

Australian/New Zealand Standard™

**Explosive atmospheres**

**Part 15: Equipment protection by type  
of protection 'n'**



## **AS/NZS 60079.15:2011**

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-014, Explosive Atmospheres. It was approved on behalf of the Council of Standards Australia on 1 August 2011 and on behalf of the Council of Standards New Zealand on 21 July 2011.

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*This Standard was issued in draft form for comment as DR AS/NZS 60079.15.*

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# Australian/New Zealand Standard™

## Explosive atmospheres

### Part 15: Equipment protection by type of protection 'n'

Originated in Australia as AS 2238—1979.  
Previous edition AS/NZS 60079.15:2006.  
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## PREFACE

This Standard was prepared by Joint Standards Australia/Standards New Zealand Committee EL-014, Explosive Atmospheres to supersede AS/NZS 60079.15:2006, *Electrical apparatus for explosive gas atmospheres*, Part 15: *Construction, test and marking of type of protection, 'n' electrical apparatus*.

The objective of this Standard is to establish the specific requirements for construction, testing and marking for Group II electrical equipment with type of protection, 'n' intended for use in explosive gas atmospheres. It is intended to be read in conjunction with AS/NZS 60079.0.

The objective of this revision is to adopt the current edition of IEC 60079-15.

This Standard is identical with, and has been reproduced from IEC 60079-15 Ed. 4.0 (2010), *Explosive atmospheres*, Part 15: *Equipment protection by type of protection 'n'*.

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

- (a) Its number appears on the cover and title page while the International Standard number appears only on the cover.
- (b) In the source text 'this part of IEC 60079' should read 'this part of AS/NZS 60079'.
- (c) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

<i>Reference to International Standard</i>		<i>Australian/New Zealand Standard</i>	
IEC		AS	
60034	Rotating electrical machines	60034	Rotating electrical machines
60034-1	Part 1: Rating and performance	60034.1	Part 1: Rating and performance
60068	Environmental testing	60068	Environmental testing
60068-2-27	Part 2-27: Tests—Test Ea and guidance: Shock	60068.2.27	Part 2.27: Tests—Test Ea and guidance: Shock
		AS/NZS	
60079	Explosive atmospheres	60079	Explosive atmospheres
60079-0	Part 0: Equipment—General requirements	60079.0	Part 0: Equipment—General requirements
60079-1	Part 1: Equipment protection by flameproof enclosures 'd'	60079.1	Part 1: Equipment protection by flameproof enclosures 'd'
60079-11	Part 11: Equipment protection by intrinsic safety 'i'	60079.11	Part 11: Equipment protection by intrinsic safety 'i'
60112	Method for the determination of the proof and the comparative tracking indices of solid insulating materials	60112	Method for the determination of the proof and the comparative tracking indices of solid insulating materials
60155	Glow-starters for fluorescent lamps	60155	Glow-starters for fluorescent lamps
60238	Edison screw lampholders	60238	Edison screw lampholders
60269	Low-voltage fuses	60269	Low-voltage fuses
60269-3	Part 3: Supplementary requirements for fuses for use by unskilled persons (fuses mainly for household and similar applications)—Examples of standardized systems of fuses A to F	60269.3	Part 3: Supplementary requirements for fuses for use by unskilled persons (fuses mainly for household and similar applications)—Examples of standardized systems of fuses A to F
60529	Degrees of protection provided by enclosures (IP Code)	60529	Degrees of protection provided by enclosures (IP Code)

