SLOVENSKI STANDARD
SIST EN 13035-4:2004/kprA1:2009

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Stroji in obrati za izdelavo, obdelavo in predelavo ravnega stekla - Varnostne zahteve - 4. del: Nagibne mize

Machines and plants for the manufacture, treatment and processing of flat glass - Safety requirements - Part 4: Tilting tables

Maschinen und Anlagen für die Herstellung, Be- und Verarbeitung von Flachglas - Sicherheitsanforderungen - Teil 4: Kipptische

Machines et installations pour la fabrication, le façonnage et la transformation du verre plat - Exigences de sécurité - Partie 4: Tables basculantes

Ta slovenski standard je istoveten z: **EN 13035-4:2003/prA1**

ICS:

81.100	Oprema za steklarsko in keramiļno industrijo	Equipment for the glass and ceramics industries

SIST EN 13035-4:2004/kprA1:2009 **en,fr**

EUROPEAN STANDARD

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FINAL DRAFT
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English Version

Machines and plants for the manufacture, treatment and processing of flat glass - Safety requirements - Part 4: Tilting tables

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Maschinen und Anlagen für die Herstellung, Be- und Verarbeitung von Flachglas - Sicherheitsanforderungen - Teil 4: Kipptische

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 13035-4:2003. 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.

This draft amendment was established by CEN 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 CEN Management Centre has the same status as the official versions.

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

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Foreword

This document (EN 13035-4:2003/prA1:2009) 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.

1 Modification to the Foreword

Replace the 3rd paragraph with:

"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)."

Replace the 6th paragraph with:

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

2 Modification to the Introduction

In the 1st paragraph, replace the reference to "EN 1070" *with* "EN ISO 12100-1".

3 Modification to the Scope

Replace 1.2 with:

"This standard deals with all significant hazards, hazardous situations and events relevant to tilting tables for flat glass, when they are used as intended and under the conditions of misuse which are reasonably foreseeable by the manufacturer (see Clause 4). This standard specifies the appropriate technical measures to eliminate or reduce risks arising from the significant hazards during commissioning, operation and maintenance. Noise is not a significant hazard for this type of machines."

In 1.4, replace:

"prEN 13035-3" *with* "EN 13035-3",

"prEN 13035-5"*with* "EN 13035-5" *and*

"prEN 13035-6"*with* "EN 13035-6".

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."

Delete:

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

EN 292-2:1991, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles and specifications.*

EN 292-2:1991/A1:1995, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles and specifications.* ”

"EN 294:1992, *Safety of machinery — Safety distances to prevent danger zones being reached by the upper limbs.*"

“EN 418, *Safety of machinery — Emergency stop equipment, functional aspects — Principles for design.*”

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

"EN 1050:1996, *Safety of machinery - Principles for risk assessment.*"

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

“prEN 61496-2:1997, *Safety of machinery — Electro-sensitive protective equipment — Part 2: Particular requirements for equipment using active opto-electronic protective devices (draft IEC 61496-2:1997).*“

Replace EN 60204-1:1997 with “EN 60204-1:2006, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2005, modified)*".

Add:

"CLC/TS 61496-2:2006, *Safety of machinery — Electro-sensitive protective equipment — Part 2: Particular requirements for equipment using active opto-electronic protective devices (AOPDs) (IEC 61496-2:2006)*

EN ISO 4871:1996, *Acoustics — Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)*

EN ISO 11201, *Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at a work station and at other specified positions — Engineering method in an essentially free field over a reflecting plane (ISO 11201:1995)*

EN ISO 11202, *Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at a work station and at other specified positions — Survey method in situ (ISO 11202:1995)*

EN ISO 11204, *Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at a work station and at other specified positions — Method requiring environmental corrections (ISO 11204:1995)*

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 13849-1:2008, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2006)*

EN ISO 13850, *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)*"

5 Modification to Clause 3, Terms and definitions

In the 1st paragraph, 1st sentence, replace reference to “EN 1070” *with* “EN ISO 12100-1:2003”.

