



SLOVENSKI STANDARD

oSIST prEN ISO 18758:2025

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Stroji za rudarska in zemeljska dela - Stroji za vrtanje in utrjevanje skal - Varnostne zahteve (ISO/DIS 18758:2025)

Mining and earth-moving machinery - Rock drill rigs and rock reinforcement rigs - Safety requirements (ISO/DIS 18758:2025)

Bergbau- und Erdbaumaschinen - Gesteinsbohrgeräte und Gesteinssicherungsgeräte - Sicherheit (ISO/DIS 18758:2025)

Engins d'exploitation minière et de terrassement - Machines de forage pour roches et de renfort de roches - Exigences de sécurité (ISO/DIS 18758:2025)

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ISO/DIS 18758

Mining and earth-moving machinery — Rock drill rigs and rock reinforcement rigs — Safety requirements

Engins d'exploitation minière et de terrassement — Appareils de forage et de renfort de roches — Exigences de sécurité

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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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 documents 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 82, *Mining*, in cooperation with Technical Committee ISO/TC 127, *Earth-moving machinery*.

This edition of ISO 18758 cancels and replaces ISO 18758-1:2018 and ISO 18758-2:2018.

In addition to several editorial changes, the main revisions with respect to the previous edition (ISO 18758-2:2018) are as follows:

- a) This document has been revised under the Vienna agreement in cooperation with CEN/TC 196;
- b) The short-form term rig in this document has been replaced with the term machine to provide consistency with other machinery safety standards;
- c) The scope exclusions have been simplified and clarified. Most of the machines excluded are within the scope of the ISO 20770 series;
- d) The vocabulary of ISO 18758-1:2018 has been moved to ISO 22932-5, which has been revised to include new vocabulary;
- e) Internal references within this document have been updated, including [Annex C](#) on significant hazards;
- f) Repeated requirements have been deleted;
- g) Requirements for laser equipment have been added;
- h) Requirements for propulsion batteries have been added;
- i) Requirements for strength and stability have been revised;
- j) The carrier brake requirements have been revised to align more closely with ISO 3450;
- k) Winch and rope requirements have been revised;
- l) Revised requirements on the protection of moving parts.

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- m) The requirements for the location for mounting fire extinguishers have been clarified;
- n) A verification table has been added to [Clause 5](#);
- o) The content of [clause 6](#) has been adapted from ISO 12100:2010, 6.4 and expanded to apply to rock drill rigs.
- p) The requirements on signals and warning devices have been adapted from ISO 12100:2010, 6.4.3.
- q) [Annex ZA](#) has been added to the CEN version, complying with CEN guide 414:2017, Option C;
- r) [Annex ZB](#) has been added to the CEN version to harmonise with the European Machinery regulation.
- s) The bibliography has been restructured under headings corresponding to the topics covered, often relating to the names of the TCs that drafted them;

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.

European foreword

This document has been prepared under a standardisation 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](#) and [ZB](#), which is an integral part of this document.

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Introduction

This document is a type C standard as stated in 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;
- mining companies;
- health and safety bodies (regulators, accident prevention organisations, market surveillance, etc.).

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

- machine operators;
- service providers, e.g. for maintenance;
- third party system and technology providers.

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.

The vocabulary of ISO 22932-5 is essential for the understanding of the safety requirements of this document.

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

The following assumptions were made in writing this document:

- a) the operators of the machines are well trained professionals and aware of potential risks of using the machine in the working environment, including the hazards of reasonably foreseeable misuse (See ISO/IEC GUIDE 51:2014, 6.1 a), b));
- b) the machines are operated and maintained according to the instructions given by the manufacturer, such as operator's instructions (See ISO/IEC GUIDE 51:2014, 7.4.2.2);
- c) that administrative controls are in place for preventing unauthorized entry of persons to the area where machines are working (See ISO/IEC GUIDE 51:2014, 6.2.2 and note).

For increased readability of this document, rock drill rigs and rock reinforcement rigs are called machines from [clause 4](#) onwards unless the specific term is needed for emphasis or clarity.

