SVENSK STANDARD SS-EN 61241-11

Fastställd	Utgåva	Sida	Ingår i
2007-01-15	1	1 (1+16)	SEK Område 31

Svenska Elektriska Kommissionen, SEK

Elektrisk utrustning för användning vid förekomst av brännbart damm – Del 11: Utförande med egensäkerhet ”iD”

Electrical apparatus for use in the presence of combustible dust – Part 11: Protection by intrinsic safety "iD"

Som svensk standard gäller europastandarden EN 61241-11:2006. Den svenska standarden innehåller den officiella engelska språkversionen av EN 61241-11:2006.

Nationellt förord

Europastandarden EN 61241-11:2006

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC

– **IEC 61241-11[*)], First edition, 2005 - Electrical apparatus for use in the presence of combustible dust - Part 11: Protection by intrinsic safety "iD"**

utarbetad inom International Electrotechnical Commission, IEC.

Standarden skall användas tillsammans med SS-EN 61241-0.

[*)] Se även bifogat Corrigendum, February 2006.

ICS 29.260.20

Denna standard är fastställd av Svenska Elektriska Kommissionen, SEK, som också kan lämna upplysningar om **sakinnehållet** i standarden.
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Telefon: 08 - 444 14 00. *Telefax*: 08 - 444 14 30
E-post: sek@sekom.se. *Internet*: www.sekom.se

Standarder underlättar utvecklingen och höjer elsäkerheten

Det finns många fördelar med att ha gemensamma tekniska regler för bl a säkerhet, prestanda, dokumentation, utförande och skötsel av elprodukter, elanläggningar och metoder. Genom att utforma sådana standarder blir säkerhetskraven tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

Många standarder inom elområdet beskriver tekniska lösningar och metoder som åstadkommer den elsäkerhet som föreskrivs av svenska myndigheter och av EU.

SEK är Sveriges röst i standardiseringsarbetet inom elområdet

Svenska Elektriska Kommissionen, SEK, svarar för standardiseringen inom elområdet i Sverige och samordnar svensk medverkan i internationell och europeisk standardisering. SEK är en ideell organisation med frivilligt deltagande från svenska myndigheter, företag och organisationer som vill medverka till och påverka utformningen av tekniska regler inom elektrotekniken.

SEK samordnar svenska intressenters medverkan i SEKs tekniska kommittéer och stödjer svenska experters medverkan i internationella och europeiska projekt.

Stora delar av arbetet sker internationellt

Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

Standardiseringsarbetet inom SEK är organiserat i referensgrupper bestående av ett antal tekniska kommittéer som speglar hur arbetet inom IEC och CENELEC är organiserat.

Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

Var med och påverka!

Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61241-11

December 2006

ICS 29.260.20

English version

Electrical apparatus for use in the presence of combustible dust
Part 11: Protection by intrinsic safety "iD"
(IEC 61241-11:2005 + corrigendum February 2006)

Matériels électriques pour utilisation en présence de poussières combustibles
Partie 11: Protection par sécurité intrinsèque "iD"
(CEI 61241-11:2005
+ corrigendum février 2006)

Elektrische Betriebsmittel zur Verwendung in Bereichen mit brennbarem Staub
Teil 11: Schutz durch Eigensicherheit "iD"
(IEC 61241-11:2005
+ Corrigendum Februar 2006)

This European Standard was approved by CENELEC on 2005-11-01. 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, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the 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

Ref. No. EN 61241-11:2006 E

Foreword

The text of document 31H/194/FDIS, future edition 1 of IEC 61241-11, 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 61241-11 on 2005-11-01.

This European Standard is to be read 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)	2007-07-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2008-11-01

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 94/9/EC. See Annex ZZ.

Annexes ZA and ZZ have been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61241-11:2005 and its corrigendum February 2006 was approved by CENELEC as a European Standard without any modification.

