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**Električne naprave za uporabo v prisotnosti gorljivega prahu - 18. del: Zaščita zalivanje z zalivno maso "mD" (IEC 61241-18:2004)**

Electrical apparatus for use in the presence of combustible dust – Part 18:  
Protection by encapsulation "mD"

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EUROPEAN STANDARD

**EN 61241-18**

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2004

ICS 29.260.20

English version

**Electrical apparatus for use in the presence of combustible dust**  
**Part 18: Protection by encapsulation "mD"**  
(IEC 61241-18:2004)

Matériels électriques pour utilisation en  
présence de poussières combustibles  
Partie 18: Protection par encapsulage  
"mD"  
(CEI 61241-18:2004)

Elektrische Betriebsmittel zur Verwendung  
in Bereichen mit brennbarem Staub  
Teil 1: Schutz durch Vergusskapselung  
"mD"  
(IEC 61241-18:2004)

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This European Standard was approved by CENELEC on 2004-10-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

**CENELEC**

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Central Secretariat: rue de Stassart 35, B - 1050 Brussels**

## Foreword

The text of document 31H/176/FDIS, future edition 1 of IEC 61241-18, prepared by SC 31H, Apparatus for use in the presence of combustible dust, of IEC TC 31, Electrical apparatus for explosive atmospheres, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61241-18 on 2004-10-01.

This standard is to be used in conjunction with EN 61241-0 \*).

The following dates were fixed:

- latest date by which the EN has to be implemented  
at national level by publication of an identical  
national standard or by endorsement (dop) 2005-07-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2007-10-01

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC Directive(s). See Annex ZZ.

Annexes ZA and ZZ have been added by CENELEC.

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### Endorsement notice

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The text of the International Standard IEC 61241-18:2004 was approved by CENELEC as a European Standard without any modification.

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\*) In preparation.

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

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.

NOTE Where an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60079-7	2001	Electrical apparatus for explosive gas atmospheres Part 7: Increased safety "e"	EN 60079-7	2003
IEC 60079-11	1999	Part 11: Intrinsic safety "i"	-	-
IEC 60086-1	- <sup>1)</sup>	Primary batteries Part 1: General	EN 60086-1	2001 <sup>2)</sup>
IEC 60127	Series	Miniature fuses	EN 60127	Series
IEC 60243-1	- <sup>1)</sup>	Electrical strength of insulating materials - Test methods Part 1: Tests at power frequencies	EN 60243-1	1998 <sup>2)</sup>
IEC 60285	1993	Alkaline secondary cells and batteries - Sealed nickel-cadmium cylindrical rechargeable single cells	EN 60285 <sup>3)</sup>	1994
IEC 60622	- <sup>1)</sup>	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Sealed nickel-cadmium prismatic rechargeable single cells	EN 60622	2003 <sup>2)</sup>
IEC 60664-1	1992	Insulation coordination for equipment within low-voltage systems Part 1: Principles, requirements and tests		
+ A1	2000			
+ A2	2002		EN 60664-1	2003
IEC 60691	- <sup>1)</sup>	Thermal-links - Requirements and application guide	EN 60691	2003 <sup>2)</sup>
IEC 61150	- <sup>1)</sup>	Alkaline secondary cells and batteries - Sealed nickel-cadmium rechargeable monobloc batteries in button cell design	EN 61150	1993 <sup>2)</sup>

1) Undated reference.

2) Valid edition at date of issue.

