



SLOVENSKI STANDARD
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Glavni namen tega standarda je opredeliti zahteve za varnost strojev za izdelavo gradbenih izdelkov iz betona in kalsandsteinov - del 2: Stroji za izdelavo blokov.

Machines for the manufacture of constructional products from concrete and calcium-silicate - Safety - Part 2: Block making machines

Maschinen für die Herstellung von Bauprodukten aus Beton und Kalksandsteinmassen - Sicherheit - Teil 2: Steinformmaschinen

Machines pour la fabrication de produits de construction en béton et silico-calcaire - Sécurité - Partie 2: Machines à blocs

<https://standards.iteh.ai/catalog/standards/sist/04c6ff60-e768-4c9a-b1a1-385b66a9e922/sist-en-12629-2-2004>

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EUROPEAN STANDARD

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English version

Machines for the manufacture of constructional products from concrete and calcium-silicate - Safety - Part 2: Block making machines

Machines pour la fabrication de produits de construction en béton et silico-calcaire - Sécurité - Partie 2: Machines à blocs

Maschinen für die Herstellung von Bauprodukten aus Beton und Kalksandsteinmassen - Sicherheit - Teil 2: Steinformmaschinen

This European Standard was approved by CEN on 1 November 2002.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

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Foreword

This document (EN 12629-2:2002) 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 June 2003, and conflicting national standards shall be withdrawn at the latest by June 2003.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EC Directive(s).

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

The series "Machines for the manufacture of constructional products from concrete and calcium-silicate - Safety" consists of following parts :

- Part 1 : Common requirements
- Part 2 : Block making machines
- Part 3 : Slide and turntable machines
- Part 4 : Concrete roof tile making machines
- Part 5.1 : Concrete pipe machines manufacturing in the vertical axis.
- Part 5.2 : Concrete pipe machines manufacturing in the horizontal axis
- Part 5.3 : Pipe prestressing machines
- Part 5.4 : Concrete pipe coating machines
- Part 6 : Stationary and mobile equipment for the manufacture of precast reinforced products
- Part 7 : Stationary and mobile equipment for the benched manufacture of prestressed products
- Part 8 : Machines and equipment for the manufacture of constructional products from calcium silicate (and concrete)

Annexes A and B are informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

EN 12629-2:2002 (E)**Introduction**

This European Standard is a Type C-standard as stated in EN 1070.

The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this standard.

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.

Reference to pertinent standards mentioned above is made where requirements of such standards are relevant.

1 Scope

1.1 This European Standard applies to machines for the manufacture of blocks, kerbs, paving stones and similar concrete products.

1.2 This European Standard deals with all significant hazards pertinent to these machines, when they are used as intended under the conditions foreseen by the manufacturer (see clause 4). This European Standard specifies the appropriate technical measures to eliminate or reduce risks arising from the significant hazards.

1.3 This European Standard applies to the machines from the point at which the mixture enters the machine (see point 1-2 of annex B) and the point where the pallet boards are brought to the assembly (see point 3 of annex B) until the point where the green products are removed from the machine assembly to the curing system (see point 4 of annex B).

1.4 This European standard does not cover those requirements for reducing hazards from mechanical, electrical, pneumatic, hydraulic or other equipment or machinery that are dealt with in standards for their common use (Type A, B1 and B2 standards).

1.5 This European Standard deals with the hazards other than noise hazards¹⁾ listed in clause 4 which can arise during the operation and maintenance, including the interfaces, of the block making machines, when carried out in accordance with the specifications given by the manufacturer or his authorised representative.

NOTE 1 Amendment is under preparation to deal with noise, in particular for measures to reduce noise at source and a noise test code including noise declaration.

NOTE 2 Interfaces between the block making machines and others of the installation are dealt with in EN 12629-1:2000 (subclause 7.2).

This standard establishes safety requirements and/or methods of protection which apply to these machines.

1.6 The provisions stated in this standard assume that all operators have been adequately informed and trained.

1) Until a noise test code (dealing with the measurement and declaration of noise emission values) specific to the machines covered by this part is available to complement the requirements of 5.7.2 and 7.4.2 of EN 12629-1:2000, it cannot be considered that noise hazards are covered.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 292-1, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology.*

EN 292-2, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles and specifications.*

EN 1070:1998, *Safety of machinery — Terminology.*

EN 12629-1:2000, *Machines for the manufacture of constructional products from concrete and calcium-silicate — Safety — Part 1: Common requirements.*

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 1070:1998 apply.

