

Electrical apparatus for potentially explosive atmospheres - Electrostatic hand-held spraying equipment

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 50050:2006 sisaldab Euroopa standardi EN 50050:2006 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 14.12.2006 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 50050:2006 consists of the English text of the European standard EN 50050:2006.</p> <p>This document is endorsed on 14.12.2006 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>This European Standard specifies the constructional and test requirements for hand-held and handoperated electrostatic spraying equipment and associated apparatus which can be used to spray flammable liquid coating materials, flammable coating powders or flammable flock creating explosive atmosphere in spraying areas which may or may not contain flammable adhesives.</p>	<p>Scope:</p> <p>This European Standard specifies the constructional and test requirements for hand-held and handoperated electrostatic spraying equipment and associated apparatus which can be used to spray flammable liquid coating materials, flammable coating powders or flammable flock creating explosive atmosphere in spraying areas which may or may not contain flammable adhesives.</p>
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ICS 87.100

Võtmesõnad: buildings, electrically-operated, electrically-operated, instructions, safety measures, specification (approval), specifications, spray guns, sprayers, spraying, spraying equipment, testing, testing conditions, tests, type testing, user information

English version

**Electrical apparatus for potentially explosive atmospheres -
Electrostatic hand-held spraying equipment**

Appareillage électrique pour atmosphères
explosibles -
Équipement manuel de projection
électrostatique

Elektrische Betriebsmittel für
explosionsgefährdete Bereiche -
Elektrostatische Handsprüheinrichtungen

This European Standard was approved by CENELEC on 2001-05-01. 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

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Foreword

This European Standard was prepared by SC 31-8, Electrostatic painting and finishing equipment, of Technical Committee CENELEC TC 31, Electrical apparatus for explosive atmospheres.

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 50050 on 2001-05-01.

This European Standard supersedes EN 50050:1986.

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) 2002-04-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2004-04-01

This European Standard specifies the constructional and test requirements for hand-held and hand-operated electrostatic spray guns and associated apparatus which are used to spray flammable coating materials which may form explosive atmospheres. These spraying devices are considered to be devices of group II, category 2 in accordance with Directive 94/9/EC. It is taken for granted that the devices will be used in mechanically ventilated spraying areas or under equivalent ventilation conditions.

Annexes designated "informative" are given for information only.
In this standard, annex A is informative.

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Introduction

When materials are sprayed with hand-held electrostatic spraying equipment, the material is converted into a cloud of droplets or particles directed to a surface to produce there a uniform layer of the required thickness and quality. The particles are charged by high voltage of tens of kilovolts or triboelectrically so that they are attracted by the earthed workpiece and deposited on it.

1 Scope

1.1 This European Standard specifies the constructional and test requirements for hand-held and hand-operated electrostatic spraying apparatus and associated apparatus which can be used to spray flammable liquid coating materials, flammable coating powders or flammable flock in spraying areas which may or may not contain flammable adhesives. These spraying devices are considered to be apparatus of group II category 2 in accordance with Directive 94/9/EC for use in potentially explosive atmospheres formed by their spray cloud.

This standard only deals with the hazards involved in the coating process when hand-held electrostatic spraying apparatus is used as prescribed and in accordance with the conditions which are to be expected according to the manufacturer. As to other hazards involved in the use of hand-held spraying apparatus, the safety requirements of EN 1953:1998 "Atomising and spraying equipment for coating materials - Safety requirements" shall be met.

1.2 This Standard is not applicable to automatic electrostatic spraying equipment for flammable coating materials (see EN 50176, EN 50177 and EN 50223).

1.3 The "General requirements" of the European Standard EN 50014 to be applied to hand-held electrostatic spray guns and to associated apparatus are given in the Table below:

Clause of EN 50014	Spray guns	Associated apparatus outside the hazardous area
3 Definitions	except 3.3	except 3.3
5 Temperatures	except 5.2	No
6 General	only 6.1.2	only 6.12
7 Non-metallic enclosures and non-metallic parts of enclosures	only 7.4	No
8 Light-alloy enclosures	only 8.1	No
9 Fasteners	only 9.1	only 9.1
14 Connection facilities for earthing and bonding conductors	yes	Yes
15 Connection facilities and terminal compartments	yes	No
16 Cable and conduit entries	only 16.3	No
24 Routine tests	yes	Yes
25 Manufacturer responsibility	Yes	Yes
26 Tests of modified or repaired electrical apparatus	yes	Yes
Annex A	yes	No

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 292-1	1991	Safety of machinery – Basic concepts, general principles for design – Part 1: Basic terminology, methodology
EN 292-2 + A1	1991 1995	Safety of machinery – Basic concepts, general principles for design – Part 2: Technical principles and specifications
EN 1127-1	1997	Explosive atmospheres – Explosion prevention and protection – Part 1: Basic concepts and methodology
EN 1953	1998	Atomising and spraying equipment for coating materials – Safety requirements
EN 50014	1997	Electrical apparatus for potentially explosive atmospheres – General requirements
EN 50018	2000	Electrical apparatus for potentially explosive atmospheres – Flameproof enclosures "d"
EN 50019	2000	Electrical apparatus for potentially explosive atmospheres – Increased safety "e"
EN 50020	1994	Electrical apparatus for potentially explosive atmospheres – Intrinsic safety "i"
EN 50176	1996	Automatic electrostatic spraying installations for flammable liquid coating materials
EN 50177	1996	Automatic electrostatic spraying installations for flammable coating powder
EN 50223	2001	Automatic electrostatic application equipment for flammable flock material
EN 50281-1-1	1998	Electrical apparatus for use in the presence of combustible dust – Part 1-1: Electrical apparatus protected by enclosures – Construction and testing
EN 60079-10	1996	Electrical apparatus for explosive gas atmospheres – Part 10: Classification of hazardous areas
EN 60204-1	1997	Safety of machinery - Electrical equipment of machines – Part 1: General requirements
EN 60529	1991	Degrees of protection provided by enclosures (IP Code)