# SLOVENSKI STANDARD
# oSIST prEN 1009-2:2018

**01-januar-2018**

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**Stroji za mehansko obdelavo mineralov in podobnih trdnih snovi - Varnost - 2. del: Posebne zahteve za nakladalne stroje in opremo za kontinuirni transport**

Machines for mechanical processing of minerals and similar solid materials - Safety - Part 2: Specific requirements for feeding machinery and continuous handling equipment

Maschinen für die mechanische Aufbereitung von Mineralien und ähnlichen festen Stoffen - Sicherheit - Teil 2: Spezifische Anforderungen für Aufgabemaschinen und Stetigförderer

Machines pour le traitement mécanique des minéraux et des matériaux solides similaires - Sécurité - Partie 2 : Prescriptions spécifiques pour les machines d'alimentation et équipements de manutention continue

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**Ta slovenski standard je istoveten z:** **prEN 1009-2**

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**ICS:**

| | | |
|---|---|---|
| 13.110 | Varnost strojev | Safety of machinery |
| 73.120 | Oprema za predelavo rudnin | Equipment for processing of minerals |
| 91.220 | Gradbena oprema | Construction equipment |

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# DRAFT
# prEN 1009-2

October 2017

ICS 73.120; 91.220

English Version

# Machines for mechanical processing of minerals and similar solid materials - Safety - Part 2: Specific requirements for feeding machinery and continuous handling equipment

Machines pour le traitement mécanique des minéraux et des matières solides similaires - Sécurité - Partie 2 : Prescriptions spécifiques pour les machines d'alimentation et équipements de manutention continue

Maschinen für die mechanische Aufbereitung von Mineralien und ähnlichen festen Stoffen - Sicherheit - Teil 2: Spezifische Anforderungen für Aufgabemaschinen und Stetigförderer

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

If this draft becomes a European Standard, 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.

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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 1009-2:2017) 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*

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# 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.

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# 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 feeding machinery and continuous handling equipment for the mechanical processing in quarrying, recycling and processing mineral and by-products. 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 feeding 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 part of prEN 1009 is not applicable to feeding machinery which are manufactured before the date of publication of this document by CEN.

# 2 Normative references

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The following referenced documents are indispensable for the application 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 618:2002+A1:2010, *Continuous handling equipment and systems — Safety and EMC requirements for equipment for mechanical handling of bulk materials except fixed belt conveyors*

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EN 620:2002+A1:2010, *Continuous handling equipment and systems — Safety and EMC requirements for fixed belt conveyors for bulk materials*

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 61800-5-2, *Adjustable speed electrical power drive systems — Part 5-2: Safety requirements – Functional (IEC 61800-5-2)*

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

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

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

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## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100, prEN 1009-1:2017, EN 618, EN 620 and the following apply.

**3.1**
**apron feeder**
feeder that transfers material on an apron conveyor typically made up of multiple steel assemblies with a depth of material and/or speed of conveyor determining the feed rate

**3.2**
**belt feeder**
shortened form of belt conveyor, normally running at slow speed, designed to extract or control the rate of flow of bulk materials from hoppers

[SOURCE: EN 620:2002+A1:2010, 3.2.4]

**3.3**
**reciprocating table feeder**
**reciprocating plate feeder**
feeder composed of a horizontal or declined tray or trough to which reciprocating motion is imparted usually by crank shaft or hydraulic cylinder which is fed when the tray is moving backwards and material slides off in the front

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**3.4**
**vibrating feeder**
**shaking feeder**
feeder that uses vibration as the main means to “feed” material to a process or machine

**3.5**
**screw conveyor**
**screw feeder**
conveyor for loose bulk materials with a trough or tube as the carrying medium, the material being moved by the action of a rotating screw. This screw can be rigid or flexible to take curves

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[SOURCE: EN 618:2002+A1:2010, 3.1.4]

**3.6**
**roller grizzly feeder**
**grizzly feeder**
feeder separating oversized material preventing fine material from entering the crusher and/or further process

**3.7**
**blade feeder**
feeder using blades to position material from a 3D point of view

**3.8**
**bucket elevator**
elevator for loose bulk materials with buckets as the carrying medium attached to a belt or chains as the driving medium

[SOURCE: EN 618:2002+A1:2010, 3.1.3]

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## 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.

NOTE Risks which apply to specific types of machines are specified in prEN 1009-2:2017 to −4:2017, Clause 4.

**Table 1 — List of significant hazards**

| No. [a] | Hazard, hazardous situation or hazardous event | Origin | Clause/ subclause of this document |
|---|---|---|---|
| **1** | **Mechanical hazards due to:** | Falling of the machine when operator is nearby | 5.7 |
| 1.1 | Crushing hazard | Enter into the feeder to remove the blockage | 5.1.2 |
| | | Transmission not guarded | 5.3.1, 5.4.3 |
| | | Uncontrolled movement of the plate | 5.3.2 |
| | | Uncontrolled movement of the apron | 5.4.2 |
| | | Transmission not controlled by interlocking guards | 5.8.2 |
| | | Access to the nip point | 5.8.3 |
| | | Contact with the wheel | 5.8.4 |
| | | Contact with rotating parts | 5.8.6 |
| | | Feed/discharge material spillage in case of severe wear in the area of feed/discharge arrangement | 7.1 |
| 1.2 | Shearing hazard | Enter into the feeder to remove the blockage | 5.1.2 |
| | | Transmission not guarded | 5.3.1, 5.4.3 |
| | | Uncontrolled movement of the plate | 5.3.2 |
| | | Uncontrolled movement of the apron | 5.4.2 |
| | | Transmission not controlled by interlocking guards | 5.8.2 |
| | | Access to the nip point | 5.8.3 |
| | | Contact with the wheel | 5.8.4 |

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| No. [a] | Hazard, hazardous situation or hazardous event | Origin | Clause/ subclause of this document |
|---|---|---|---|
| | | Contact with rotating parts | 5.8.6 |
| | | Feed/discharge material spillage in case of severe wear in the area of feed/discharge arrangement | 7.1 |
| 1.3 | Cutting or severing hazard | Enter into the feeder to remove the blockage | 5.1.2 |
| | | Uncontrolled movement of the plate | 5.3.2 |
| | | Uncontrolled movement of the apron | 5.4.2 |
| | | Access to the nip point | 5.8.3 |
| | | Contact with the wheel | 5.8.4 |
| | | Contact with rotating parts | 5.8.6 |
| | | Feed/discharge material spillage in case of severe wear in the area of feed/discharge arrangement | 7.1 |
| 1.4 | Entanglement hazard | Transmission not guarded | 5.3.1, 5.4.3 |
| | | Uncontrolled movement of the plate | 5.3.2 |
| | | Uncontrolled movement of the apron | 5.4.2 |
| | | Transmission not controlled by interlocking guards | 5.8.2 |
| | | Access to the nip point | 5.8.3 |
| | | Contact with the wheel | 5.8.4 |
| | | Contact with rotating parts | 5.8.6 |
| 1.5 | Drawing-in or trapping hazard | Transmission not controlled by interlocking guards | 5.8.2 |
| | | Access to the nip point | 5.8.3 |
| | | Contact with rotating parts | 5.8.6 |
| 1.6 | Impact hazard | Enter into the feeder to remove the blockage | 5.1.2 |
| | | Transmission not controlled by interlocking guards | 5.8.2 |

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