Mining and earth-moving machinery — Rock drill rigs and rock reinforcement rigs — Safety requirements

1 Scope

This document specifies the safety requirements for rock drill rigs and rock reinforcement rigs designed for the following underground or surface operations:

- a) blast hole drilling;
- b) rock reinforcement and consolidation (injection holes, pipe roofing, netting, bolting);
- c) drilling for secondary breaking;
- d) dimensional stone drilling;
- e) mineral prospecting, e.g. utilizing core drilling or reverse circulation drilling;
- f) water and methane drainage drilling;
- g) raise boring;

when used by a well-trained operator in accordance with the information for use and where sufficient measures have been taken to prevent unauthorized entry of persons to the area where machines are working.

NOTE Machines can be designed for more than one of the operations above. See ISO 22932-4 and ISO 22932-5 for vocabulary.

This document is also applicable to rock drill rigs and rock reinforcement rigs based on earth-moving machinery (EMM) as defined in ISO 6165.

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

This document is not applicable to the following machines: drill rigs for soil and rock mixture, Kelly drill rigs and casing drivers, cable tool drill rigs, pre-armouring machines, sonic drill rigs; shaft sinking drill rigs, crane attached drill rigs, drill rigs on derricks, scaling machines.

This document does not cover machines on railway tracks, artificial intelligence, autonomous systems, self-evolving systems, cyber security, lightning, protection against corruption, malicious attempts from third parties, or potentially explosive atmospheres.

This document deals with the relevant and significant hazards, hazardous situations, or hazardous events, as listed in [Annex C](#), when the machine is used as intended and under the conditions of misuse which are reasonably foreseeable by the manufacturer.

This document is not applicable to machines 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.

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ISO 2631-1, *Mechanical vibration and shock — Evaluation of human exposure to whole-body vibration — Part 1: General requirements*

ISO 2860, *Earth-moving machinery — Minimum access dimensions*

ISO 2867, *Earth-moving machinery — Access systems*

ISO 3411:2007, *Earth-moving machinery — Physical dimensions of operators and minimum operator space envelope*

ISO 3449, *Earth-moving machinery — Falling-object protective structures — Laboratory tests and performance requirements*

ISO 3450:2011, *Earth-moving machinery — Wheeled or high-speed rubber-tracked machines — Performance requirements and test procedures for brake systems*

ISO 3457, *Earth-moving machinery — Guards — Definitions and requirements*

ISO 3471, *Earth-moving machinery — Roll-over protective structures — Laboratory tests and performance requirements*

ISO 3795, *Road vehicles, and tractors and machinery for agriculture and forestry — Determination of burning behaviour of interior materials*

ISO 3864 (all parts), *Graphical symbols — Safety colours and safety signs*

ISO 4302, *Cranes — Wind load assessment*

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

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

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

ISO 5006, *Earth-moving machinery — Operator's field of view — Test method and performance criteria*

ISO 5010, *Earth-moving machinery — Wheeled machines — Steering requirements*

ISO 6405 (all parts), *Earth-moving machinery — Symbols for operator controls and other displays*

ISO 6683, *Earth-moving machinery — Seat belts and seat belt anchorages — Performance requirements and tests*

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

ISO 7010, *Graphical symbols — Safety colours and safety signs — Registered safety signs*

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

ISO 9244, *Earth-moving machinery — Machine safety labels — General principles*

ISO 9533, *Earth-moving machinery — Machine-mounted audible travel alarms and forward horns — Test methods and performance criteria*

ISO 10265, *Earth-moving machinery — Crawler machines — Performance requirements and test procedures for braking systems*

ISO 10532, *Earth-moving machinery — Machine-mounted retrieval device — Performance requirements*

ISO 10570, *Earth-moving machinery — Articulated frame lock — Performance requirements*

ISO 10968, *Earth-moving machinery — Operator's controls*

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*

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

ISO 12509, *Earth-moving machinery and rough-terrain trucks — Lighting, signalling and marking lights, and reflex reflectors*

