

**AMERICAN NATIONAL STANDARD**  
**ANSI/ISA-61241-18 (12.10.07)-2006 (R2011)**

**Electrical Apparatus for Use in Zone 20, Zone 21  
and Zone 22 Hazardous (Classified) Locations –  
Protection by Encapsulation “mD”**

**Approved 29 March 2011**

ANSI/ISA-61241-18 (12.10.07)-2006 (R2011), Electrical Apparatus for Use in Zone 20, Zone 21 and Zone 22 Hazardous (Classified) Locations - Protection by Encapsulation "mD"

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## Foreword

The entire text of IEC 61241-18:2004 is included in this document. U.S. National Deviations are shown by ~~strikeout~~ through deleted text and underlining of added text. There are four annexes in this standard. Annexes B and C are normative and form part of the requirements of this standard. Annexes A and D are informative and are not considered part of this standard.

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## 1 Scope

This standard is to be read in conjunction with ~~IEC~~ANSI/ISA-61241-0, the requirements of which apply to electrical apparatus protected by encapsulation and surface temperature limitation unless specifically excluded.

This ~~part of IEC 61241~~standard is applicable to electrical apparatus protected by encapsulation type of protection "mD" and surface temperature limitation for use in areas where combustible dust may be present in quantities which could lead to a fire or explosion hazard. It specifies requirements for design, construction and testing of electrical apparatus, parts of electrical apparatus and Ex components where the rated voltage does not exceed 10 kV.

NOTE 1 The actual working voltage may exceed the value given above by up to 10 %.

NOTE 2 ~~IEC 61241-14 ("Electrical apparatus for use in the presence of combustible dust — Part 14: Selection and installation") gives guidance on the selection and installation of the apparatus.~~ Apparatus within the scope of this standard may also be subjected to additional requirements in other standards – for example, ~~IEC~~ ANSI/ISA-60079-0 ("Electrical apparatus for explosive gas atmospheres - Part 0: General requirements").

The application of electrical apparatus in atmospheres which may contain explosive gas as well as combustible dust, whether simultaneously or separately, requires additional protective measures.

This standard does not apply to dusts of explosives which do not require atmospheric oxygen for combustion, or to pyrophoric substances.

This standard is not applicable to electrical apparatus intended for use in underground parts of mines as well as those parts of surface installations of such mines endangered by firedamp and/or combustible dust. This standard does not take account of any risk due to an emission of flammable or toxic gas from the dust.

This standard does not include other types of protection and is only applicable to protection by encapsulation.

## 2 Normative rReferences

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 60079-7:2001, *Electrical apparatus for explosive gas atmospheres — Part 7: Increased safety "e"*~~

ANSI/ISA-60079-7 (12.16.01)-2002, *Electrical Apparatus for Use in Class I, Zone 1 Hazardous (Classified) Locations: Type of Protection – Increased Safety "e"*

~~IEC 60079-11:1999, *Electrical apparatus for explosive gas atmospheres — Part 11: Intrinsic safety "i"*~~

ANSI/ISA-60079-11 (12.02.01)-2002, *Electrical Apparatus for Use in Class I, Zone 1 Hazardous (Classified) Locations: Type of Protection – Intrinsic Safety "i"*