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

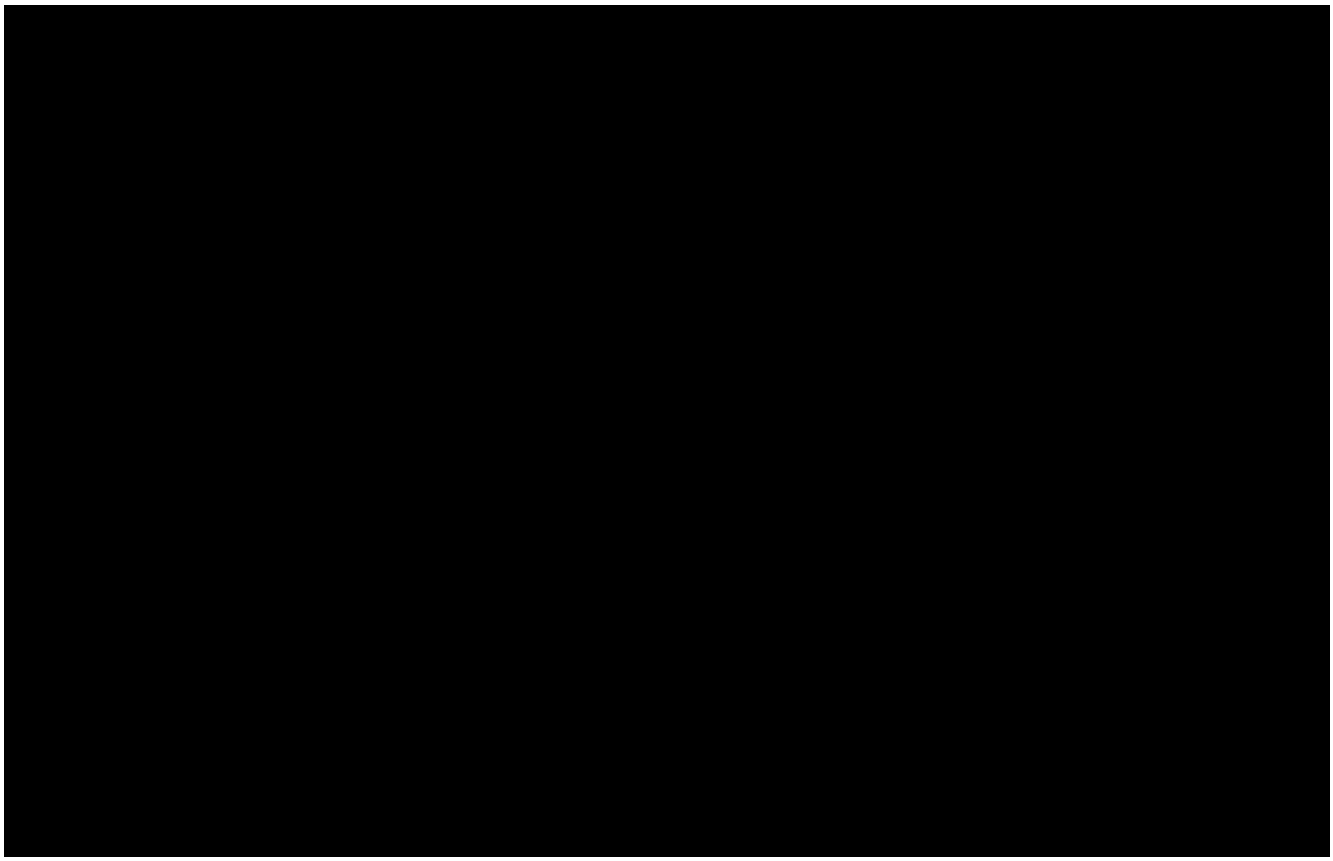
Publication	Year	Title	EN/HD	Year
IEC 60079-0 (mod)	- [1)]	Electrical apparatus for explosive gas atmospheres Part 0: General requirements	EN 60079-0	2006 [2)]
IEC 60079-11	- [1)]	Explosive atmospheres Part 11: Equipment protection by intrinsic safety "i"	EN 60079-11	200X [3)]
IEC 60079-25	- [1)]	Electrical apparatus for explosive gas atmospheres Part 25: Intrinsically safe systems	EN 60079-25 + corr. April	2004 [2)] 2006
IEC 60529	- [1)]	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May	1991 [2)] 1993
IEC 61241-0 (mod)	- [1)]	Electrical apparatus for use in the presence of combustible dust Part 0: General requirements	EN 61241-0	2006 [2)]
IEC 61241-1	- [1)]	Electrical apparatus for use in the presence of combustible dust Part 1: Protection by enclosures "tD"	EN 61241-1 + corr. December	2004 [2)] 2006

[1)] Undated reference.

