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Stroji za izdelavo gradbenih proizvodov iz betona in apnenega peščenca - Varnost - 7. del: Nepremična in premična oprema za izdelavo elementov iz prednapetega betona

Machines for the manufacture of constructional products from concrete and calcium-silicate - Safety - Part 7: Stationary and mobile equipment for long line manufacture of prestressed products

Maschinen für die Herstellung von Bauprodukten aus Beton und Kalksandsteinmassen - Sicherheit - Teil 7: Stationäre und fahrbare Einrichtungen für die Herstellung von Spannbetonelementen

Machines pour la fabrication de produits de construction en béton et silico-calcaire - Sécurité - Partie 7: Equipements fixes et mobiles pour la fabrication sur bancs de produits en béton précontraint

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**Machines for the manufacture of constructional products from
concrete and calcium-silicate - Safety - Part 7: Stationary and
mobile equipment for long line manufacture of prestressed
products**

Machines pour la fabrication de produits de construction en
béton et silico-calcaire - Sécurité - Partie 7: Equipements
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und Kalksandsteinmassen - Sicherheit - Teil 7: Stationäre
und fahrbare Einrichtungen für die Herstellung von
Spannbetonelementen

This draft amendment is submitted to CEN members for unique acceptance procedure. It has been drawn up by the Technical Committee CEN/TC 151.

This draft amendment A1, if approved, will modify the European Standard EN 12629-7:2004. If this draft becomes an amendment, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration.

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Foreword

This document (EN 12629-7:2004/FprA1:2010) 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 document is currently submitted to the Unique Acceptance Procedure.

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 Annexes ZA and ZB, which are integral parts of this document.

EN 12629-7:2004/FprA1:2010 (E)**1 Modifications to the Foreword**

Replace the 4th paragraph with the following:

"For relationship with EU Directive(s), see informative Annexes ZA and ZB, which are integral parts of this document."

Delete the 5th paragraph.

Replace the 6th paragraph with the following:

"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)."

Delete the 7th and 8th paragraphs.

2 Modifications to the Introduction

First paragraph, update the reference as follows:

Replace "EN 1070:1998" with "EN ISO 12100".

Fourth paragraph, update the reference as follows:

Replace "EN 12629-1" with "EN 12629-1:2000+A1".

3 Modifications to Clause 1 (Scope)

Sub-clause 1.1, replace the existing text with the following:

1.1 "This part of EN 12629, taken together with EN 12629-1:2000+A1, applies to stationary and mobile equipment for the benched manufacture of prestressed products. The manufacturing bed is a machine with which other associated machines work simultaneously. Moreover, these machines are generally used on beds installed in parallel.

EN 12629-1:2000+A1 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 specific to the machines it covers."

Sub-clause 1.2, add the following text at the end:

"The handling of the cut wires and their placement on beds is not covered by the present standard."

Sub-clause 1.3, replace the existing text with the following:

1.3 "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."

Sub-clause 1.4, update the reference as follows:

Replace "EN 12629-1:2000" with "EN 12629-1:2000+A1:2010".

Delete sub-clause 1.5.

Renumber sub-clause 1.6 into $\boxed{A_1}$ 1.5 $\boxed{A_1}$.

EN 12629-7:2004/FprA1:2010 (E)**4 Modifications to Clause 2 (Normative references)**

Replace the existing text with the following:

"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 349:1993, *Safety of machinery — Minimum gaps to avoid crushing of parts of the human body*

EN 457, *Safety of machinery — Auditory danger signals — General requirements, design and testing (ISO 7731:1986, modified)*

EN 842, *Safety of machinery — Visual danger signals — General requirements, design and testing*

EN 953:1997, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards*

EN 954-1:1996, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design*

EN 982, *Safety of machinery — Safety requirements for fluid power systems and their components — Hydraulics*

EN 1050:1996, *Safety of machinery — Principles for risk assessment*

EN 1088, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection*

EN 1093 (all parts), *Safety of machinery — Evaluation of the emission of airborne hazardous substances*

EN 1760-2, *Safety of machinery — Pressure sensitive protective devices — Part 2: General principles for the design and testing of pressure sensitive edges and pressure sensitive bars*

