

Australian/New Zealand Standard™

Explosive atmospheres

**Part 10.2: Classification of areas—
Combustible dust atmospheres**



AS/NZS 60079.10.2:2011

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee MS-011, Classification of Hazardous Areas. 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 22 August 2011. This Standard was published on 15 September 2011.

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Australian/New Zealand Standard™

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Part 10.2: Classification of areas— Combustible dust atmospheres

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PREFACE

This Standard was prepared by Joint Standards Australia/Standards New Zealand Committee MS-011, Classification of Hazardous Areas.

This Standard forms the first edition of AS/NZS 60079.10.2 and supersedes AS/NZS 61241.10:2005, *Electrical apparatus for use in the presence of combustible dust*, Part 10: *Classification of areas where combustible dusts are or may be present*.

The objective of this Standard is to enable the identification and classification of areas where explosive dust atmospheres and combustible dust layers are present, in order to permit the proper assessment of ignition sources in such areas.

This Standard is identical with, and has been reproduced from IEC 60079-10-2 Ed.1.0 (2009), *Explosive atmospheres—Part 10-2: Classification of areas—Combustible dust atmospheres*.

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/NZS	
60079	Explosive atmospheres	60079	Explosive atmospheres
60079-0	Part 0: General requirements	60079.0	Part 0: General requirements

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.

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

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FOREWORD

This first edition of IEC 60079-10-2 cancels and replaces the first edition of IEC 61241-10 published in 2004. This edition constitutes a technical revision.

The significant technical changes with respect to the first edition of IEC 61241-10 are as follows:

- the hazards presented by dust have been clarified;
- dust groups have been introduced;
- Annex D explaining Equipment Protection Levels (EPLs) has been introduced;
- 1 m of usual extent of zone 22 beyond zone 21 has been expanded to 3 m.

INTRODUCTION

Dusts, as defined in this standard, are hazardous because when they are dispersed in air by any means, they form potentially explosive atmospheres. Furthermore, layers of dust may ignite and act as ignition sources for an explosive atmosphere.

This part of IEC 60079 gives guidance on the identification and classification of areas where such hazards from dust can arise. It sets out the essential criteria against which the ignition hazards can be assessed and gives guidance on the design and control parameters which can be used in order to reduce such a hazard. General and special criteria are given, with examples, for the procedure used to identify and classify areas.

This standard contains an informative Annex A giving practical examples for classifying areas.

AUSTRALIAN/NEW ZEALAND STANDARD

Explosive atmospheres

Part 10.2:

Classification of areas—Combustible dust atmospheres

1 Scope

This part of IEC 60079 is concerned with the identification and classification of areas where explosive dust atmospheres and combustible dust layers are present, in order to permit the proper assessment of ignition sources in such areas.

In this standard, explosive dust atmospheres and combustible dust layers are treated separately. In Clause 4, area classification for explosive dusts clouds is described, with dust layers acting as one of the possible sources of release. In Clause 7, the hazard of dust layer ignition is described.

The examples in this standard are based on a system of effective housekeeping being implemented in the plant to prevent dust layers from accumulating. Where effective housekeeping is not present, the area classification includes the possible formation of explosive dust clouds from dust layers.

The principles of this standard can also be followed when combustible fibres or flyings may cause a hazard.

This standard is intended to be applied where there can be a risk due to the presence of explosive dust atmospheres or combustible dust layers under normal atmospheric conditions.

It does not apply to

- underground mining areas,
- areas where a risk can arise due to the presence of hybrid mixtures,
- dusts of explosives that do not require atmospheric oxygen for combustion, or to pyrophoric substances,
- catastrophic failures which are beyond the concept of abnormality dealt with in this standard (see Note 1),
- any risk arising from an emission of flammable or toxic gas from the dust.

This standard does not take into account the effects of consequential damage following a fire or an explosion.

NOTE 1 Catastrophic failure in this context is applied, for example, to the rupture of a storage silo or a pneumatic conveyor.

NOTE 2 In any process plant, irrespective of size, there can be numerous sources of ignition apart from those associated with equipment. Appropriate precautions will be necessary to ensure safety in this context, but these are outside the scope of this standard.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.