).

Variations to IEC 60079-10:2002 are indicated at the appropriate places throughout this standard. Strikethrough (~~example~~) identifies IEC text, tables and figures which, for the purposes of this Australian/New Zealand Standard, are deleted. Where text, tables or figures are added, each is set in its proper place and identified by shading (example).

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

(a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.

(b) In the source text ‘this international standard’ should read ‘this Australian/New Zealand Standard’.

(c) A full point should be substituted for a comma when referring to a decimal marker.

(d) Any French text on figures should be ignored.

The terms ‘normative’ and ‘informative’ are used to define the application of the annex to which they apply. A normative annex is an integral part of a standard, whereas an informative annex is only for information and guidance.

CONTENTS

INTRODUCTION

In areas where dangerous quantities and concentrations of flammable gas or vapour may arise, protective measures are to be applied in order to reduce the risk of explosions. This part of IEC 60079 sets out the essential criteria against which the risk of ignition can be assessed, and gives guidance on the design and control parameters which can be used in order to reduce such a risk.

This standard can be used as a basis for the proper selection and installation of apparatus for use in a hazardous area.

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard

Electrical apparatus for explosive gas atmospheres Part 10: Classification of hazardous areas (IEC 60079-10:2002 MOD)

Any table, figure or text of the international standard that is struck through is not part of this standard. Any Australian/New Zealand table, figure or text that is added is part of this standard and is identified by shading.

1 General

1.1 Scope

This part of IEC 60079 is concerned with the classification of hazardous areas where flammable gas or vapour risks may arise, in order to permit the proper selection and installation of apparatus for use in such hazardous areas.

It is intended to be applied where there may be a risk of ignition due to the presence of flammable gas or vapour, mixed with air under normal atmospheric conditions (see note 2), but it does not apply to

a) mines susceptible to firedamp;

b) the processing and manufacture of explosives;

c) areas where a risk may arise due to the presence of ignitable dusts or fibres;

d) catastrophic failures which are beyond the concept of abnormality dealt with in this standard (see note 3);

e) rooms used for medical purposes;

f) areas where the presence of flammable mist may give rise to an unpredictable risk and which require special consideration (see note 5);

g) domestic premises.

h) areas which may be affected by oxygen enrichment.

This standard does not take into account the effects of consequential damage.

Definitions and explanations of terms are given together with the main principles and procedures relating to hazardous area classification.

For detailed recommendations regarding the extent of the hazardous areas in specific industries or applications, reference may be made to the codes relating to those industries or applications.

Some specific examples of area classifications are contained in the various Parts of AS/NZS 2430.3.

NOTE 1 For the purpose of this standard, an area is a three-dimensional region or space.

NOTE 2 Atmospheric conditions include variations above and below reference levels of 101,3 kPa (1 013 mbar) and 20°C (293 K), provided that the variations have a negligible effect on the explosion properties of the flammable materials.

NOTE 3 Catastrophic failure in this context is applied, for example, to the rupture of a process vessel or pipeline and events that are not predictable.