SLOVENSKI STANDARD
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Stroji za mehansko obdelavo mineralov in podobnih trdnih snovi - Varnost - 4. del: Posebne zahteve za presejalne stroje

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

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

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

Ta slovenski standard je istoveten z: **prEN 1009-4**

ICS:

73.120	Oprema za predelavo rudnin	Equipment for processing of minerals
91.220	Gradbena oprema	Construction equipment

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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 matières solides similaires - Sécurité - Partie 4 : Prescriptions spécifiques aux machines de calibrage

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This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 151.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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European foreword

This document (prEN 1009-4:2017) 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 document is currently submitted to the CEN Enquiry.

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.

prEN 1009 "Machines for mechanical processing of minerals and similar solid materials — Safety" comprises the following parts:

Part 1: Common requirements for partly completed 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 and semi-mobile crushing and screening equipment

Introduction

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

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 part of prEN 1009, to be used together with prEN 1009-1, 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 part of prEN 1009 are different from those which are stated in prEN 1009-1, the requirements of this part of prEN 1009 take precedence over the requirements of prEN 1009-1 for machines that have been designed and built according to the provisions of this part of prEN 1009.

This part of prEN 1009, together with prEN 1009-1, 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 Clause 4).

NOTE 1 EN 13309 specifies test methods and acceptance criteria for evaluating the electromagnetic compatibility of all kind of mobile construction machinery.

NOTE 2 Specific requirements related to road traffic regulations (e.g. lighting, dimensions, speed limit plate) are not taken into account in this standard.

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, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 349:1993+A1:2008, *Safety of machinery — Minimum gaps to avoid crushing of parts of the human body*

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*

prEN 1009-1:2017, *Machines for mechanical processing of minerals and similar solid materials — Safety — Part 1: — Common requirements for partly completed machinery and processing plants*

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

EN ISO 13857:2008, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857:2008)*

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

EN ISO 14122 (series), *Safety of machinery — Permanent means of access to machinery*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100, prEN 1009-1:2017 and the following apply.

3.1
vibrating screen
screen oscillated either by mechanical or by electrical means for scalping and separation

[SOURCE: ISO 9045:1990]

3.2
roller screen
roll screen
screen 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]

3.3
screening machinery
machinery that separates industrial mineral by-products into two or more fraction by dry or wet process

3.4
Tumbler screening Machine
Tumbler screen:
screening machine with a three dimensional eccentric motion with a radial and tangential inclination

Note 1 to entry: Basically this type of machine is used to screen for fine and ultra-fine products.

4 List of significant hazards

This clause contains all the significant hazards, hazardous situations and events common to the different types of machines in the scope and also the hazards due to the assembly of different machines into a plant, identified by risk assessments significant for this type of machinery and which require action to eliminate or reduce the risk.

Table 1 — List of significant hazards, hazardous situation or hazardous events

Nbr [a]	Hazard, hazardous situation or hazardous event	Origin	Clause/subclause of this document
1	**Mechanical hazards due to:**		
1.1	Crushing hazard	Drum rotating	5.3.3
		Interaction between fix and moving part	5.3.2, 5.3.3, 5.3.4
		Material blockage	5.3.4, 5.3.5
		Open space created by screen chute opening Means of access	5.1

