

HAAVELPUHASTUSMASINAD. OHUTUS JA
KESKKONNANÕUDED

Shot blasting machinery - Safety and environmental
requirements (ISO 23779:2024)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>See Eesti standard EVS-EN ISO 23779:2025 sisaldab Euroopa standardi EN ISO 23779:2025 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 ISO 23779:2025 consists of the English text of the European standard EN ISO 23779:2025.</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 13.110, 77.180

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EUROPEAN STANDARD

EN ISO 23779

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Équipements de grenailage - Exigences de sécurité et d'environnement (ISO 23779:2024)

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

This document (EN ISO 23779:2025) has been prepared by Technical Committee ISO/TC 306 "Foundry machinery" in collaboration with Technical Committee CEN/TC 202 "Foundry machinery" 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of an identical text or by endorsement, at the latest by August 2025, and conflicting national standards shall be withdrawn at the latest by August 2025.

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 1248:2001+A1:2009.

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 Annex ZA, which is an integral part of this document.

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

According to the CEN-CENELEC Internal Regulations, the national standards organizations 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.

Endorsement notice

The text of ISO 23779:2024 has been approved by CEN as EN ISO 23779:2025 without any modification.

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 306, *Foundry machinery*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 202, *Foundry machinery*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document is a type C standard as stated in ISO 12100:2010 and also deals with aspects of environmental impact and energy efficiency.

The design, the construction and the actual operation of shot blasting machinery affects aspects of safety, energy usage and environmental impact. It is essential to minimize energy usage and environmental impact while achieving the safety requirements given in this document.

The machinery concerned and the extent to which hazards, hazardous situations and hazardous events are covered are indicated in the scope of this document. When provisions of this type C standard are different from those which are stated in type A or B standards, the provisions of this type C standard take precedence over the provisions of the other standards, for machines that have been designed and built according to the provisions of this type C standard.

Where for clarity an example of a preventative measure is given in the text, this should not be considered as the only possible solution. Other solutions can be used as far as they fulfil correctly the criteria expressed in the requirement.

This document assumes that the shot blasting machinery is operated and maintained by trained personnel.

Shot blasting machinery — Safety and environmental requirements

1 Scope

This document specifies safety and environmental requirements for shot blasting machinery.

Shot blasting machinery includes:

- wheel blasting machinery;
- air blasting machinery for dry and wet blasting;
- combined wheel and air blasting machinery.

NOTE [Annex A](#) illustrates examples of shot blasting machinery.

This document is applicable to:

- all significant hazards, hazardous situations and hazardous events relevant to shot blasting machinery, when used as intended and under the conditions foreseen by the manufacturer, including reasonably foreseeable misuse;
- measures for minimization of environmental impact and energy usage of shot blasting machinery.

Interfaces between shot blasting machinery and other equipment used in shot blasting but not in the scope of this document are:

- mechanical and electrical interface to external workpiece transport system;
- connector to electrical energy supply;
- connector to fresh air supply ducting;
- connector to exhaust air ducting;
- connector to pressurized air supply;
- connector to water supply;
- connector to waste water system;
- interface for safe exchange of control signals;
- connector for fresh air supply for respiratory protection device (in blast rooms).

NOTE [Annex C](#) gives an illustration of interfaces between shot blasting machinery and other equipment used in shot blasting but not in the scope of this document.

The specific significant risks related to mobile and movable shot blasting machinery (e.g. shot blasting machines designed for operation at changing locations) are not dealt with in this document.

This document does not apply to:

- high pressure water jet machinery;
- dry-ice blasting machinery.

This document does not apply to shot blasting machines manufactured before the date of its publication as an ISO standard.

NOTE The requirements specified in this document can serve as a guideline for a risk assessment of shot blasting machines manufactured before the date of its publication as an ISO 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.

ISO 3743-1:2010, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering methods for small movable sources in reverberant fields — Part 1: Comparison method for a hard-walled test room*

ISO 3744:2010, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering methods for an essentially free field over a reflecting plane*

ISO 3746:2010, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Survey method using an enveloping measurement surface over a reflecting plane*

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

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

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

ISO 4871:1996, *Acoustics — Declaration and verification of noise emission values of machinery and equipment*

ISO 7000:2019, *Graphical symbols for use on equipment — Registered symbols*

ISO 7731:2003, *Ergonomics — Danger signals for public and work areas — Auditory danger signals*

ISO 10218-2:2011, *Robots and robotic devices — Safety requirements for industrial robots — Part 2: Robot systems and integration*

ISO 11201:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions in an essentially free field over a reflecting plane with negligible environmental corrections*

ISO 11202:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions applying approximate environmental corrections*

ISO 11204:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions applying accurate environmental corrections*

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

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

ISO 13850:2015, *Safety of machinery — Emergency stop function — Principles for design*

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

ISO 14119:2013, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection*

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

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

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

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

IEC 60204-1:2016, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements*

IEC 60079-0:2017, *Explosive atmospheres — Part 0: Equipment — General requirements*

3 Terms and definitions

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

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

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

3.1

external workpiece transport system

system that transports the workpiece to or from the shot blasting machine

3.2

internal workpiece transport system

system that transports the workpiece within the shot blasting machine

3.3

wheel blaster

device which accelerates the shot blasting media by a rotating wheel with blades

3.4

air blaster

assembly consisting of a nozzle and connected hose(s) or tube(s), which accelerates the shot blasting media by pressurized air

3.5

accessible blasting chamber

blasting chamber which, by designated use, is designed to be entered by personnel

3.6

workspace

workplace for the operator as specified by the manufacturer of the shot blasting machine

3.7

interior workspace

workspace inside of a shot blasting machine

3.8

screw conveyor

device that uses a rotating helical blade to move shot blasting media, horizontally or at a slight incline

3.9

belt conveyor

endless belt between two, or more, pulleys to move shot blasting media or products, horizontally or incline