SLOVENSKI STANDARD
SIST EN 12629-5-2:2004+A1:2010

01-december-2010

Stroji za izdelavo gradbenih proizvodov iz betona in apnenega peščenca - Varnost - 5-2. del: Stroji za izdelavo cevi po vodoravni osi

Machines for the manufacture of constructional products from concrete and calcium-silicate - Safety - Part 5-2: Pipe making machines manufacturing in the horizontal axis

Maschinen für die Herstellung von Bauprodukten aus Beton und Kalksandsteinmassen - Sicherheit - Teil 5-2: Beton-Rohrmaschinen mit Fertigung in horizontaler Lage

Machines pour la fabrication de produits de construction en béton et silico-calcaire - Sécurité - Partie 5-2: Machines pour la fabrication de tuyaux dans l'axe horizontal

Ta slovenski standard je istoveten z: EN 12629-5-2:2003+A1:2010

ICS:

91.220	Gradbena oprema	Construction equipment

SIST EN 12629-5-2:2004+A1:2010 en,fr

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 12629-5-2:2003+A1

September 2010

ICS 91.220

Supersedes EN 12629-5-2:2003

English Version

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This European Standard was approved by CEN on 3 November 2003 and includes Amendment 1 approved by CEN on 5 August 2010.

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Ref. No. EN 12629-5-2:2003+A1:2010: E

Contents

Foreword

This document (EN 12629-5-2:2003+A1:2010) 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of an identical text or by endorsement, at the latest by March 2011, and conflicting national standards shall be withdrawn at the latest by March 2011.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document includes Amendment 1, approved by CEN on 2010-08-05.

This document supersedes EN 12629-5-2:2003.

The start and finish of text introduced or altered by amendment is indicated in the text by tags ▌A1⟩ ⟨A1▌.

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 EU Directive(s).

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

▌A1⟩ 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 rooftile 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). ⟨A1▌

▌A1⟩ *deleted text* ⟨A1▌

According to the CEN/CENELEC Internal Regulations, the national standards organizations 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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Introduction

[A1] This European Standard is a Type C-standard as stated in EN ISO 12100.

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

When provisions of this type C document are different from those, which are stated in type A or B documents, the provisions of this type C document take precedence over the provisions of the other documents, for machines that have been designed and built according to the provisions of this type C document.

This document specifies the additional requirements to and/or the deviations from EN 12629-1:2000+A1:2010 specific for the pipe making machines manufacturing in the horizontal axis as described in 1.1.

With the aim of clarifying the intentions of the document it should be noticed that the following assumptions were made when producing it:

— specific conditions of use or environmental conditions out of the scope of the document shall be the subject of negotiations between the manufacturer and the user/owner,

— the equipment will only be used by competent and designated persons,

— the place of use/installation is adequately lit,

— all operations are carried out by specially trained operators. [A1]

1 Scope

1.1 [A1] This part of EN 12629, taken together with EN 12629-1:2000+A1:2010, applies to machines for the manufacture of pipes in the horizontal axis and similar elements from concrete.

EN 12629-1:2000+A1:2010 specifies general requirements applicable to machines for the manufacture of constructional products from concrete and calcium–silicate.

This document specifies the additional requirements to and/or the deviations from EN 12629-1:2000+A1:2010 specific to the machines it covers. [A1]

1.2 [A1] This European Standard deals with all significant hazards pertinent to these machines, when they are used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer (see Clause 4). This European Standard specifies the appropriate technical measures to eliminate or reduce risks arising from the significant hazards. [A1]

[A1] *deleted text* [A1]

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

1.3 This European standard applies to the pipe making machines manufacturing in horizontal axis which may form an integral part of a pipe making process plant.

1.4 [A1] This document is not applicable to pipe making machines manufacturing in the horizontal axis, which are manufactured before the date of publication of this document by CEN. [A1]

2 Normative references

[A1] 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 1050:1996, *Safety of machinery — Principle for risk assessment*

EN 12629-1:2000+A1:2010, *Machines for the manufacture of constructional products from concrete and calcium-silicate — Safety — Part 1: Common requirements*

EN ISO 12100-1:2003, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology (ISO 12100-1:2003)*

EN ISO 12100-2:2003, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles (ISO 12100-2:2003)* [A1]

3 Terms and definitions

[A1] For the purposes of this document, the terms and definitions given in EN ISO 12100-1:2003, EN 12629-1:2000+A1:2010 and the following apply. [A1]

3.1
pipe
hollow body manufactured from concrete which may or may not contain reinforcing material and predominantly used in conjunction with other concrete pipes to convey liquids.

[A1] (See also EN 12629-1:2000+A1:2010, 3.1.7) [A1]

3.2
pipe making machine
machine which fabricates pipes and similar elements primarily by spinning the pipe mould

3.3
machine elements of pipe making machines manufacturing in horizontal axis

3.4
spinning machine
machine used to produce pipes or similar products in concrete. It generates a centrifugal force necessary to compact mixture on mould internal surface (See Figure A.1)

3.5
mobile compacting roller
mobile part of the spinning machine set up on two supports moved by two jacks. It compacts the mixture during the filling phase inside the mould and calibrates the pipe

3.6
vibrating rollers
notched rollers which push against the mould during its rotation, making concrete vibrate inside the mould

3.7
mould
equipment consisting of: two outer separable shells or one mould that can be opened; flanges on both ends; rolling rings

[A1] (See EN 12629-1:2000+A1:2010, 3.2) [A1]

NOTE In that case, it is cylindrical (e. g. pipes) or conical (e. g. poles).

3.8
mobile feeder
mobile device which feeds and distributes the mixture within the mould during the production phases moving on fixed rails

3.9
fixed hopper
equipment which is integral with the pipe making machine for the receiving and transfer of the mixture to the mobile feeder

4 List of significant hazards

[A1] In accordance with Clause 4 of EN 12629-1:2000+A1:2010 the hazard zones described in the following table are illustrated in Annex B. [A1]

Table 1 — Spinning machine – List of hazards and hazardous situations.

List of hazards as per annex A of EN 1050:1996	List of hazards and hazardous situations	HAZARD ZONES (See Informative annex B, Figure B.1)
1 Mechanical hazards		
1.1 Crushing hazards	– Between the mobile feeder and the hopper or fixed structures	1
	– Between compacting roller and mould	3
	– Between mould and spinning machine	3
1.2 Shearing hazards	– Between mobile feeder wheels and rails	1
	– Between spinning machine wheels and mould	3
	– Between mould and vibrating rollers	3
	– Between the Archimedean screw and the fixed hopper	2
1.3 Cutting and severing hazards	–	-
1.4 Entanglement hazards	– In the whole area of spinning machine rotation	3
	– In the motor transmission of the Archimedean screw	2
	– In the motor transmission of the spinning machine	4
1.5 Drawing in - or trapping hazards	– Between mobile feeder and fixed hopper	1
	– In the mobile feeder translation area	1
	– In the whole area of mould rotation	3
	– In the transmission from electric motor to spinning machine	4
1.8 Friction or abrasion hazards	– In contact with the feeding belt	1
	– In contact with the spinning machine rotating parts	3
4 Noise hazards	– From noise generated by vibrating rollers in contact with the mould while compacting concrete in the mould itself	5
7.1 Hazards from materials used Contact and inhalation	– Exit of small quantities of concrete from the mould during the filling phase	3