ISO 13766-1, *Earth-moving and building construction machinery — Electromagnetic compatibility (EMC) of machines with internal electrical power supply — Part 1: General EMC requirements under typical electromagnetic environmental conditions*

ISO 13766-2, *Earth-moving and building construction machinery — Electromagnetic compatibility (EMC) of machines with internal electrical power supply — Part 2: Additional EMC requirements for functional safety*

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

ISO 13849-2, *Safety of machinery — Safety-related parts of control systems — Part 2: Validation*

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

ISO 13851, *Safety of machinery — Two-hand control devices — Principles for design and selection*

ISO 13856-2, *Safety of machinery — Pressure-sensitive protective devices — Part 2: General principles for design and testing of pressure-sensitive edges and pressure-sensitive bars*

ISO 13856-3, *Safety of machinery — Pressure-sensitive protective devices — Part 3: General principles for design and testing of pressure-sensitive bumpers, plates, wires and similar devices*

ISO 14118, *Safety of machinery — Prevention of unexpected start-up*

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

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

ISO 15817, *Earth-moving machinery — Safety requirements for remote operator control systems*

ISO 15818, *Earth-moving machinery — Lifting and tying-down attachment points — Performance requirements*

ISO 16368, *Mobile elevating work platforms — Design, calculations, safety requirements and test methods*

ISO 22932-5, *Mining — Vocabulary — Part 5: Drilling and blasting*

ISO 23875, *Mining — Air quality control systems for operator enclosures — Performance requirements and test methods*

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

IEC 60204-11, *Safety of machinery — Electrical equipment of machines — Part 11: Requirements for equipment for voltages above 1 000 V AC or 1 500 V DC and not exceeding 36 kV*

IEC 61000-6-2, *Electromagnetic compatibility (EMC) — Part 6-2: Generic standards — Immunity for industrial environments*

IEC 61000-6-4, *Electromagnetic compatibility (EMC) — Part 6-4: Generic standards — Emission standard for industrial environments*

IEC 60825-1, *Safety of laser products — Part 1: Equipment classification and requirements*

IEC 61310-1, *Safety of machinery — Indication, marking and actuation — Part 1: Requirements for visual, acoustic and tactile signals*

IEC 61310-2, *Safety of machinery — Indication, marking and actuation — Part 2: Requirements for marking*

IEC 61851-1, *Electric vehicle conductive charging system — Part 1: General requirements*

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IEC 62196 (all parts), *Plugs, socket-outlets, vehicle connectors and vehicle inlets — Conductive charging of electric vehicles*

IEC 62485-6, *Safety requirements for secondary batteries and battery installations — Part 6: Safe operation of lithium-ion batteries in traction applications*

IEC 62619, *Secondary cells and batteries containing alkaline or other non-acid electrolytes — Safety requirements for secondary lithium cells and batteries, for use in industrial applications*

IEC 62620, *Secondary cells and batteries containing alkaline or other nonacid electrolytes — Secondary lithium cells and batteries for use in industrial applications*

IEC 62745, *Safety of machinery — Requirements for cableless control systems of machinery*

EN 14492-2:2019, *Cranes — Power driven winches and hoists — Part 2: Power driven hoists*

3 Terms and definitions

For the purpose of this document, the terms and definitions given in IEC 60204-1, ISO 2631-1, ISO 3450, ISO 4871, ISO 11201, ISO 12100, ISO 14120, and ISO 22932-5.

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/>

4 Safety requirements

4.1 General requirements

4.1.1 General

Machinery shall meet the safety requirements of this document. In addition, the machine shall be designed according to the principles of ISO 12100 for hazards which are not dealt with by this document.

4.1.2 Handling of the machine and its parts

4.1.2.1 Manual handling

For components which require to be manually handled during operation with a mass of 25 kg and higher, there shall be provisions for lifting.

For components which require to be manually handled during operation with a mass less than 25 kg, the geometry shall facilitate manual handling.

4.1.2.2 Attachment points

The machine shall have the attachment points for:

- a) lifting the whole machine, or parts of it
- b) anchoring the machine on the means of transport

The attachment points shall meet the requirements of ISO 15818.