

Australian Standard®

**Electrical equipment for explosive
atmospheres — Explosion-
protection techniques**

**Part 9: Type of protection n—
Non-sparking**

This Australian Standard was prepared by Committee EL/14 - Electrical Equipment in Hazardous Areas. It was approved on behalf of the Council of Standards Australia on 12 April 1991 and published on 10 June 1991.

The following interests are represented on Committee EL/14:

Australian Coal Association
Australian Electrical and Electronic Manufacturers Association
Australian Institute of Petroleum
Confederation of Australian Industry
Department of Industrial Relations and Employment, N.S.W.
Department of Minerals and Energy, N.S.W.
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Non-sparking**

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PREFACE

This Standard was prepared by the Standards Australia Committee on Electrical Equipment in Hazardous Areas to supersede AS 2238—1982, *Electrical equipment for explosive atmospheres - Non-sparking apparatus - Type of protection n*. This Standard is intended for the guidance of manufacturers, users, statutory authorities and associated interests. It is Part 9 of a series of Standards dealing with the explosion-protection of electrical equipment intended for use in potentially explosive atmospheres.

In its terminology, definitions and general treatment of the subject, this Standard is similar to IEC 79-15, *Electrical apparatus for explosive gas atmospheres*, Part 15: *Electrical apparatus with type of protection 'n'*, issued by the International Electrotechnical Commission.

Acknowledgment is made of the assistance received from this source.

Attention is drawn to the issue of impact test for which this Standard and IEC 79-15 specify differing impact energy levels.

The major changes in this edition are as follows:

- (a) New requirements have been introduced for the rating of enclosed-break devices and non-incendive components.
- (b) Reference is made to AS 2380.7 for the assessment of energy-limited equipment and circuits.
- (c) Tests in compliance with AS C100 have been deleted.
- (d) Permitting the application to both Group I and Group II equipment.

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STANDARDS AUSTRALIA

Australian Standard

**Electrical equipment for explosive atmospheres —
Explosion-protection techniques****Part 9: Type of protection n — Non-sparking****SECTION 1 SCOPE AND GENERAL**

1.1 SCOPE This Standard specifies requirements for the design, construction and testing of non-sparking type electrical equipment, intended for use in Class 1 Zone 2 hazardous areas.

This Standard supplements AS 2380.1, except for the requirements of the following clauses which do not apply:

2.1.4	Enclosed equipment
2.2	Enclosures of non-metallic material
2.3.2	Group II equipment
2.9.3	Bonding facilities
2.11.2	Conduit entry
3.3	Enclosures containing fuses
3.4	Plugs and socket-outlets
5.2.2	Drop test
5.6	Thermal shock test

1.2 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS	
1194	Winding wires
1194.1	Part 1: Enamelled round copper winding wires
1468	Ballasts for high pressure mercury vapour and low pressure sodium vapour discharge lamps
1939	Degrees of protection provided by enclosures for electrical equipment (IP Code)
2380	Electrical equipment for explosive atmospheres - Explosion-protection techniques
2380.1	Part 1: General requirements
2380.6	Part 6: Increased safety
2380.7	Part 7: Intrinsic safety i
2420	Fire test methods for solid insulating materials and non-metallic enclosures used in electrical equipment
3000	SAA Wiring Rules
3008	Electrical installations - Selection of cables
3008.1	Part 1: Cables for alternating voltages up to and including 0.6/1 kV
3117	Approval and test specification - Bayonet lampholders
3137	Approval and test specification - Luminaires (Lighting fittings)
3140	Approval and test specification - Edison-type screw lampholders
IEC	
61	Lamp caps and holders together with gauges for the control of interchangeability and safety
79	Electrical apparatus for explosive gas atmospheres
79-3	Part 3: Spark test apparatus for intrinsically-safe circuits
79-15	Part 15: Electrical apparatus with type of protection 'n'
155	Starters for tubular fluorescent lamps
400	Lampholders for tubular fluorescent lamps and starterholders

1.3 DEFINITIONS For the purpose of this Standard, the definitions given in AS 2380.1 and those below apply.

1.3.1 Type of protection 'n' - type of protection applied to electrical equipment such that, in normal operation, it is not capable of igniting a surrounding explosive gas atmosphere and a fault capable of causing ignition is not likely to occur.

1.3.2 Normal operation - electrical equipment with type of protection 'n' is in normal operation when it conforms electrically and mechanically with its design specification and is used within the limits specified by the manufacturer.