AS/NZS 4641:2018

Australian/New Zealand Standard™

Electrical equipment for detection of oxygen and other gases and vapours at toxic levels—General requirements and test methods

STANDARDS Australia

STANDARDS NEW ZEALAND PAEREWA AOTEAROA

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Australian Chamber of Commerce and Industry
Australian Industry Group
Aviation and Marine Engineers Association
Construction, Forestry, Maritime, Mining and Energy Union
Department of Mines, Industry Regulation and Safety (WA)
Department of Natural Resources, Mines and Energy (Qld)
Engineers Australia
National Association of Testing Authorities, Australia
NSW Department of Industry, Skills and Regional Infrastructure Development
SafeWork NSW
University of Newcastle
WorkSafe New Zealand

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Australian/New Zealand Standard™

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-023, Electrical equipment in mines and quarries, to supersede AS/NZS 4641:2007.

The objective of this Standard is to provide general requirements and test methods for manufacturers, testing authorities and certifying bodies concerned with electrical equipment for the measurement of the concentration of oxygen and toxic levels of gases and vapours.

The principal differences between this edition and the 2007 edition are as follows:

(a) The nomenclature 'equipment' has replaced 'apparatus' but with the same meaning.

(b) Requirements have been revised to enhance consistency with the principles of IEC 60079.29.1:2016.

(c) The requirements for vibration testing have been expanded to discriminate between portable and machine-mounted equipment, and fixed and transportable equipment.

(d) Requirements for software documentation have been simplified.

(e) The requirements for fast transient testing have been relaxed for equipment intended for exclusive use in intrinsically safe applications.

(f) Requirements for testing for electromagnetic immunity have been revised to enable testing for specific applications.

(g) Appendix A has been added to describe tests to be completed on software/firmware revision.

The term 'informative' has been used in this Standard to define the application of the appendix to which it applies. An 'informative' appendix is only for information and guidance.

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STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard

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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard applies to gas detection equipment, including explosion-protected gas detection equipment, used to measure the concentration of oxygen and toxic levels of gases and vapours. This Standard also applies to those parts of multi-gas detection equipment which are used to measure the concentration of oxygen and toxic levels of gases and vapours.

This Standard does not apply to gas detection equipment, or those parts of multi-gas detection equipment, used to detect flammable gases and vapours below, within and above their flammability limits. Such equipment is covered by AS/NZS 60079.29.1.

NOTE: Equipment that is within the scope of this Standard and AS/NZS 60079.29.1 may be assessed and tested to both Standards.

1.2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS/NZS
60079 Explosive atmospheres
60079.0 Part 0: Equipment—General requirements
60079.20.1 Part 20.1: Material characteristics for gas and vapour classification—Test methods and data
60079.29.1 Part 29.1: Gas detectors—Performance requirements of detectors for flammable gases

61000 Electromagnetic compatibility (EMC)
61000.4.1 Part 4.1: Testing and measurement techniques—Overview of IEC 61000-4 series
61000.4.3 Part 4.3: Testing and measurement techniques—Radiated radio frequency electromagnetic field immunity test
61000.4.4 Part 4.4: Testing and measurement techniques—Electrical fast transient/burst immunity test

Australian Safety and Compensation Council*
Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003 (1995)]

Guidance Note on the Interpretation of Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:3008 (1995)]

Occupational Safety and Health Service Department of Labour, New Zealand
Workplace Exposure Standards†

* Refer to http://www.safeworkaustralia.gov.au.
† Refer to http://www.business.govt.nz/worksafe.