EN 13862:2001, *Floor cutting-off machines — Safety*

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

EN 60204-1, *Safety of machinery - Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2005, modified)*

EN 60529, *Degrees of protection provided by enclosures (IP code) (IEC 60529:1989)*

EN ISO 3457, *Earth-moving machinery — Guards — Definitions and requirements (ISO 3457:2003)*

EN ISO 7731:2008, *Ergonomics — Danger signals for public and work areas — Auditory danger signals (ISO 7731:2003)*

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 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)*

EN ISO 13732-1:2008, *Ergonomics of the thermal environment — Methods for the assessment of human responses to contact with surfaces — Part 1: Hot surfaces (ISO 13732-1:2006)*

EN ISO 14122-1:2001, *Safety of machinery — Permanent means of access to machinery — Part 1: Choice of fixed means of access between two levels (ISO 14122-1:2001)*

EN ISO 14122-2:2001, *Safety of machinery — Permanent means of access to machinery — Part 2: Working platforms and gangways (ISO 14122-2:2001)*

EN ISO 14122-3:2001, *Safety of machinery — Permanent means of access to machinery — Part 3: Stairways, stepladders and guard-rails (ISO 14122-3:2001)*

EN ISO 14122-4:2004, *Safety of machinery — Permanent means of access to machinery — Part 4: Fixed ladders (ISO 14122-4:2004)*"

5 Modifications to Clause 3 (Terms and definitions)

First and second paragraphs, replace the existing text with the following:

"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."

6 Modifications to Clause 4 (List of significant hazards)

Delete the second paragraph.

Fourth paragraph, update the references as follows:

Replace "EN 12629-1:2000" with "EN 12629-1:2000+A1:2010".

7 Modifications to Clause 5 (Safety requirements and/or measures)

Replace the headline with the following:

"Safety requirements and/or protective measures"

First paragraph:

Add a new sub-clause "5.1 Introduction" and replace the text with the following:

"Machinery shall comply with the safety requirements and/or protective measures of this clause and, unless otherwise specified in this standard, with the relevant requirements of EN 12629-1:2000+A1. In addition, the machine shall be designed according to the principles of EN ISO 12100 for hazards relevant but not significant, which are not dealt with by this document.

NOTE For hazards which are to be reduced by the application of an A or B-level standard such as EN 349, EN 547, EN 614-1, EN 894, EN 953, EN 1088, EN ISO 7731, EN ISO 13850, EN ISO 13857, EN ISO 14122-1, and for hydraulic, pneumatic or other machinery dealt with in standards for common uses, the manufacturer should carry out a risk assessment to establish the requirements of the A or B-level or other standard which are to be applied. This specific risk assessment should be part of the general risk assessment of the machine.

Where it is known that the installation site already contains elements that can be considered as risk reduction means, the design of the machine may take these elements into consideration (see also Clause 7)."

Renumber all subsequent sub-clauses.

EN 12629-7:2004/FprA1:2010 (E)

Sub-clauses 5.1.1, 5.2.2, 5.2.3 5.3 (3 occurrences), 5.4, 5.5.1.3.1, 5.5.1.3.2, 5.5.1.3.3, 5.5.2.1.1, 5.5.2.1.2a), 5.5.2.1.5 (4th dash), 5.5.2.2.1(2nd dash), 5.5.2.2.2 (1st dash), 5.5.2.2.4 (4th and 7th dashes), update as follows:

Replace "EN 12629-1:2000" with "EN 12629-1:2000+A1:2010".

Sub-clause 5.4, 1st dash, replace "EN 563" with "EN ISO 13732-1".

Sub-clause 5.5.2.1.3 update as follows:

Replace "EN 457" with "EN ISO 7731".

Sub-clause 5.6.1.3.2, last paragraph, replace "EN 811:1996" with "EN ISO 13857:2008".

