

AMERICAN NATIONAL STANDARD

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**Electrical Apparatus for Use in Zone 20,
Zone 21 and Zone 22 Hazardous
(Classified) Locations – Classification
of Zone 20, Zone 21 and Zone 22
Hazardous (Classified) Locations**

Approved 31 August 2004

ANSI/ISA-12.10.05-2004 (IEC 61241-10 Mod)
Electrical Apparatus for Use in Zone 20, Zone 21 and Zone 22 Hazardous (Classified) Locations—
Classification of Zone 20, Zone 21 and Zone 22 Hazardous (Classified) Locations

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Foreword

All of the text of IEC 61241-10 is included in this document. U.S. National Deviations are shown by ~~strikeout~~ through deleted text and underline under added text. Tables or portions of tables that are deleted are shown as shaded; figures to be deleted are marked with the overlay "Figure X Deleted." All added tables are numbered by a table number corresponding to the applicable subclause for improved clarity and are NOT underlined. Notes appear in the table titles showing the tables as added material. The annexes in this document are informative and are not considered part of this document.

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1 Scope

This document is concerned with the classification of areas where explosive dust/~~air mixtures~~ atmospheres and combustible dust layers are present, in order to permit the proper selection of equipment for use in such areas.

In this document, 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 document assumes effective housekeeping based on a system of cleaning for the plant.

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

This document is intended to be applied where there can be a risk due to the presence of explosive dust/~~air mixtures~~ 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 document (see note 1);
- any risk arising from an emission of flammable or toxic gas from the dust;
- combustible metallic dusts.

This document 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 document.

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

IEC 61241-0, Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements¹

¹ To be published.