		AS/NZS	
60598	Luminaires	60598	Luminaires
60598-1	Part 1: General requirements and tests	60598.1	Part 1: General requirements and tests
60598-2	Part 2: Particular requirements	60598.2	Part 2: Particular requirements
60927	Auxiliaries for lamps—Starting devices (other than glow starters)—Performance requirements	60927	Auxiliaries for lamps—Starting devices (other than glow starters)—Performance requirements
60947	Low-voltage switchgear and controlgear	60947	Low-voltage switchgear and controlgear
60947-7-1	Part 7-1: Ancillary equipment—Terminal blocks for copper conductors	60947.7.1	Part 7.1: Ancillary equipment—Terminal blocks for copper conductors
60947-7-2	Part 7-2: Ancillary equipment—Protective conductor terminal blocks for copper conductors	60947.7.2	Part 7.2: Ancillary equipment—Protective conductor terminal blocks for copper conductors
60998	Connecting devices for low-voltage circuits for household and similar purposes	60998	Connecting devices for low-voltage circuits for household and similar purposes
60998-2-4	Part 2-4: Particular requirements for twist-on connecting devices	60998.2.4	Part 2.4: Particular requirements for twist-on connecting devices
60999	Connecting devices—Electrical copper conductors—Safety requirements for screw-type and screwless-type clamping units	60999	Connecting devices—Electrical copper conductors—Safety requirements for screw-type and screwless-type clamping units
60999-1	Part 1: General requirements and particular requirements for clamping units for conductors from 0.2 mm <sup>2</sup> up to 35 mm <sup>2</sup> (included)	60999.1	Part 1: General requirements and particular requirements for clamping units for conductors from 0.2 mm <sup>2</sup> up to 35 mm <sup>2</sup> (included)
61048	Auxiliaries for lamps – Capacitors for use in tubular fluorescent and other discharge lamp circuits – General and safety requirements	61048	Auxiliaries for lamps – Capacitors for use in tubular fluorescent and other discharge lamp circuits – General and safety requirements
61184	Bayonet lampholders	61184	Bayonet lampholders
61347	Lamp controlgear	61347	Lamp controlgear
61347-2-1	Part 2-1: Particular requirements for starting devices (other than glow starters)	61347.2.1	Part 2.1: Particular requirements for starting devices (other than glow starters)

Only international references that have been adopted as Australian or Australian/New Zealand Standards have been listed.

It should be noted that many other parts of IEC 60079 and IEC 61241 are now published as identically-numbered parts of AS/NZS 60079 and AS/NZS 61241 respectively. The latter should be referenced when necessary.

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## FOREWORD

The significant technical changes with respect to the previous edition are as follows:

- addition of equipment protection levels;
- removal of the requirements for energy-limited “nL” and associated energy limited apparatus “[nL]”;
- removal of the requirements for encapsulated Devices “nC”;
- requirements for electrical connections expanded and clarified;
- requirements for luminaire ballasts expanded and clarified;
- requirements for evaluation and testing of motor rotors clarified;
- 15 kV limit for equipment protection by type of protection “n” added;
- spacing requirement for voltages above 10 kV modified;
- requirements for restricted breathing enclosures modified;
- modification to requirements for motor rotors and stators;
- addition of Annex A (informative);
- undated references to IEC 60079-0 included.

## AUSTRALIAN/NEW ZEALAND STANDARD

**Explosive atmospheres****Part 15:****Equipment protection by type of protection 'n'****1 Scope**

This part of IEC 60079 specifies requirements for the construction, testing and marking for Group II electrical equipment with type of protection, "n" intended for use in explosive gas atmospheres. This standard applies to electrical equipment where the rated voltage does not exceed 15 kV r.m.s. a.c. or d.c.

This part of IEC 60079 is applicable to non-sparking electrical equipment and also to electrical equipment with parts or circuits producing arcs or sparks or having hot surfaces which, if not protected in one of the ways specified in this standard, could be capable of igniting a surrounding explosive gas atmosphere. This standard describes several different methods by which this can be achieved which may be combined with other methods described in IEC 60079-0.

This standard supplements and modifies the general requirements of IEC 60079-0, except as indicated in Table 1. Where a requirement of this standard conflicts with a requirement of IEC 60079-0, the requirement of this standard takes precedence.

**Table 1 – Relationship of this part to IEC 60079-0**

Clause of IEC 60079-0			IEC 60079-0 clause application to IEC 60079-15		
Ed. 5.0 (2007) (informative)	Ed. 6.0 <sup>1</sup> (future edition) (informative)	Clause / Subclause title (normative)	Protected sparking nC	Non sparking nA	Restricted breathing nR
4	4	Equipment grouping	Applies	Applies	Applies
4.1	4.1	Group I	Excluded	Excluded	Excluded
4.2	4.2	Group II	Applies	Applies	Applies
4.3	4.3	Group III	Excluded	Excluded	Excluded
4.4	4.4	Equipment for a particular explosive atmosphere	Applies	Applies	Applies
5.1	5.1	Environmental influences	Applies	Applies	Applies
5.1.1	5.1.1	Ambient temperature	Applies	Applies	Applies
5.1.2	5.1.2	External source of heating or cooling	Applies	Applies	Applies
5.2	5.2	Service temperature	Applies	Applies	Applies
5.3.1	5.3.1	Determination of maximum surface temperature	Applies	Applies	Applies
5.3.2.1	5.3.2.1	Group I electrical equipment	Excluded	Excluded	Excluded

<sup>1</sup> Under consideration.