Additional definitions found in EN 12629-1:2000 and those given below also apply to this standard.

NOTE: See also annex B for terminology of a typical block making machine.

3.1

drawing box

container having the shape of a box with an open or movable bottom. The drawing box fills the mould with the mixture

3.2

drawing box grid

machine element which is placed at the bottom of the drawing box. It consists of bars specially designed so as to assist a uniform supply of fresh concrete into the mould. The grid can be loose, fixed or movable with respect to the drawing box

3.3

feed hopper

device that contains the mixture which is transported to the drawing box by a discharge gate or a dosing belt

3.4

draw plate

integral system which is part of the assembly of the machine

It is placed between the mould and the pallet board. It is designed to :

- provide the surface condition of the underside of the products ;
- produce profiles to the underside of the product.

3.5

vibration table

equipment located beneath the mould and mounted on flexible suspension and features vibrators. Vibration is transmitted to the mould via the pallet board

EN 12629-2:2002 (E)**3.6****internal pallet board transfer mechanism**

device that feeds empty pallet boards beneath the mould and discharges the fresh products

3.7**tamper cleaning device**

device that automatically moves transversally to clean the moulding part of the tamper between two lots

3.8**face mix filling device**

part of a machine consisting of a frame, a hopper and a drawing box which can be connected to or removed from the main machine frame

3.9**pallet board**

wooden, metal or other material support placed during manufacturing between the vibrating table and the mould to form the base thus permitting, after mould release, transport of green products to the curing chambers

3.10**tamper**

removable tooling element that forms the upper part of the mould. It is intended to :

- assist the compacting of concrete by compression ;
- form the upper part of the products.

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4 List of significant hazards (standards.iteh.ai)

This clause contains all hazards, as far as they are dealt with in this European Standard, identified by risk assessments significant for this type of machinery and which require action to eliminate or reduce risk.

Before using this standard, it is important for the manufacturer to carry out a risk assessment of the block-making machine to check that it has the hazards identified in this clause.

4.1 Mechanical hazards (see informative annex B)

Annex B (informative) illustrates an example of a common machine type.

In accordance with clause 5 of EN 12629-1:2000 the hazard zones, marked 1-8 at annex A of this standard, are described in the following table (see also 4.1.1 to 4.1.6 for detailed mechanical hazards).

Table 1 — Mechanical hazards and hazard zones

Hazard zones	Hazards	See subclauses
1	Crushing Shearing Cutting or severing	4.1.1 4.1.2 4.1.3
2	Shearing Cutting or severing	4.1.2 4.1.3
3	Shearing Cutting or severing	4.1.2 4.1.3
4	Crushing	4.1.1
5	Entanglement	4.1.4
6	Crushing Cutting or severing	4.1.1 4.1.3
7	Shearing Cutting or severing Entanglement	4.1.2 4.1.3 4.1.4
8	Cutting or severing	4.1.3
Equipment	High pressure	4.1.5
Floor	Slip, trip or fall	4.1.6
Around the machine	Vibration	4.3

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4.1.1 Crushing hazards <https://standards.iteh.ai/catalog/standards/sist/04c6ff60-e768-4c9a-b1a1-385b66a9e922/sist-en-12629-2-2004>

Between the drawing box(es) and the dosing device and fixed parts of the machine assembly (see hazard zone 6, annex A).

Between one of the fixed parts of the machine and the sheet pulling device (see hazard zone 4, annex A).

In the event of gravity drop of the support cross member, of the mould or of the attaching parts of the mould during action of personnel with the machine which is at a stop (see hazard zone 1, annex A).

4.1.2 Shearing hazards

Between the mould and the fixed parts of the machine assembly (see hazard zone 1, annex A).

Between the inner mould and the outside mould (see hazard zone 1, annex A).

Between the tamper support crossbeam and the hopper or the fixed parts of the machine (see hazard zone 2, annex A).

Between the tamper and the tamper support crossbeam and the mould (see hazard zone 1, annex A). In the internal transfer of the machine pallet boards (see hazard zone 3, annex A).

Between the synchronisation parts of the mould or the tamper and the fixed parts of the machine (see hazard zone 5, annex A).

Between the drawing box(es) and its (their) grid (see hazard zone 7, annex A).