3) EN 60285 is superseded by EN 61951-1:2003 which is based on IEC 61951-1:2003.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61241-0	- <sup>1)</sup>	Electrical apparatus for use in the presence of combustible dust Part 0: General requirements	-	-
IEC 61241-1	- <sup>1)</sup>	Electrical apparatus for use in the presence of combustible dust Part 1: Protection by enclosures "tD"	EN 61241-1	2004 <sup>2)</sup>
IEC 61241-11	- <sup>4)</sup>	Part 11: Intrinsically safe apparatus 'iD'	-	-
IEC 61436	1998	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Sealed nickel-metal hydride rechargeable single cells	EN 61436 <sup>5)</sup>	1998
IEC 61558-2-6	- <sup>1)</sup>	Safety of power transformers, power supply units and similar Part 2-6: Particular requirements for safety isolating transformers for general use	EN 61558-2-6	1997 <sup>2)</sup>
IEC 61960-1	- <sup>1)</sup>	Secondary lithium cells and batteries for portable applications Part 1: Secondary lithium cells	EN 61960-1	2001 <sup>2)</sup>
IEC 62326-4-1	- <sup>1)</sup>	Printed boards Part 4: Rigid multilayer printed boards with interlayer connections - Sectional specification -- Section 1: Capability Detail Specification -- Performance levels A, B and C	EN 62326-4-1	1997 <sup>2)</sup>
ISO 62	1999	Plastics - Determination of water absorption	EN ISO 62	1999
ANSI/UL 248-1	1995	Standard for low-voltage fuses Part 1: General requirements	-	-
ANSI/UL 746B	2000	Polymeric Materials - Long-Term Property Evaluations	-	-

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4) To be published.

5) EN 61436 is superseded to EN 61951-2:2000, which is based on IEC 61951-2:2003.

**Annex ZZ**  
(informative)

**Coverage of Essential Requirements of EC Directives**

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and within its scope the standard covers all relevant essential requirements as given in Annex II of the EC Directive 94/9/EC.

Compliance with this standard provides one means of conformity with the specified essential requirements of the Directive[s] concerned.

WARNING: Other requirements and other EC Directives may be applicable to the products falling within the scope of this standard.

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INTERNATIONALE  
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CEI  
IEC

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Première édition  
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2004-08

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**Matériels électriques pour utilisation  
en présence de poussières combustibles –**

**Partie 18:  
Protection par encapsulage «mD»**

**iTeh STANDARD PREVIEW**

**Electrical apparatus for use in the  
presence of combustible dust –**

SIST EN 61241-18:2005

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**Part 18:  
Protection by encapsulation "mD"**



Numéro de référence  
Reference number  
CEI/IEC 61241-18:2004

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRICAL APPARATUS FOR USE IN THE  
PRESENCE OF COMBUSTIBLE DUST –****Part 18: Protection by encapsulation “mD”**

## FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 61241-18 has been prepared by subcommittee 31H: Apparatus for use in the presence of combustible dust, of IEC technical committee 31: Electrical apparatus for explosive atmospheres.

The text of this standard is based on the following documents:

FDIS	Report on voting
31H/176/FDIS	31H/180/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

This standard is to be read in conjunction with IEC 61241-0.

IEC 61241 consists of the following parts under the general title: *Electrical apparatus for use in the presence of combustible dust*:

- Part 0: General requirements
- Part 1: Protection by enclosures 'tD'
- Part 2: Type of protection 'pD'
- Part 10: Classification of areas where combustible dusts are or may be present
- Part 11: Protection by intrinsic safety 'iD' <sup>1</sup>
- Part 14: Selection and installation
- Part 17: Inspection and maintenance of electrical installations in hazardous areas (other than mines) <sup>1</sup>
- Part 18: Protection by encapsulation 'mD'
- Part 20<sup>1</sup>: Test methods
- Part 20-1: Methods for determining the minimum ignition temperatures of dust
- Part 20-2: Method for determining the electrical resistivity of dust in layers
- Part 20-3: Method for determining minimum ignition energy of dust/air mixtures

NOTE All references in this standard to the IEC 61241 series follows the proposed re-numbering of the dust standards agreed by SC31H and TC31. It may be necessary to alter these numbers if the relevant standards are not yet published.

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The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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- reconfirmed; <https://standards.iteh.ai/catalog/standards/sist/3d4e4b5d-e123-4db5-b2cf-474b14dd2eef/sist-en-61241-18-2005>
- withdrawn;
- replaced by a revised edition, or
- amended.

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<sup>1</sup> To be published.