Sub-clause 5.6, replace Table 8 to Table 14 with the following:

"

Table 8 — Safety measures for pre-stressing bed, fixed or mobile tensioning equipment and self stressing bed (see annex A)

Hazards zones as per Figures A.1 and A.3	Hazards	Localisation/scenario	References Table 1	Safety requirements	
				See Clause 5 of EN 12629-1:2000+A1:2010	See specified clauses of EN 12629-7+A1
1	Crushing	detensioning cylinders, jacking devices releasing	1.1	5.1	5.6.1.1
	Failure of control system	failure of the hydraulic balancing of the multi-strand tensioning cylinders: mechanical break	8.1	5.4	5.6.1.2
2	Impact	chain or guard ejection due to rupture of strands (wire or bundles)	1.5	5.3.1	5.6.1.2, 7.2.3
	Ejection of parts	chain or guard ejection due to rupture of strands (wire or bundles)	1.7	5.3.1	5.6.1.2, 7.2.3
	Neglecting use of personal protective equipment	initial training of the personnel	7.4	7	7.1
	All kinds of guards	lack of guards on the bed during the tensioning	9.1	5.1.1	5.6.1.2.1, 7.2.3
	All kinds of guards	bed end guards kept open after the pre-tensioning of the wires	9.1		5.6.1.2, 7.2.3
3	Crushing	falling of the single wire stressing jack	1.1		5.6.1.2
	Perforation, puncture	breaking of the strand or wire (quality of steels)	6.4		7.2.1
	Excessive efforts	tensioning by single wire cylinder (height, support of the single wire stressing jack)	7.2	5.9	5.6.1.2, 7.2.3
	Neglecting use of personal protective equipment	lack of advice, written instructions, PPE adapted to human (glasses, gloves, sound protection)	7.4	5.5, 7	7.1
	Human error	not respecting the order of tensioning the wires (breaking risks)	7.6	7	7.2.3, 7.3
	Human error	excessive tensioning of the wire that result in a break of the wire	7.6		7.3
	All kinds of guards	lack of sound or light signals to warn of tensioning	9.1	5.5	5.6.2.1.3, 7.2.3

Table 8 (continued)

Hazards zones as per Figures A.1 and A.3	Hazards	Localisation/scenario	References Table 1	Safety requirements	
				See Clause 5 of EN 12629-1:2000+A1:2010	See specified clauses of EN 12629-7+A1
4	Shearing	between button-heads and transverse anchor (during pre-tensioning)	1.2		5.6.1.2
	Impact	rupture of a transverse anchor.	1.5		5.6.1.2
	Contact with harmful products	cleaning products of the transverse anchor.	6.2		7.1
	Fire	cleaning products of the transverse anchor.	6.3		5.4, 7.1, 7.2.2
	Perforation, puncture	Ends of strands (breaking of reinforcement or button-holding, or button-heads slipping in the anchors)	6.4		5.6.1.2
	Perforation, puncture	transverse anchor disengagement after cutting of the steel	6.4		7.1
	Human error	assembling of the anchor grips (mixing of new, old, different... parts), forget to clean and to check	7.6	7.2	7.2.2
5	Shearing	with the bed accessories (removable walls, mobile vibrator)	1.2		5.6.1.1
	Slip, trip and falling	falling from/into the casing (assembly of the reinforcements, concrete smoothing...)	1.8	5.3.7, 7.3	5.2.3
6	Shearing	with the mobile part of the single wire stressing jack during tensioning	1.2		5.6.1.2
7	Cutting	sharp edges in beds and casing	1.3	5	-
8	Drawing-in or trapping	strands (wire or bundles) under tension (failure of the anchoring, slippage of the locking device)	1.4		5.6.1.2
	Impact	strands (wire or bundles) under tension (failure of the anchoring, slippage of the locking device)	1.5		5.6.1.2
	Impact	falling of accessories (combs, inserts, layout of product sides and ends) during mechanical or manual handling operations	1.5		5.6.2.2.2
	Slip, trip and falling	oiled beds (walking on the beds after spraying of the releasing agents)	1.8	5.8.2	5.6.1.1, 7.2.3
	Burns	heat radiation from the bed (heating of the beds): feet burns	3.1		5.2.4, 7.2.3
	Burns	steam pipes (location, isolation, leakage)	3.1		5.4