AS/NZS 60079.0:2008
IEC 60079-0, Ed. 5.0 (2007)

AS/NZS 60079.0:2008

Australian/New Zealand Standard™

Explosive atmospheres

Part 0: Equipment—General requirements

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-014, Equipment for Explosive Atmospheres. It was approved on behalf of the Council of Standards Australia on 29 February 2008 and on behalf of the Council of Standards New Zealand on 11 April 2008.
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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.

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Australian/New Zealand Standard™

Explosive atmospheres

Part 0: Equipment—General requirements

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-014, Equipment for Explosive Atmospheres, to supersede AS/NZS 60079.0:2005.

The objective of this Standard is to specify the general requirements for construction, testing and marking of electrical equipment and Ex components intended for use in explosive atmospheres.

This Standard is identical with, and has been reproduced from, IEC 60079-0, Ed. 5.0(2007), *Explosive atmospheres – Part 0: Equipment—General requirements*.

The main changes with respect to the previous edition are listed below.

(a) Requirements for explosive dust atmospheres transferred from AS/NZS 61241.0.

(b) The marking Group 'II' alone has been replaced by 'IIA', 'IIB', or 'IIC' as many of the enclosure requirements are now aligned with a specific sub-group.

(c) Dust groups defined as Group IIIA, IIIB and IIIC.

(d) Limits for ultrasonic and electromagnetic radiation introduced.

(e) Remainder of 'electrostatic' requirements transferred from AS/NZS 60079.26.

(f) Equipment protection levels (EPL) introduced.

(g) Transition of term from 'apparatus' to 'equipment' (where appropriate).

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

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

(ii) In the source text 'IEC 60079-0' should read 'AS/NZS 60079.0'.

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

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.

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1 Scope

This part of IEC 60079 specifies the general requirements for construction, testing and marking of electrical equipment and Ex components intended for use in explosive atmospheres.

Unless modified by one of the standards supplementing this standard, electrical equipment complying with this standard is intended for use in hazardous areas in which explosive atmospheres exist under normal atmospheric conditions of

- temperature –20 °C to +60 °C;
- pressure 80 kPa (0,8 bar) to 110 kPa (1,1 bar); and
- air with normal oxygen content, typically 21 % v/v.

The application of electrical equipment in atmospheric conditions outside this range requires special consideration and may require additional assessment and testing.

NOTE 1 Although the normal atmospheric conditions above give a temperature range for the atmosphere of -20°C to +60°C, the normal ambient temperature range for the equipment is -20°C to +40°C, unless otherwise specified and marked. See 5.1.1.

NOTE 2 In designing equipment for operation in explosive atmospheres under conditions other than the atmospheric conditions given above, this standard may be used for guidance. However, additional testing related specifically to the intended conditions of use is recommended. This is particularly important when the types of protection ‘flameproof enclosure “d”’ (IEC 60079-1) and ‘intrinsic safety “i”’ (IEC 60079-11 or IEC 61241-11) are applied.

NOTE 3 Requirements given in this standard result from an ignition hazard assessment made on electrical equipment. The ignition sources taken into account are those found associated with this type of equipment, such as hot surfaces, mechanically generated sparks, thermite reactions, electrical arcing and static electric discharge in normal industrial environments.

NOTE 4 It is acknowledged that, with developments in technology, it may be possible to achieve the objectives of the IEC 60079 series of standards in respect of explosion prevention by methods that are not yet fully defined. Where a manufacturer wishes to take advantage of such developments, this International Standard, as well as other standards in the IEC 60079 series, may be applied in part. It is intended that the manufacturer prepare documentation that clearly defines how the IEC 60079 series of standards has been applied, together with a full explanation of the additional techniques employed. The designation “Ex s” has been reserved to indicate a type of protection that is not defined by the IEC 60079 series of standards, but may be referenced in national requirements.

NOTE 5 Where an explosive gas atmosphere and a combustible dust atmosphere are, or may be, present at the same time, the simultaneous presence of both should be considered and may require additional protective measures.

This standard does not specify requirements for safety, other than those directly related to the explosion risk. Ignition sources like adiabatic compression, shock waves, exothermic chemical reaction, self ignition of dust, naked flames and hot gases/liquids, are not addressed by this standard.

NOTE 6 Such equipment should be subjected to a hazard analysis that identifies and lists all of the potential sources of ignition by the electrical equipment and the measures to be applied to prevent them becoming effective.