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RINGLUSE MASINAD. OHUTUSNÕUDED

Machinery for supply and circulation of liquid coating
materials - Safety requirements

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>See Eesti standard EVS-EN 12621:2025 sisaldab Euroopa standardi EN 12621:2025 ingliskeelset teksti.</p> <p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 12.02.2025.</p> <p>Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.</p>	<p>This Estonian standard EVS-EN 12621:2025 consists of the English text of the European standard EN 12621:2025.</p> <p>This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.</p> <p>Date of Availability of the European standard is 12.02.2025.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p>
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ICS 87.100

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EUROPEAN STANDARD

EN 12621

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2025

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Supersedes EN 12621:2006+A1:2010

English Version

Machinery for supply and circulation of liquid coating materials - Safety requirements

Installations d'alimentation et de circulation de produits de revêtement liquide - Exigences de sécurité

Förder- und Umlaufanlagen für flüssige Beschichtungsstoffe - Sicherheitsanforderungen

This European Standard was approved by CEN on 22 December 2024.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents	Page
European foreword	4
Introduction	5
1 Scope	6
2 Normative references	8
3 Terms, definitions and symbols	10
3.1 Terms and definitions	10
3.2 Symbols	12
4 Safety requirements and/or protective/risk reduction measures	12
4.1 Mechanical	12
4.1.1 Crushing, drawing in or impact	12
4.1.2 Parts under pressure	14
4.1.3 Slipping	15
4.2 Electrical	16
4.2.1 General	16
4.2.2 External influences on the electrical equipment	16
4.3 Temperature	16
4.3.1 Hot surfaces	16
4.3.2 Thermal stability	17
4.3.3 Heating system	17
4.4 Noise	17
4.5 Hazardous substances	18
4.5.1 General	18
4.5.2 Health	20
4.5.3 Fire	20
4.5.4 Explosion	21
4.6 Failure of energy supply	25
4.7 Control system	25
5 Verification of safety requirements and/or protective/risk reduction measures	27
6 Information for use	34
6.1 General	34
6.2 Instructions for operation	34
6.3 Instructions for maintenance	35
6.4 Instructions for installation	35
6.4.1 General	35
6.4.2 Supply hoses for application equipment and their fittings	36
6.4.3 Ventilation	36
6.5 Marking	36
6.5.1 Warning signs	36
6.5.2 Type plate	36
6.6 Sales literature	36
Annex A (informative) List of significant hazards	37
Annex B (informative) Energy-efficiency and reduction of environmental impact	40
B.1 General	40
B.2 Machinery	40
Annex C (informative) Significant technical changes between this European Standard and the previous edition	42

Annex ZA (informative) Relationship between this European Standard and the essential requirements of Directive 2006/42/EC aimed to be covered.....	44
Annex ZB (informative) Relationship between this European Standard and the essential Health and Safety Requirements of Directive 2014/34/EU aimed to be covered	47
Bibliography.....	50

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European foreword

This document (EN 12621:2025) 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 August 2025, and conflicting national standards shall be withdrawn at the latest by August 2026.

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 12621:2006+A1:2010.

See Annex C, Table C.1 for the technical modifications which have been made in comparison with EN 12621:2006+A1:2010.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annexes ZA and ZB, which are an integral part of this document.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Introduction

This document is a type-C standard as stated in EN ISO 12100:2010.

This document is of relevance, in particular, for the following stakeholder groups representing the market players with regard to machinery safety:

- machine manufacturers (small, medium and large enterprises);
- health and safety bodies (regulators, accident prevention organizations, market surveillance, etc.).

Others can be affected by the level of machinery safety achieved with the means of the document by the above-mentioned stakeholder groups:

- machine users/employers (small, medium and large enterprises);
- machine users/employees (e.g. trade unions);
- service providers, e.g. for maintenance (small, medium and large enterprises).

The above-mentioned stakeholder groups have been given the possibility to participate at the drafting process of this document.

The machinery concerned and the extent to which hazards, hazardous situations or hazardous events are covered are indicated in the Scope of this document.

When requirements of this type-C standard are different from those which are stated in type-A or type-B standards, the requirements of this type-C standard take precedence over the requirements of the other standards for machines that have been designed and built according to the requirements of this type-C standard.

