

Australian/New Zealand Standard™

**Electrical apparatus for the detection
and measurement of flammable gases**

**Part 6: Guide for the selection,
installation, use and maintenance of
apparatus for the detection and
measurement of flammable gases
(IEC 61779-6:1999 MOD)**



AS/NZS 61779.6:2000

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-014, Electrical Equipment in Hazardous Areas. It was approved on behalf of the Council of Standards Australia on 16 June 2000 and on behalf of the Council of Standards New Zealand on 16 June 2000.
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The following are represented on Committee EL-014:

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Auckland Regional Chamber of Commerce
Australian Association of Certification Bodies
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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-014, Electrical Equipment in Hazardous Areas.

This Standard incorporates Amendment No. 1 (July 2005). 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.

This Standard is a modified adoption of the International Standard, IEC 61779-6:1999, *Electrical apparatus for the detection and measurement of flammable gases Part 6: Guide for the selection, installation, use and maintenance of apparatus for the detection and measurement of flammable gases*; it has been varied, as indicated, for protection of human health and safety, a legitimate reason under the WTO Agreement on Technical Barriers to Trade (TBT).

Footnotes were included in pages 1, 2, 4, 9, 12, 18, 26 and 34, to highlight type errors and incorrections in the original text (all identified by shading).

One additional footnote (identified by shading) was included in page 34 to provide information on the Australian industry practice regarding the flammability limits for 'Methane'.

Variations to IEC 61779-6:1999 are indicated at the appropriate places throughout this Standard. Strikethrough (**example**) identifies IEC tables, figures and passages of text which, for the purposes of this Australia/New Zealand Standard, are deleted. Where Australia/New Zealand tables, figures or passages of text are added, each is set in its proper place and identified by shading (**example**). Annex ZZ contains a summary of all variations and their respective explanations.

The objective of this Standard is to provide guidance on the selection, installation, use and maintenance of apparatus for the detection and measurement of flammable gases.

In January 1997, the IEC commenced numbering its Standards from 60000 by adding 60000 to the number of each existing Standard. This coordinates IEC numbering with ISO numbering. During the transition period an IEC Standard might be identified by its new number or its old number (for example, IEC 60050 or IEC 50).

A reference to an International Standard identified in the Normative References Clause by strikethrough (**example**) is replaced by a reference to the Australian or Australian/New Zealand Standard(s) listed immediately thereafter and identified by shading (**example**).

In the case of identical Standards, the references to the International Standards have been replaced in the text by the respective Australian/New Zealand Standards.

This Standard is part of a series covering electrical apparatus for explosive gas atmospheres which comprises the following:

AS/NZS

- | | |
|---------|---|
| 61779 | Electrical apparatus for the detection and measurement of flammable gases |
| 61779.1 | Part 1: General requirements and test methods |
| 61779.2 | Part 2: Performance requirements for group I apparatus indicating a volume fraction up to 5% methane in air |
| 61779.3 | Part 3: Performance requirements for group I apparatus indicating a volume fraction up to 100% methane in air |
| 61779.4 | Part 4: Performance requirements for group II apparatus indicating a volume fraction up to 100% lower explosive limit |
| 61779.5 | Part 5: Performance requirements for group II apparatus indicating a volume fraction up to 100% gas |

61779.6 Part 6: Guide for the selection, installation, use and maintenance of apparatus for the detection and measurement of flammable gases (this Standard)

As this Standard is reproduced from an International Standard a full point should be substituted for a comma when referring to a decimal marker.

The terms 'normative' and 'informative' have been used in this Standard 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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INTRODUCTION

Flammable gas detection apparatus may be used whenever there is the possibility of a hazard to life or property caused by the accumulation of a flammable gas-air mixture. Such apparatus can provide a means of reducing the hazard by detecting the presence of the flammable gas and issuing suitable audible or visual warnings. Gas detectors may also be used to initiate specific precautions (for example plant shutdown, evacuation, operation of fire extinguishing procedures).

Apparatus may be used to monitor a gas atmosphere below the lower flammable limit in circumstances where accumulation of gas may result in a concentration of the gas/air mixture to potentially explosive levels.

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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**

1.1.1 This part of AS/NZS 61779 gives guidance on the selection, installation, use and maintenance of electrically operated group II apparatus for the detection and measurement of flammable gases complying with the requirements of ~~IEC 61779-1 to IEC 61779-5~~¹ AS/NZS 61779.1, AS/NZS 61779.4 and AS/NZS 61779.5. It is a compilation of practical knowledge to assist the user, and applies to apparatus, instruments and systems that indicate the presence of a flammable or potentially explosive mixture of gas or vapour with air by using an electrical signal from a gas sensor to produce a meter reading, to activate a visual or audible pre-set alarm or other device, or any combination of these.

NOTE – When in classified areas, the apparatus should be so installed and used that it is not capable of itself igniting a combustible gas-air mixture. It should therefore comply with the requirements of ~~IEC 60079-10~~² AS/NZS 60079.0.

For the purpose of this standard, flammable gases shall include flammable vapours.

1.1.2 This standard applies only to group II apparatus intended for use in industrial and commercial safety applications, involving areas classified in accordance with ~~IEC 60079-10~~, AS 2430.1 (in Australia) or NZS 6101.1 (in New Zealand) and AS/NZS 2430 Parts 3.1 to 3.9.

For the purpose of this standard, apparatus includes

- a) fixed apparatus;
- b) transportable apparatus; and
- c) portable apparatus.

1.1.3 This standard is not intended to cover the following:

- a) apparatus intended only for the detection of non-flammable toxic gases;
- b) apparatus of laboratory or scientific type intended only for analysis or measurement purposes;
- c) apparatus intended for underground mining applications;
- d) apparatus intended for applications in explosives processing and manufacture;

¹ In the original text it should read 'IEC 61779-1, IEC 61779-4 and IEC 61779-5'.

² In the original text it should read 'IEC 60079-0'.