SVENSK STANDARD SS-EN 50223

Fastställd	Utgåva	Sida	Ansvarig kommitté
2015-08-19	3	1 (1+54)	SEK TK 31

Stationär utrustning för elektrostatisk applicering av brännbart flock – Säkerhetsfordringar

Stationary electrostatic application for ignitable flock material – Safety requirements

Som svensk standard gäller europastandarden EN 50223:2015. Den svenska standarden innehåller den officiella engelska språkversionen av EN 50223:2015.

Nationellt förord

Tidigare fastställd svensk standard SS-EN 50223, utgåva 2, 2010, gäller ej fr o m 2018-04-13.

ICS 29.260.20; 87.100.00

Denna standard är fastställd av SEK Svensk Elstandard,
som också kan lämna upplysningar om **sakinnehållet** i standarden.
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Standarder underlättar utvecklingen och höjer elsäkerheten

Det finns många fördelar med att ha gemensamma tekniska regler för bl a mätning, säkerhet och provning och för utförande, skötsel och dokumentation av elprodukter och elanläggningar.

Genom att utforma sådana standarder blir säkerhetsfordringar 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

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Stora delar av arbetet sker internationellt

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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 50223

May 2015

ICS 29.260.20; 87.100

Supersedes EN 50223:2010

English Version

Stationary electrostatic application equipment for ignitable flock material - Safety requirements

Matériel fixe de projection électrostatique de flock inflammable - Exigences de sécurité

Stationäre elektrostatische Flockanlagen für entzündbaren Flock - Sicherheitsanforderungen

This European Standard was approved by CENELEC on 2015-04-13. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN 50223:2015 E

SEK Svensk Elstandard

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Foreword

This document (EN 50223:2015) has been prepared by CLC/SC 31-8 "Electrostatic painting and finishing equipment" from CLC/TC 31 "Electrical apparatus for potentially explosive atmospheres".

This document supersedes EN 50223:2010.

The following dates are proposed:

• latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2016-04-13
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2018-04-13

The State of the Art is included in Annex ZY "Significant changes between this European Standard and EN 50223:2010".

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directives 94/9/EC and 2006/42/EC, see informative Annexes ZZA and ZZB, which are an integral part of this document.

Introduction

In the process of electrostatic flock application, the flock is transported from a reservoir through an electrical field either by gravitational forces or an air stream or electrostatic forces. As the flock particles disperse due to the flock application device and/or the electric field, they are electrostatically charged by means of high voltage of some tens of kilovolts aligned and, in the form of a cloud, encased by and deposited on the grounded workpiece. They stick to those workpieces, which are covered with an adhesive layer. The adhesive is set at room temperature or by heating.

Flock particles not deposited on the workpiece (overspray) are upcast or removed by the exhaust ventilation system, by brushes or other devices into the flock recovery system.

1 Scope

1.1 This European Standard specifies requirements for stationary electrostatic flock application equipment which is designed for applying ignitable flock which may form explosive atmospheres in the flock application area. For stationary electrostatic application devices for ignitable flock of type B-F, EN 50050-3 is applicable in addition to this standard.

This European Standard also specifies the constructional requirements for a safe operation of the stationary equipment of flock application booths, including the electrical installations and the accessories.

This European Standard deals with all significant hazards, hazardous situations and events relevant to flock application booths, when they are used as intended and under conditions which are foreseeable as malfunction by the manufacturer (see Clause 4).

1.2 This European Standard considers three types of electrostatic flock systems. For more details, see Table 1.

1.3 This European Standard deals with those hazards occurring during stationary automatic electrostatic flocking. Among these hazards are, above all, ignition hazards of the generated explosive atmosphere and hazard to persons.

1.4 The stationary equipment dealt with in this European Standard is considered to be equipment of group II, category 3D for the use in areas with potential explosion hazards of zone 22.

1.5 This European Standard is not applicable for

— flock systems in which mixtures of solvent vapours in air occur with a concentration of > 20 % of the LEL,

— flock systems operated with AC high voltage,

— hand-held spraying equipment for ignitable flock (see EN 50050-3),

— the application system for liquid or pasty substances (e.g. adhesives, primer),

— the cleaning of flock application booths,

— the storage and handling of ignitable substances outside the coating plant.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 953, *Safety of machinery - Guards - General requirements for the design and construction of fixed and movable guards*

EN 981, *Safety of machinery - System of auditory and visual danger and information signals*

EN 1037, *Safety of machinery - Prevention of unexpected start-up*

EN 1081, *Resilient floor coverings - Determination of the electrical resistance*

EN 1149-5, *Protective clothing - Electrostatic properties - Part 5: Material performance and design requirements*

EN 13463-1:2009, *Non-electrical equipment for use in potentially explosive atmospheres - Part 1: Basic method and requirements*

EN 13478, *Safety of machinery - Fire prevention and protection*

EN 13501-1, *Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests*

EN 14373, *Explosion suppression systems*

EN 14460, *Explosion resistant equipment*

EN 14462, *Surface treatment equipment - Noise test code for surface treatment equipment including its ancillary handling equipment - Accuracy grades 2 and 3*

EN 14491, *Dust explosion venting protective systems*

EN 14797, *Explosion venting devices*

EN 14986, *Design of fans working in potentially explosive atmospheres*

EN 15089, *Explosion isolation systems*

EN 50050-3, *Electrostatic hand-held spraying equipment - Safety requirements - Part 3: Hand-held spraying equipment for ignitable flock*

EN 60079-0, *Explosive atmospheres - Part 0: Equipment - General requirements (IEC 60079-0)*

EN 60204-1, *Safety of machinery - Electrical equipment of machines - Part 1: General requirements (IEC 60204-1)*

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

EN 61340-4-1, *Electrostatics - Part 4-1: Standard test methods for specific applications - Electrical resistance of floor coverings and installed floors (IEC 61340-4-1)*

EN 61508-3, *Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 3: Software requirements (IEC 61508-3)*

EN 62061:2005, *Safety of machinery - Functional safety of safety-related electrical, electronic and programmable electronic control systems (IEC 62061:2005)*

EN ISO 12100:2010, *Safety of machinery - General principles for design - Risk assessment and risk reduction (ISO 12100:2010)*

EN ISO 13856 (all parts), *Safety of machinery - Pressure-sensitive protective devices (ISO 13856)*

EN ISO 13857, *Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857)*

EN ISO 13849-1, *Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design (ISO 13849-1)*

EN ISO 14122-2, *Safety of machinery - Permanent means of access to machinery - Part 2: Working platforms and walkways (ISO 14122-2)*