

MINERAALIDE JA SARNASTE TAHKETE MATERJALIDE
MEHAANILISE TÖÖTLEMISE MASINAD. OHUTUS. OSA 4:
SÕELUMISMASINATE ERINÕUDED

Machines for mechanical processing of minerals and
similar solid materials - Safety - Part 4: Specific
requirements for screening machinery

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 1009-4:2020 sisaldab Euroopa standardi EN 1009-4:2020 ingliskeelset teksti.	This Estonian standard EVS-EN 1009-4:2020 consists of the English text of the European standard EN 1009-4:2020.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 27.05.2020.	Date of Availability of the European standard is 27.05.2020.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 73.120, 91.220

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:
Koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:

Homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

English Version

**Machines for mechanical processing of minerals and
similar solid materials - Safety - Part 4: Specific
requirements for screening machinery**

Machines pour le traitement mécanique des minéraux
et des matériaux solides similaires - Sécurité - Partie 4 :
Prescriptions spécifiques pour machines de criblage

Maschinen für die mechanische Aufbereitung von
Mineralien und ähnlichen festen Stoffen - Sicherheit -
Teil 4: Spezifische Anforderungen für
Klassiermaschinen (Siebmaschinen)

This European Standard was approved by CEN on 13 April 2020.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

Contents

Page

European foreword	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	6
4 Safety requirements and/or protective/risk reduction measures	7
4.1 General.....	7
4.2 Ergonomics requirements for screening machines maintenance.....	8
4.3 Screen equipment (cross tensioned screening panels, sheets, blocks and other wear parts)	20
5 Verification of safety requirements and/or protective/risk reduction measures	21
6 Information for use	23
6.1 General.....	23
6.2 Signals and warning devices	23
6.3 Instruction handbook.....	23
Annex A (informative) Example of screening machinery	24
Annex B (informative) Trilingual terminology of screening machinery	27
Annex C (informative) Calculation of the access dimensions	28
Annex D (informative) List of significant hazards	31
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC aimed to be covered	35
Bibliography	37

European foreword

This document (EN 1009-4:2020) has been prepared by Technical Committee CEN/TC 151 “Construction equipment and building material machines — 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 November 2020, and conflicting national standards shall be withdrawn at the latest by May 2022.

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 has been prepared under a standardization request given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

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

This part of EN 1009 is intended to be used in conjunction with EN 1009-1:2020.

EN 1009 “Machines for mechanical processing of minerals and similar solid materials — Safety” comprises the following parts:

- *Part 1: Common requirements for machinery and processing plants*
- *Part 2: Specific requirements for feeding machinery and continuous handling equipment*
- *Part 3: Specific requirements for crushing and milling machinery*
- *Part 4: Specific requirements for screening machinery*
- *Part 5: Specific requirements for cleaning, recycling and mud treatment machinery*
- *Part 6: Specific requirements for mobile machinery (in preparation)*

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, Turkey and the United Kingdom.

Introduction

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

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, organizations for people with special needs);
- service providers, e.g. for maintenance (small, medium and large enterprises);
- consumers (in case of machinery intended for use by consumers).

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 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, to be used together with EN 1009-1:2020, specifies the safety requirements and their verification for the design and construction of screening machinery for the mechanical processing in quarrying, recycling and processing mineral and by-products as defined in 3.1.

In addition, it specifies the type of information on safe working practices (including residual risks) to be provided by the manufacturer.

When requirements of this document are different from those which are stated in EN 1009-1:2020, the requirements of this document take precedence over the requirements of EN 1009-1:2020 for machines that have been designed and built according to the provisions of this document.

This document, together with EN 1009-1:2020, deals with all the significant hazards, hazardous situations and events relevant to screening machinery when they are used as intended and under the conditions foreseen by the manufacturer (see Annex C).

This document does not cover:

- design relating to road traffic regulations;
- hazards arising from the use of the machines in potentially explosive atmospheres as well as from processing of explosive materials and risks related to electromagnetic compatibility;
- specific hazards related to mobile machinery.

NOTE 1 EN ISO 13766-1 and EN ISO 13766-2 specify test methods and acceptance criteria for evaluating the electromagnetic compatibility of all kinds of mobile construction machinery.

NOTE 2 prEN 1009-6 “Specific requirements for mobile and semi mobile equipment” is under preparation to cover specific requirements (e.g. mobility, braking, access, frequent transportation), including exceptions and additional requirements for mobile and semi mobile equipment. This means that mobile machines are not covered as long as EN 1009-6 is not published by CEN.

This document is not applicable to screening machinery which are manufactured before the date of publication of this document by CEN.

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 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 547-2:1996+A1:2008, *Safety of machinery — Human body measurements — Part 2: Principles for determining the dimensions required for access openings*

EN 1009-1:2020, *Machines for mechanical processing of minerals and similar solid materials — Safety — Part 1: Common requirements for machinery and processing plants*

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

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

EN ISO 14122-1:2016, *Safety of machinery — Permanent means of access to machinery — Part 1: Choice of fixed means and general requirements of access (ISO 14122-1:2016)*

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)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100:2010, EN 1009-1:2020 and the following apply.

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

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

NOTE Annex A shows examples of screening machinery.

3.1 screening machinery

stationary or mobile machinery that separates industrial mineral by-products into two or more fractions by dry or wet process through use of a *screen* (3.2)

Note 1 to entry: Screening machinery can be installed in a plant, a modular machinery or a mobile machine, as defined in EN 1009 1:2020, 3.1 to 3.3 and illustrated in Annex B.

3.2 screen

one of the following machines: *vibrating screen* (3.3), *roller screen* (3.4) or *tumbler screening machine* (3.5)

3.3 vibrating screen

screen (3.2) oscillated either by hydraulical, mechanical or electrical means for scalping and separation

[SOURCE: ISO 9045:1990, 3.2.38, modified by adding "hydraulical means"]

3.4 roller screen roll screen

screen (3.2) consisting of a number of horizontal rotating shafts, fitted with elements arranged to provide screening apertures for scalping and separation

Note 1 to entry: This may be a wobbler screen, a star screen, disk screen or other type of screen with rollers rotating in the same direction.

[SOURCE: ISO 1213-1:1993, 4.5.8]