

Cabinas de pulverización para materiales de recubrimiento orgánico. Requisitos de seguridad (Ratificada por la Asociación Española de Normalización en febrero de 2019.)

UNE-EN 16985:2018

Cabinas de pulverización para materiales de recubrimiento orgánico. Requisitos de seguridad (Ratificada por la Asociación Española de Normalización en febrero de 2019.)

*Spray booths for organic coating material - Safety requirements (Endorsed by Asociación Española de Normalización in February of 2019.)*

*Cabines d'application par pulvérisation de produits de revêtement organiques - Prescriptions de sécurité (Entérinée par l'Asociación Española de Normalización en février 2019.)*

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EUROPEAN STANDARD  
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EUROPÄISCHE NORM

**EN 16985**

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Supersedes EN 12215:2004+A1:2009, EN  
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English Version

**Spray booths for organic coating material - Safety  
requirements**

Cabines d'application par pulvérisation de produits de  
revêtement organiques - Prescriptions de sécurité

Lackierkabinen für organische Beschichtungsstoffe -  
Sicherheitsanforderungen

This European Standard was approved by CEN on 15 March 2018.

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## European foreword

This document (EN 16985:2018) has been prepared by Technical Committee CEN/TC 271 “Surface treatment equipment - safety”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2019, and conflicting national standards shall be withdrawn at the latest by June 2019.

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

This document supersedes EN 12215:2004+A1:2009, EN 12981:2005+A1:2009 and EN 13355:2004+A1:2009.

In comparison with the previous edition the following technical modifications have been made:

- a) The 3 European Standards EN 12215:2004+A1:2009, EN 12981:2005+A1:2009 and EN 13355:2004+A1:2009 have been merged into this European standard;
- b) The scope has not been changed, but the limits of a spray booth have been defined by specifying the interfaces to ancillary machinery, to clarify the scope;
- c) 4.2.2 Falling objects, has been introduced;
- d) 4.2.3 Height from the ground, has been introduced;
- e) 4.7 Contact with and inhalation of hazardous material, has been revised;
- f) 4.7.3.3.4 Segmented spray booths, has been introduced;
- g) 4.8 Fire, has been revised;
- h) 4.9 Explosion, has been revised;
- i) 4.10 Safety devices and control systems, has been revised;
- j) 4.11 Trapping, has been introduced;
- k) 4.12 Ergonomics, has been introduced;
- l) 4.13 Environment in which the machinery is used, has been introduced;
- m) The list of hazards has been moved to new Annex A (informative);
- n) Examples of classification of hazardous zones have been moved to new Annex B (informative);
- o) Calculations for explosive atmosphere have been moved to new Annex C (normative);
- p) Calculation for powder filters has been introduced (Annex C.4);
- q) Requirements for air flow velocity measurement have been clarified and moved to new Annex D (normative);



- r) Information on ignitability of water-based paint has been introduced in new Annex E (informative);
- s) Annex F (normative) on Energy-efficiency and reduction of environmental impact has been introduced;
- t) Annex G (informative) with examples for safety related controls has been introduced;
- u) Annex H (informative) on a procedure for the determination of the spray booth clearance time using smoke has been introduced;
- v) Annex I (informative) with an example for the estimation of the spray booth purge time has been introduced;
- w) Annex J (informative) with examples for ventilation of spray booths with working pits has been introduced.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of the EU Directive 2006/42/EC.

For relationship with the EU Directive, see informative Annex ZA, which is an integral part of this document.

**NOTE** Although a spray booth, as an integral whole, formally does not fall under the scope of the ATEX Directive 2014/34/EU, the standard is based upon a fundamental risk analysis according to this directive.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard deals with all significant hazards, hazardous situations and hazardous events relevant to spray booths for the application of organic liquid and powder coating materials, when they are used as intended and under the conditions foreseen by the manufacturer, including reasonably foreseeable misuse.

See Annex A for significant hazards.

Interfaces between spray booths and other machinery used in coating application are given in Figure 1.

