

Electrical apparatus for use in the presence of combustible dust —

Part 17: Inspection and maintenance of electrical installations in hazardous areas (other than mines)

The European Standard EN 61241-17:2005 has the status of a
British Standard

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National foreword

This British Standard is the official English language version of EN 61241-17:2005. It is identical with IEC 61241-17:2005. Together with BS EN 61241-14:2004, it partially supersedes BS EN 50281-1-2:1999, which will be withdrawn on 1 September 2007. Together with BS EN 61241-0, BS EN 61241-1:2004 and BS EN 61241-14:2004, it partially supersedes BS 6467-1:1985 and BS 6467-2:1988, which are being kept current until BS EN 61241-0 is published.

The UK participation in its preparation was entrusted by Technical Committee GEL/31, Electrical apparatus for explosive atmospheres, to Subcommittee GEL/31/20, Electrical apparatus for use in the presence of combustible dusts, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

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en présence de poussières combustibles
Partie 17: Inspection et maintenance
des installations électriques situées
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explosionsgefährdeten Bereichen
(ausgenommen Grubenbaue)
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CENELEC

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

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Foreword

The text of document 31H/191/FDIS, future edition 1 of IEC 61241-17, 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 61241-17 on 2005-04-01.

This European Standard, together with EN 61241-1-14:2004, supersedes EN 50281-1-2:1998 + corrigendum December 1999 + A1:2002.

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) | 2006-01-01 |
| – latest date by which the national standards conflicting with the EN have to be withdrawn | (dow) | 2008-04-01 |

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61241-17:2005 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60079-0	NOTE	Harmonized as EN 60079-0:2004 (not modified).
IEC 60079-17	NOTE	Harmonized as EN 60079-17:2003 (not modified).
IEC 60204-1	NOTE	Harmonized as EN 60204-1:1997 (not modified).
IEC 61241-1	NOTE	Harmonized as EN 61241-1:2004 (not modified).
IEC 61241-18	NOTE	Harmonized as EN 61241-18:2004 (not modified).

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INTRODUCTION

Electrical installations in hazardous areas possess features specially designed to render them suitable for operations in such atmospheres. It is essential for reasons of safety in those areas that, throughout the life of such installations, the integrity of those special features is preserved; they therefore require initial inspection and either

- a) regular periodic inspections thereafter, or
- b) continuous supervision by skilled personnel

in accordance with this standard and, when necessary, maintenance.

NOTE Correct functional operation of hazardous area installations does not mean, and should not be interpreted as meaning, that the integrity of the special features referred to above is preserved.

ELECTRICAL APPARATUS FOR USE IN THE PRESENCE OF COMBUSTIBLE DUST –

Part 17: Inspection and maintenance of electrical installations in hazardous areas (other than mines)

1 Scope

This part of IEC 61241 is intended to be applied by users and covers factors directly related to the inspection and maintenance of electrical installations within hazardous areas only. It does not include conventional requirements for electrical installations, nor the testing and certification of electrical apparatus. This standard supplements the requirements laid down in IEC 60364-6-61.

NOTE The text is based on IEC 60079-17.

This standard assumes effective housekeeping based on a system of cleaning for the plant.

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/air mixtures 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.

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 60079-14:2002, *Electrical apparatus for explosive gas atmospheres – Part 14: Electrical installations in hazardous areas (other than mines)*

IEC 60364-6-61: *Electrical installations of buildings – Part 6-61: Verification – Initial verification*

IEC 61241-4, *Electrical apparatus for use in the presence of combustible dust – Part 4: Type of protection “pD”*

IEC 61241-10, *Electrical apparatus for use in the presence of combustible dust – Part 10: Classification of areas where combustible dusts are or may be present*

IEC 61241-11, *Electrical apparatus for use in the presence of combustible dust – Part 11: Protection by intrinsic safety “iD”*¹

IEC 61241-14:2004, *Electrical apparatus for use in the presence of combustible dust – Part 14: Selection and installation*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

explosive atmosphere

mixture with air, under atmospheric conditions, of flammable substances in the form of gas, vapour, mist or dust, in which after ignition, combustion spreads throughout the unconsumed mixture

3.2

explosive dust atmosphere

mixture with air, under atmospheric conditions, of flammable substances in the form of dust, fibres or flyings in which, after ignition, combustion spreads throughout the unconsumed mixture

3.3

hazardous area

area in which an explosive atmosphere is present, or may be expected to be present, in quantities such as to require special precautions for the construction, installation and use of apparatus

NOTE For the purposes of this standard, an area is a three-dimensional region or space.

3.4

non-hazardous area

area in which an explosive atmosphere is not expected to be present in quantities such as to require special precautions for the construction, installation and use of apparatus

3.5

maintenance

combination of any actions carried out to retain an item in, or restore it to, conditions in which it is able to meet the requirements of the relevant specification and perform its required functions

3.6

inspection

action comprising careful scrutiny of an item carried out either without dismantling, or with the addition of partial dismantling as required, supplemented by means such as measurement, in order to arrive at a reliable conclusion as to the condition of an item

3.6.1

visual inspection

inspection which identifies, without the use of access equipment or tools, those defects, such as missing bolts, which will be apparent to the eye

¹ To be published.

3.6.2

close inspection

inspection which encompasses those aspects covered by a visual inspection and, in addition, identifies those defects, such as loose bolts, which will be apparent only by the use of access equipment, for example steps, (where necessary), and tools

NOTE Close inspections do not normally require the enclosure to be opened, or the equipment to be de-energized.

3.6.3

detailed inspection

inspection which encompasses those aspects covered by a close inspection and, in addition, identifies those defects, such as loose terminations, which will only be apparent by opening the enclosure, and/or using, where necessary, tools and test equipment

3.6.4

initial inspection

inspection of all electrical apparatus, systems and installations before they are brought into service

3.6.5

periodic inspection

inspection of all electrical apparatus, systems and installations carried out on a routine basis

3.6.6

sample inspection

inspection of a proportion of the electrical apparatus, systems and installations

3.7

continuous supervision

frequent attendance, inspection, service, care and maintenance of the electrical installation by skilled personnel who have experience in the specific installation and its environment in order to maintain the explosion protection features of the installation in satisfactory condition

3.8

skilled personnel

people who meet the requirements for the qualification of personnel in accordance with 4.2

3.9

technical person with executive function

person providing technical management of the skilled personnel, having adequate knowledge in the field of explosion protection, having familiarity with the local conditions, having familiarity with the installation and who has overall responsibility and control of the inspection systems for the electrical equipment within hazardous areas

3.10

associated apparatus

electrical apparatus in which the circuits, or parts of circuits, are not all necessarily intrinsically safe but which contains circuits that can affect the safety of the intrinsically safe circuits associated with it

NOTE The associated apparatus is normally the interface between an intrinsically safe circuit and a non-intrinsically safe circuit and is frequently located in the non-hazardous area. The associated apparatus may be, for example, shunt diode safety barriers or galvanic isolators.