1 Scope

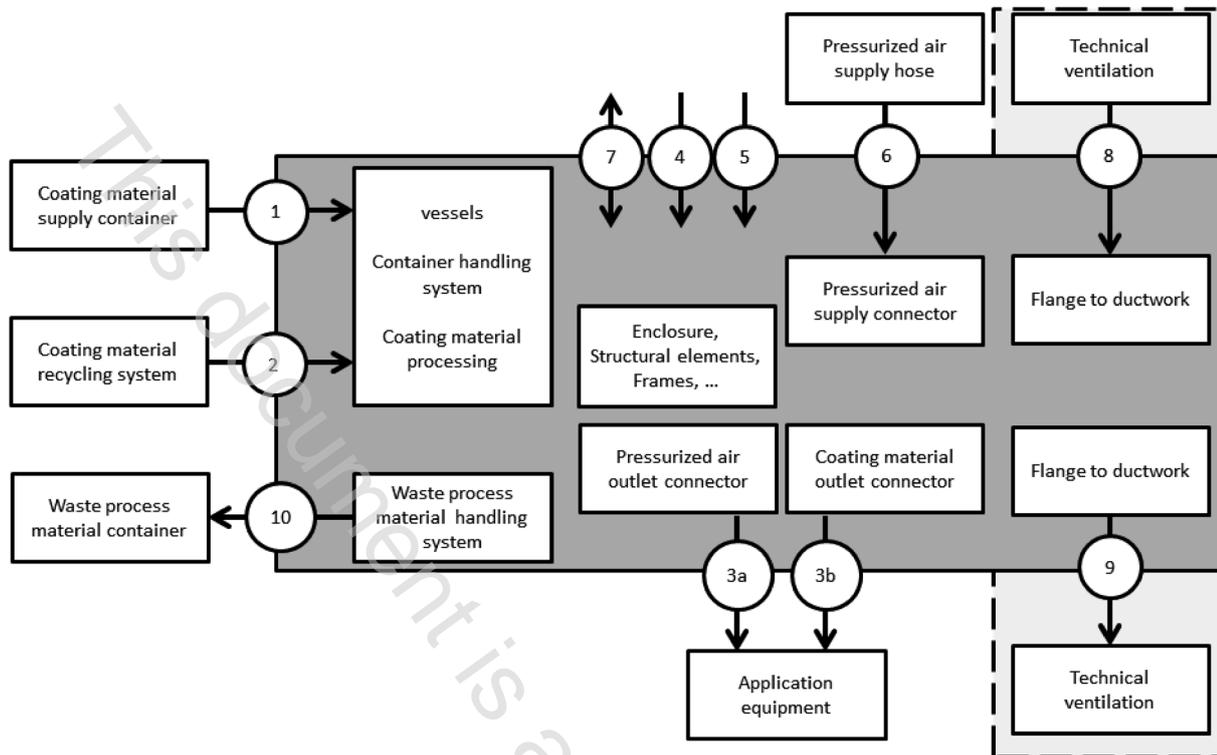
This document deals with all significant hazards, hazardous situations and events which are relevant to machinery for supply and circulation of liquid coating material, when used as intended and under the conditions foreseen by the manufacturer, including reasonably foreseeable misuse.

See Annex A for significant hazards.

Together with this document, EN 50050-1:2013, EN 50059:2025, EN 50176:2025 or EN 50348:2010 give requirements for electrostatic machinery for supply and circulation of liquid coating material.

The specific significant risks related to the use of machinery for supply and circulation of liquid coating material with foodstuffs and pharmaceutical products are not dealt with in this document.

Interfaces to connected machinery and systems are given in Figure 1, to specify the limit of the machinery for supply and circulation of liquid coating material.



Key

- machinery for supply and circulation of liquid coating material
- additional parts for machinery for supply and circulation of liquid coating material with own forced ventilation
- 1 container handling interface and coating material inlet connector
- 2 inlet connector for recycled coating material
- 3a pressurized air supply hose assembly (hose and connectors)
- 3b coating material supply hose assembly (hose and connectors)
- 4 electrical power supply connector
- 5 electrostatic high voltage supply connector
- 6 pressurized air supply connector
- 7 interface of control system
- 8 inlet connector of forced ventilation
- 9 outlet connector of forced ventilation
- 10 waste process material outlet connector

Figure 1 — Limits of the machinery

This document does not apply to:

- pressure related hazards of equipment classified as higher than category 1 of Directive 2014/68/EU Article 13;

NOTE 1 For equipment of higher category than category 1 of Directive 2014/68/EU, see EN 13445 (all parts) and EN 13480 (all parts).

- machinery for the supply of powder coating material;
- machinery for coating material recycling;
- hand-held agitators;

- agitators of more than 3 kW electrical power supply;
- offline heating systems;
- supply systems for CO₂ shot-blasting machinery;
- equipment used for manufacturing of coating material;
- coating material packaging units (drums, containers, etc.).

This document is not applicable to machinery for supply and circulation of liquid coating material manufactured before the date of its publication.