Nbr [a]	Hazard, hazardous situation or hazardous event	Origin	Clause/subclause of this document
		Vibration of the machine	5.1
		Wrong warning sign	5.1, 5.3.2
1.2	Shearing hazard	Interaction between fix and moving part	5.3.2, 5.3.3, 5.3.4
		Material blockage	5.3.4, 5.3.5
		Open space created by screen chute opening Means of access	5.1
		Wrong warning sign	5.1, 5.3.2, 5.3.2
1.3	Cutting or severing hazard	Interaction between fix and moving part	5.3.2, 5.3.3, 5.3.4
		Material blockage	5.3.4, 5.3.5
		Open space created by screen chute opening Means of access	5.1
		Wrong warning sign	5.1, 5.3.2
1.4	Entanglement hazard	Drum rotating	5.3.3
		Material blockage	5.3.4, 5.3.5
		Wrong warning sign	5.1
1.5	Drawing-in or trapping hazard	Open space created by screen chute opening Means of access	5.1
		Wrong warning sign	5.1
1.6	Impact hazard	Drum rotating	5.3.3
		Interaction between fix and moving part	5.3.2, 5.3.3, 5.3.4
		Material blockage	5.3.4, 5.3.5
		Open space created by screen chute opening Means of access	5.1
		Wrong warning sign	5.1, 5.3.2
5	**Hazards generated by vibration**		
5.2	Whole body vibration, particularly when combines with poor postures	Vibration of the machine	5.1
		Working near the screen when machine is running (inspection)	5.2.2, 5.2.4
		Wrong warning sign	5.3.2

Nbr [a]	Hazard, hazardous situation or hazardous event	Origin	Clause/subclause of this document
7	**Hazards generated by materials and substances (and their constituent elements) processed or used by the machinery**		
7.1	Hazards from contact with or inhalation of harmful fluids, gases, mists, fumes, and dusts	Working near the screen when machine is running (inspection)	5.2.2, 5.2.4
		Working outside or inside the machine when the machine is stopped	5.2.3, 5.2.4
		Wrong warning sign	5.1, 5.3.2
8	**Hazards generated by neglecting ergonomic principles in machinery design as e.g. hazards from:**		
8.1	Unhealthy postures or excessive effort	Heavy panel	5.3.1
		Open space created by screen chute opening Means of access	5.1
		Small working space	7.1.1
		Working near the screen when machine is running (inspection)	5.2.2, 5.2.4
		Working outside or inside the machine when the machine is stopped	5.2.3, 5.2.4
8.2	Inadequate consideration of hand-arm or foot-leg anatomy	Open space created by screen chute opening Means of access	5.1
		Small working space	7.1.1
		Working near the screen when machine is running (inspection)	5.2.2, 5.2.4
		Working outside or inside the machine when the machine is stopped	5.2.3, 5.2.4
8.3	Neglected use of persona! protection equipment	Small working space	7.1.1
		Working near the screen when machine is running (inspection)	5.2.2, 5.2.4
		Working outside or inside the machine when the machine is stopped	5.2.3, 5.2.4
8.5		Heavy panel	5.3.1

Nbr [a]	Hazard, hazardous situation or hazardous event	Origin	Clause/subclause of this document
	Mental overload and underload, stress	Working near the screen when machine is running (inspection)	5.2.2, 5.2.4
		Working outside or inside the machine when the machine is stopped	5.2.3, 5.2.4
8.6	Human error, human behaviour	Working near the screen when machine is running (inspection)	5.2.2 et 5.2.4
		Working outside or inside the machine when the machine is stopped	5.2.3, 5.2.4
8.8	Inadequate design or location of visual display units	Wrong warning sign	5.1
11	**Impossibility of stopping the machines in the best possible conditions**	Drum rotating	5.3.3
17	**Falling or ejected objects or fluids**	Material blockage	5.3.4, 5.3.5, 7.1.2
		Material projection	5.3.5
		Wrong warning sign	5.3.2
18	**Loss of stability/overturning of machinery**	Drum rotating	5.3.3
		Heavy panel	5.3.1
		Material blockage	5.3.4, 5.3.5
		Open space created by screen chute opening Means of access	5.1
		Small working space	7.1.1
		Vibration of the machine	5.1
		Working near the screen when machine is running (inspection)	5.2.2, 5.2.4
		Working outside or inside the machine when the machine is stopped	5.2.3, 5.2.4
19	**Slip, trip and fall of persons (related to machinery)**	Drum rotating	5.3.3
		Heavy panel	5.3.1
		Material blockage	5.3.4, 5.3.5
		Open space created by screen chute opening	5.1