

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

The European Standard EN 50050:2001 has the status of a
British Standard

ICS 29.260.20; 25.220.20

National foreword

This British Standard is the official English language version of EN 50050:2001. It supersedes BS 6742-1:1987 which is withdrawn.

The UK participation in its preparation was entrusted by Technical Committee GEL/31, Electrical apparatus for explosive atmospheres, to Subcommittee GEL/31/18, Electrostatic spray guns, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible 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.

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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

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CENELEC

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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with the EN have to be withdrawn (dow) 2004-04-01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