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 619:2022, *Continuous handling equipment and systems — Safety requirements for equipment for mechanical handling of unit loads*

EN 809:1998+A1:2009¹, *Pumps and pump units for liquids — Common safety requirements*

EN 842:1996+A1:2008, *Safety of machinery — Visual danger signals — General requirements, design and testing*

EN 1127-1:2019, *Explosive atmospheres — Explosion prevention and protection — Part 1: Basic concepts and methodology*

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

EN 50050-1:2013, *Electrostatic hand-held spraying equipment — Safety requirements — Part 1: Hand-held spraying equipment for ignitable liquid coating materials*

EN 50059:2025, *Electrostatic hand-held spraying equipment — Safety requirements — Hand-held spraying equipment for non-ignitable coating materials*

EN 50176:2025, *Stationary electrostatic application equipment for ignitable liquid coating material — Safety requirements*

EN 50348:2010, *Stationary electrostatic application equipment for non-ignitable liquid coating material — Safety requirements*

EN 60079-30-1:2017, *Explosive atmospheres — Part 30-1: Electrical resistance trace heating — General and testing requirements (IEC/IEEE 60079-30-1:2015, modified)*

EN 60204-1:2018, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2016, modified)*

EN 62395-1:2013, *Electrical resistance trace heating systems for industrial and commercial applications — Part 1: General and testing requirements (IEC 62395-1:2013)*

¹ As impacted by EN 809:1998+A1:2009/AC:2010.

EN IEC 60079-0:2018,² *Explosive atmospheres — Part 0: Equipment — General requirements (IEC 60079-0:2017)*

EN IEC 60079-10-1:2021, *Explosive atmospheres — Part 10-1: Classification of areas — Explosive gas atmospheres (IEC 60079-10-1:2020 + COR1:2021)*

EN ISO 4413:2010, *Hydraulic fluid power — General rules and safety requirements for systems and their components (ISO 4413:2010)*

EN ISO 4414:2010, *Pneumatic fluid power — General rules and safety requirements for systems and their components (ISO 4414:2010)*

EN ISO 8031:2020, *Rubber and plastics hoses and hose assemblies — Determination of electrical resistance and conductivity (ISO 8031:2020)*

EN ISO 11688-1:2009, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 1: Planning (ISO/TR 11688-1:1995)*

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

EN ISO 13732-1:2008, *Ergonomics of the thermal environment — Methods for the assessment of human responses to contact with surfaces — Part 1: Hot surfaces (ISO 13732-1:2006)*

EN ISO 13849-1:2023, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2023)*

EN ISO 13851:2019, *Safety of machinery — Two-hand control devices — Principles for design and selection (ISO 13851:2019)*

EN ISO 13854:2019, *Safety of machinery — Minimum gaps to avoid crushing of parts of the human body (ISO 13854:2017)*

EN ISO 13855:2010, *Safety of machinery — Positioning of safeguards with respect to the approach speeds of parts of the human body (ISO 13855:2010)*

EN ISO 13857:2019, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857:2019)*

EN ISO 14120:2015, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards (ISO 14120:2015)*

EN ISO 14122-2:2016, *Safety of machinery — Permanent means of access to machinery — Part 2: Working platforms and walkways (ISO 14122-2:2016)*

EN ISO 14122-3:2016, *Safety of machinery — Permanent means of access to machinery — Part 3: Stairs, stepladders and guard-rails (ISO 14122-3:2016)*

EN ISO 14122-4:2016, *Safety of machinery — Permanent means of access to machinery — Part 4: Fixed ladders (ISO 14122-4:2016)*

EN ISO 19353:2019, *Safety of machinery — Fire prevention and fire protection (ISO 19353:2019)*

² As impacted by EN IEC 60079-0:2018/AC:2020-02 and EN IEC 60079-0:2018/A11:2024.

EN ISO 80079-36:2016,³ *Explosive atmospheres — Part 36: Non-electrical equipment for explosive atmospheres — Basic method and requirements (ISO 80079-36:2016)*

ISO 3864-1:2011, *Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs and safety markings*

3 Terms, definitions and symbols

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100:2010 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp/>

3.1.1

machinery

system for supply and/or circulation of liquid coating materials which may consist of machines and elements such as:

- pumps (e.g. for processing, supply, circulation);
- rams, lifting equipment and container handling systems if these are integral part of the machinery;
- dosing and mixing units (e.g. for multi component coating materials);
- pressurized and non-pressurized vessels;
- pipes, hoses and their assemblies;
- couplings, valves, pressure regulators;
- agitators;
- filters;
- pulsation dampers;
- control systems;
- forced ventilation systems (for enclosed machinery);
- systems to separate machine parts under high voltage from other machine parts;
- measurement devices;
- sensors;
- equipment for heating and/or cooling of the coating materials

³ As impacted by EN ISO 80079-36:2016/AC:2019.