SLOVENSKI STANDARD
SIST EN 1248:2002/kprA1:2008

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Livarski stroji - Varnostne zahteve za opremo za peskanje

Foundry machinery - Safety requirements for abrasive blasting equipment

Gießereimaschinen - Sicherheitsanforderungen für Strahlanlagen

Machines de fonderie - Prescriptions de sécurité pour équipements de grenaillage

Ta slovenski standard je istoveten z: **EN 1248:2001/prA1**

ICS:

25.120.30	Livarska oprema	Moulding equipment

SIST EN 1248:2002/kprA1:2008 **en,fr,de**

EUROPEAN STANDARD

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FINAL DRAFT
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English Version

Foundry machinery - Safety requirements for abrasive blasting equipment

Machines de fonderie - Prescriptions de sécurité pour équipements de grenaillage

Gießereimaschinen - Sicherheitsanforderungen für Strahlanlagen

This draft amendment is submitted to CEN members for unique acceptance procedure. It has been drawn up by the Technical Committee CEN/TC 202.

This draft amendment A1, if approved, will modify the European Standard EN 1248:2001. 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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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN 1248:2001/prA1:2008) has been prepared by Technical Committee CEN/TC 202 “Foundry machinery”, the secretariat of which is held by DIN.

This document is currently submitted to the Formal Vote.

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.

The new safety requirements as stated in this document comply with the additional relevant Essential Requirements of the new Machinery Directive 2006/42/EC complementing the existing Machinery Directive 98/37/EC.

1 Modification to "Contents"

Add "Figures" and "Tables" at the end of the contents and update the table of contents:

Figures

Figure B.1 — Processing scheme with ….

Tables

Table 1 — Significant hazards, hazardous ….

2 Modification to "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.".

3 Modification to "Introduction"

Replace the text of the clause "Introduction" with:

"This European Standard is a type C standard as stated in EN ISO 12100.

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

Where for clarity an example of a preventative measure is given in the text, this should not be considered as the only possible solution. Other solutions can be used as far as they fulfil correctly the criteria expressed in the requirement.

This European Standard assumes, that the equipment is operated and maintained by trained personnel.".

4 Modification to Clause "2 Normative references"

Replace the 1st paragraph with:

"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.".

Due to the extensive update (e.g., EN by EN ISO) and the old format of the referenced standards, replace the list of standards with:

"EN 286-1, *Simple unfired pressure vessels designed to contain air or nitrogen — Part 1: Pressure vessels for general purposes*

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

EN 620, *Continuous handling equipment and systems — Safety and EMC requirements for fixed belt conveyors for bulk materials*

EN 626-1, *Safety of machinery — Reduction of risks to health from hazardous substances emitted by machinery — Part 1: Principles and specifications for machinery manufacturers*

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

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

EN 981, *Safety of machinery — System of auditory and visual danger and information signals*

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

EN 999, *Safety of machinery — The positioning of protective equipment in respect of approach speeds of parts of the human body*

EN 1037, *Safety of machinery — Prevention of unexpected start-up*

EN 1088:1995, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection*

EN 1265, *Noise test code for foundry machines and equipment*

EN 60079-0, *Electrical apparatus for explosive gas atmospheres — Part 0: General requirements (IEC 60079-0:2004, modified)*

EN 60204-1:2006, *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 61310-1, *Safety of machinery — Indication, marking and actuation — Part 1: Requirements for visual, auditory and tactile signals (IEC 61310-1:2007)*

EN 61310-2, *Safety of machinery — Indication, marking and actuation — Part 2: Requirements for marking (IEC 61310- 2:2007)*

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

EN ISO 10218-1, *Robots for industrial environments — Safety requirements — Part 1: Robot (ISO 10218-1:2006)*

EN ISO 11688-1, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 1: Planning (ISO/TR 11688-1:1995)*

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 13849-1:2006, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2006)*

EN ISO 13850:2006, *Safety of machinery — Emergency stop — Principles for design (ISO 13850:2006)*

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

ISO 3864-1, *Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs in workplaces and public areas*

ISO 7000, *Graphical symbols for use on equipment — Index and synopsis*

CENELEC R044-001, February 1999, *Safety of machinery — Guidance and recommendations for the avoidance of hazards due to static electricity*".

NOTE Updating the amended standards mentioned in Clauses 3 to 8 is not necessary, due to the modifications given hereafter.

5 Modification to Clause "3 Terms and definitions"

Replace the 1st two sentences with:

"For the purpose of this document, the terms and definitions given in EN ISO 12100:2003 and the following apply.

NOTE Definition used in EN and ISO standards referred to in this European Standard are also valid for this European Standard.".

Replace definition 3.3 and 3.4 with:

"3.3
abrasive media
granular metallic or non-metallic material to be forcibly applied to a surface to achieve the desired result

NOTE Classification of metallic abrasives see EN ISO 11124-1, of non-metallic abrasives see EN ISO 11126-1.

3.4
free-jet work
manual blasting process carried out with hand held nozzles without protective separation between the operator and the rebounding abrasive media and generated dust

NOTE In general the use of an appropriate abrasive blasting helmet and other protective clothing will be necessary in this case.".

6 Modification to Clause "4 Hazards"

Replace the headline of Clause 4 with:

"4 List of significant hazards".