[2)] Valid edition at date of issue.

[3)] To be published.

Annex ZZ



CONTENTS

ELECTRICAL APPARATUS FOR USE IN THE PRESENCE OF COMBUSTIBLE DUST –

Part 11: Protection by intrinsic safety 'iD'

1 Scope

This part of IEC 61241 specifies requirements for the construction and testing of intrinsically safe apparatus intended for use in potentially explosive dust cloud or dust layer environments and for associated apparatus that is intended for connection to intrinsically safe circuits which enter such environments.

This standard supplements the general requirements of IEC 61241-0: except as indicated in the following list.

Apparatus utilized in systems will meet the requirements of IEC 60079-25.

If associated apparatus is protected by a type of protection listed in IEC 61241-0 or IEC 60079-0 then the requirements of that method of protection together with the relevant parts of IEC 61241 or IEC 60079 also apply to the associated apparatus. The list of exclusions which follows is directly applicable to associated apparatus intended for use in situations where there is no potentially hazardous atmosphere and in other circumstances should be used in combination with the requirements of the other methods of protection.

Clause or subclause of IEC 61241-0		Clause excluded for Intrinsically safe apparatus
4.1	General	No
4.2	Opening enclosures	Yes
4.3	Environmental conditions	No
5.1	Maximum surface temperature	No
5.2	Maximum surface temperature with respect to dust layers above 50 mm	No
6.1.1	Material specification	No
6.1.2	Plastic materials	No
6.1.3	Verification of compliance	No
6.1.4	Thermal endurance	No
6.1.5	Electrostatic charges	No
6.2.1	Alloys	No
6.2.2	Threaded holes	Yes
7	Fasteners	Yes
8	Interlocking devices	Yes
9	Bushings	Yes
10	Materials used for cementing	No
12	Connection facilities and terminal compartments	Yes
13	Connection facilities for earthing or bonding conductors	Yes
14	Cable and conduit entries	No
15 to 20	Supplementary requirements for certain electrical apparatus	No

Clause or subclause of IEC 61241-0		Clause excluded for Intrinsically safe apparatus
21.4.2.1	Test for resistance to impact for zone 20 or 21 enclosures	No
21.4.2.2	Drop test for zone 20 or 21 apparatus	No
21.4.2.3	Required results [a]	Yes
21.4.3	Test for dust exclusion (degree of protection)	No
21.4.4	Torque test for bushings in enclosures for use in zone 20 or 21	Yes
21.4.5	Thermal tests	No
21.4.6	Thermal shock test	No
21.4.7.1 to 21.4.7.5	Tests of non-metallic enclosures or of non-metallic parts of enclosures for use in zone 20 or 21	Yes
21.4.7.6	Insulation resistance test	No
25 to 26	Clamping tests of cables	Yes
[a] IEC 61241-0 pass criteria apply.		

This part of IEC 61241 is applicable to electrical apparatus in which the electrical circuits themselves are incapable of causing an explosion in the surrounding combustible dust environment. In other circumstances, associated apparatus should be used in combination with the requirements of the other methods of protection listed in IEC 61241-0.

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 60079-0, *Electrical apparatus for potentially explosive atmospheres – Part 0: General requirements*

IEC 60079-11, *Electrical apparatus for explosive gas atmospheres – Part 11: Intrinsic safety "I"*

IEC 60079-25, *Electrical apparatus for explosive gas atmospheres – Part 25: Intrinsically safe systems*

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

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

IEC 61241-1, *Electrical apparatus for use in the presence of combustible dust – Part 1: Protection by enclosures "tD"*

[redacted]