6 Modification to Clause 4, List of significant hazards

Replace the table with the following:

"Table 1 – List of significant hazards

Hazards		**Preventive measures see clause**
4.1	**Crushing** and **shearing**	
4.1.1	between descending table and fixed supporting structure or floor	5.1-5.1.3; 5.2.2; 5.3.6; 5.3.7
4.1.2	between moving table and adjacent fixed parts, e.g. conveyors	5.2.2; 5.3.6; 5.3.7
4.1.4	of the feet between rising table with additional equipment and floor	5.1-5.1.3; 5.2.3; 5.3.6; 5.3.7
4.1.5	of the finger (tips) between table and moving supports	5.1-5.1.3; 5.3.5-5.3.7
4.2	**Cutting** by glass	7.1.5
4.3	**Impact** by moving table	5.1-5.1.3; 5.2.2; 5.3.6; 5.3.7
4.4	**Direct or indirect electrical contact**	5.3.14
4.5	**Neglecting ergonomic principles e.g. hazards from:**	
4.5.1	excessive effort for access	5.1.1 (NOTE); 5.1.2; 5.1.3
4.5.2	neglected use of personal protection equipment	7.1.5
4.5.3	human behaviour	5.3.15, 7.1.4; 7.1.8; 7.1.9; 7.3
4.5.4	inadequate design, location of manual controls	5.2.2.2; 5.3.7; 5.3.12; 5.3.13
4.6	**Unexpected start-up or malfunction from:**	
4.6.1	failure of the control system	5.1.2; 5.1.3; 5.2.1.4; 5.2.2.2; 5.3.3; 5.3.6.2; 5.3.9; 5.3.11

4.6.2	external influences	5.3.2; 5.3.8
4.7	**Impossibility of stopping in the best possible conditions**	5.3.3; 7.1.7
4.8	**Break-up during operation** (pipes)	5.3.4
4.9	**Falling or ejected objects** (flat glass)	5.3.1; 5.3.9-5.3.11
4.10	**Loss of stability**	7.1.4

"

7 Modification to Clause 5, Safety requirements and/or protective measures

In the Introduction, 2nd paragraph, replace reference to “EN 292” *with* “EN ISO 12100”.

In the Note, replace “EN 418” *with* “EN ISO 13850” *and* “EN 954-1” *with* “EN ISO 13849-1”.

In 5.1.1, replace the 1st sentence with the following: "Danger zones on all-automatic tilting tables shall be safeguarded by a fixed distance guard (see EN 953:1997, 3.2.2) not less than 1,4 m high drawn to the floor with dimensions which prevent danger zones being reached according to EN ISO 13857:2008, Table 1."

Replace 5.1.2 with:

5.1.2 "Where required for temporary maintenance or removing broken or dropped glass, a safe means of access to the safeguarded zone shall be provided. The access door or movable guard shall be interlocking, with or without guard locking. The part of the control system related to the interlocking shall present a performance level of at least d as defined in EN ISO 13849-1:2008 (see also normative Annex A).”

In 5.1.3, *replace* “prEN 61496-2:1997” *with* “CLC/TS 61496-2:2006”.

Replace 5.2.2.2 with:

5.2.2.2 "a minimum gap of 0,5 × 0,5 m measured from the edge of the table (see Annex C [normative]) together with a hold-to-run control device in accordance with EN ISO 13849-1:2008, performance level c (e. g. hard-wired). The operator position shall allow a good view sufficient to allow persons in the danger zone to be detected.”

Replace 5.3.3 with:

5.3.3 "Safety related parts of control systems associated with guards and protective devices (see e.g. 5.1.2, 5.1.3, 5.2.1.4, 5.2.2.2) for stopping dangerous movement shall comply with performance level c of EN ISO 13849-1:2008. Braking systems shall use well-tried components, e.g. spring-actuated 4/3 or 5/3 position valves, motors with spring applied power released brakes.”

Replace 5.3.6.2 with:

5.3.6.2 "When for ensuring the appropriate performance level in accordance with EN ISO 13849-1:2008 a category-2 architecture is used, a start following a start command shall only be possible after a positive test of the safety function of opto-electronic protective devices.”