*Replace the 3rd paragraph "*An assessment of the foreseeable risks arising …" *with:*

"The significant hazards, hazardous situations and events, as far as they are dealt with in this document, identified by risk assessment as significant for this type of machinery and which require action to eliminate or reduce the risk, are listed in Clause 5, Table 1, together with the appropriate safety measures."

and delete the last paragraph.

7 Modification to "5.1 General"

Replace the sub-clause 5.1 with:

"5.1 General

5.1.1 Machinery shall comply with the safety requirements and/or protective measures formulated in Table 1 in relation with the different significant hazards. In addition, the machine shall be designed according to the principles of EN ISO 12100-2 for relevant but not significant hazards which are not dealt with by this document.

5.1.2 When selecting the adequate safety measures the manufacturer shall apply the following principles in the given order:

1) elimination or minimisation of risks by integration of the safety concept into the design of the machine;

2) establishment of adequate safety measures against remaining risks (e.g. guard scaffolding, light barriers);

3) instruction to personnel concerning the remaining risks (e.g. service manuals, danger signs).

When more than one measure is necessary to safeguard a hazard then all the necessary measures shall be used. When selecting the safety requirements and/or measures consideration shall be given to the different hazards that may appear at the same time. Warning signs alone are not sufficient in cases of significant risk.

5.1.3 Where access is into a working area is by guards/doors the safety related parts of the electro-mechanical/electronic control system shall be in accordance with at least performance level PL=d with use of category 3 according to EN ISO 13849-1:2006. The hydraulic and pneumatic systems shall be in accordance with at least performance level PL=c with use of category 1 according to EN ISO 13849-1:2006.

5.1.4 Where it is possible to gain access to a hazardous area which is not protected by a movable guard or door, access shall be prevented by fixed guards in accordance with EN ISO 13857, EN 953 and EN 1088.

5.1.5 Emergency stop equipment shall be in accordance with EN ISO 13850 (where applicable, for determination of stop categories see Table 1).

5.1.6 The following Table 1 is developed to allow the designer and manufacturer of the equipment to apply a logical approach for checking the design against the list of significant hazards with respect to abrasive blasting equipment.

Table 1 is structured as follows:

— column 1 identifies the significant hazards;

— column 2 describes the hazardous situations;

— column 3 specifies the safety requirements and/or measures to avoid or minimize the hazards and hazardous situations;

— column 4 identifies the verification methods to be used to demonstrate conformity; the abbreviations V, P, M and D are defined as follows:

V: Visual inspection verifies the required features of the components.

P: A test/check verifies that the features provided perform their function in such a way that the requirement is met.

M: Measurement verifies that requirements are met to the specified limits.

D: Drawings and/or calculations verify that the design characteristics of the components provided meet the requirements.

Verification may involve more than one method.".

8 Modification to Table 1 of Clause "5 Safety requirements and/or measures"

Due to the new format of the Table 1 and extensive amendments re new/updated standards, replace Table 1 as a whole (including the headline) with:

"Table 1 — Significant hazards, hazardous situations, safety requirements and/or measures

Column 1	Column 2	Column 3	Column 4
Significant hazard	**Hazardous situation**	**Safety measures according to the mentioned standards and/or specific measures**	**Verifi-cation**
5.2 Centrifugal wheel assembly (see Annex B, Figures B.2 and B.3)			
5.2.1 Shearing and crushing. Cutting and severing	Access to shear traps between fixed and internal rotating parts from either a hooded wheel or accessible through a door when the wheel is running up or down.	3.25.5 of EN ISO 12100-1:2003 and interlocking guard with guard locking according EN 953 and EN 1088, connected with stop category 1 according 4.1.4 of EN ISO 13850:2006.	V, D
5.2.2 Impact by ejection of parts	Exposure to thrown off abrasive media/workpiece or projectile.	3.25.5 of EN ISO 12100-1:2003 and EN 953, e.g. withstand the impact of propelled abrasive media as well as an escaping wheel blade whilst the wheel is running.	V
5.2.3 Cutting, severing crushing	Access to pneumatic/hydraulic actuated moving parts of the abrasive media feed valve, e.g. in case of trouble-shooting (clogging within pipes) and during maintenance.	3.25.1 of EN ISO 12100-1:2003 (Fixed guard). 4.10 of EN ISO 12100-2:2003. Ensure possibility of depressurising when isolating the machine.	V
5.3 Blasting chamber			
5.3.1 Blasting chamber of centrifugal blasting machines			
5.3.1.1 Crushing, shearing, cutting, impact	Access to the blasting chamber with doors. Movement of the wheels and/or wheel blades escaping whilst the wheel is running.	3.25.5 of EN ISO 12100-1:2003 and 5.4.1 of EN 1088:1995/A12007 connected with stop category 1 according 4.1.4 of EN ISO 13850:2006. An interlocking guard with guard locking shall be fitted to prevent the wheel starting unless the blasting chamber doors are closed and to prevent the doors being opened until the wheels have come to a complete stop.	V, D
		It shall not be possible to open the door(s) until the abrasive media flow had been shut off. Either a) the wheels shall have come to a complete stop; or b) the wheel hood covers shall be in closed position.	V
		The start up of the wheels or the opening movement of the wheel hood covers shall only be possible after the doors are closed	