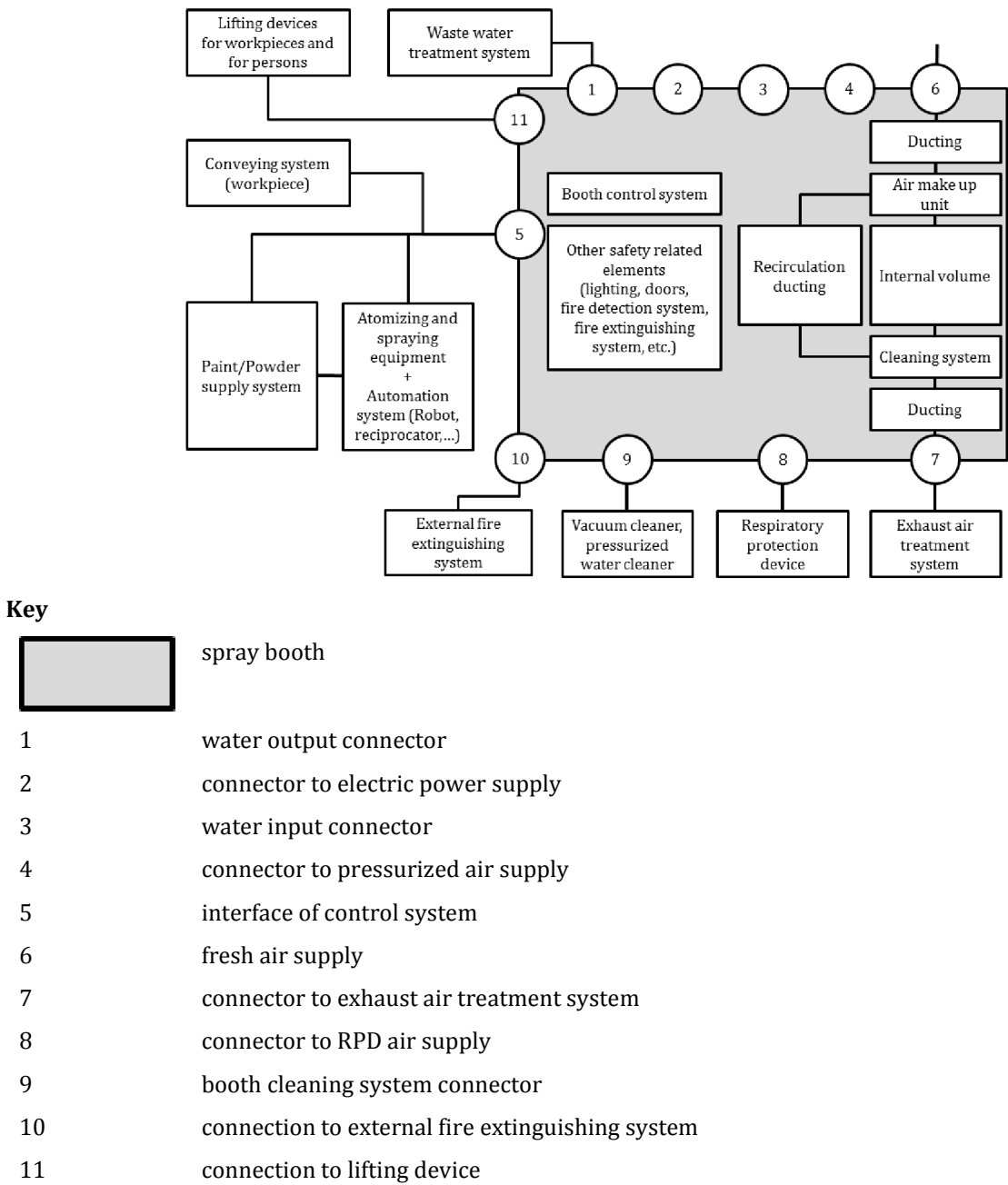


Figure 1 — Interfaces of a spray booth to ancillary machinery

The specific significant risks related to the use of this machinery with foodstuff and pharmaceutical products are not dealt with in this standard.

The specific significant risks related to drying operation of combined spraying and drying booths are not dealt with in this standard, but in EN 1539:2015.

This European Standard is not applicable to:

- spaces for application of organic coating material consisting only of an extraction wall;
- platforms attached to spray booths (e.g. for touch-up jobs);
- flock booths (see EN 50223:2015);
- spray booths with airflow from vertical inlet to horizontal extraction or from horizontal inlet to vertical extraction.

This European Standard is not applicable to machinery manufactured before the date of its publication as European Standard.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN 525:2009, *Non-domestic direct gas-fired forced convection air heaters for space heating not exceeding a net heat input of 300 kW*

EN 547-1:1996+A1:2008, *Safety of machinery — Human body measurements — Part 1: Principles for determining the dimensions required for openings for whole body access into machinery*

EN 746-1:1997+A1:2009, *Industrial thermoprocessing equipment — Part 1: Common safety requirements for industrial thermoprocessing equipment*

EN 746-2:2010, *Industrial thermoprocessing equipment — Part 2: Safety requirements for combustion and fuel handling systems*

EN 1127-1:2011, *Explosive atmospheres — Explosion prevention and protection — Part 1: Basic concepts and methodology*

EN 1539:2015, *Dryers and ovens, in which flammable substances are released — Safety requirements*

EN 12198-1:2000+A1:2008, *Safety of machinery — Assessment and reduction of risks arising from radiation emitted by machinery — Part 1: General principles*

EN 12198-2:2002+A1:2008, *Safety of machinery — Assessment and reduction of risks arising from radiation emitted by machinery — Part 2: Radiation emission measurement procedure*

EN 12464-1:2011, *Light and lighting — Lighting of work places — Part 1: Indoor work places*

EN 14373:2005, *Explosion suppression systems*

EN 14462:2015, *Surface treatment equipment — Noise test code for surface treatment equipment including its ancillary handling equipment — Accuracy grades 2 and 3*