SLOVENSKI STANDARD
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Machines and plants for the manufacture, treatment and processing of flat glass - Safety requirements - Part 3: Cutting machines

Maschinen und Anlagen für die Herstellung, Be- und Verarbeitung von Flachglas - Sicherheitsanforderungen - Teil 3: Schneidmaschinen

Machines et installations pour la production, le façonnage et la transformation du verre plat - Exigences de sécurité - Partie 3: Machines à découper

Ta slovenski standard je istoveten z: **EN 13035-3:2003/prA1**

ICS:

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

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English Version

Machines and plants for the manufacture, treatment and processing of flat glass - Safety requirements - Part 3: Cutting machines

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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 13035-3:2003. 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.

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

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Contents

Page

Foreword

This document (EN 13035-3:2003/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 EC Directive(s).

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

1 Modification to the Introduction

1st para:

Replace the reference to “EN 1070” *with* “EN ISO 12100-1”.

2 Modifications to the Scope

Replace 1.2, 1st and 2nd sentence, with:

“This European Standard deals with all significant hazards, hazardous situations and events relevant to flat glass cutting machines, 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.”

1.4 *Replace:*

“prEN 13035-5” *with* “EN 13035-5” *and*

“prEN 13035-6” *with* “EN 13035-6”.

1.6 *Replace:*

“prEN 13035-7” *with* “EN 13035-7”.

3 Modifications to Clause 2

Replace 1st para 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, *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 418:1992, *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 1070:1998, *Safety of machinery — Terminology.*”

Update "EN 60204-1:1997" *and* "EN 61496-1" *as follows*:

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

EN 61496-1:2004, *Safety of machinery — Electro-sensitive protective equipment — Part 1: General requirements and tests (IEC 61496-1:2004, modified)*"

Delete:

"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).*"

Add:

"EN ISO 3744:1995, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering method in an essentially free field over a reflecting plane (ISO 3744:1994)*

EN ISO 3746:1995, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Survey method using an enveloping measurement surface over a reflecting plane (ISO 3746:1995)*

EN ISO 3747:2000, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Comparison method for use in situ (ISO 3747:2000)*

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

EN ISO 11201:1995, *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 11202:1995, *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 11204:1995, *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 11688-1:1998, *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 13849-1:2008, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2006)*

EN ISO 13850:2008, *Safety of machinery — Emergency stop — Principles for design (ISO 13850:2006)*

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

4 Modification to Clause 3

1st paragraph:

Replace reference to “EN 1070:1998” *with* “EN ISO 12100-1:2003”.

5 Modification to Clause 4

Add the reference to 5.2.5 as preventive measures in the last column to the following clauses:

4.1.1 to 4.1.1.8 and 4.1.3 to 4.1.5

Add 4.7 as follows: “

Hazards		Danger zone – Dangerous item	Preventive measures see clause
4.7	Hazards by noise may result in hearing damage, tinnitus, stress, in accidents due to interference with speech communication and with the perception of acoustic signals	drive mechanism, fan	5.4, 7.1.1, Annex K

"

6 Modifications to Clause 5

Introduction, replace 1st paragraph with:

“Machinery shall comply with the safety requirements and/or protective measures of this clause.

In addition, the machine shall be designed according to the principles of EN ISO 12100 for relevant but not significant hazards which are not dealt with by this document.”

NOTE: replace: “EN 418” *with* “EN ISO 13850”.

Replace 5.1.11.1 with:

“**5.1.11.1** unintended movements are stopped by sensors when the cutting head goes down too deep. The control shall conform to the requirements of EN ISO 13849-1:2008, performance level d, e. g. using dynamic monitoring; the control shall be constructed in such a way that at least after each command to switch on, the cutting head is moved down to the table as a positive check before a start is possible, and,”

Replace 5.1.12 with:

“**5.1.12** The movement of the cutting head in the cutting position shall be interlocked with the transportation system including the air cushion in such a way that the two functions are not possible at the same time. The interlocking shall conform to the requirements of EN ISO 13849-1:2008, performance level b.”

Replace 5.1.17 to 5.1.21 with:

“**5.1.17** Latching-in stop control devices (switches) in accordance with EN 1037:1995, 6.3.2, and conforming to the requirements of EN ISO 13849-1:2008, performance level c, shall be provided near to the table to be able to prevent an unexpected start-up of the cutting machine by other persons or by a failure of the control. A new start shall only be possible after the actuated device is reset manually.

5.1.18 Stopping by means of safety measures shall be achieved either by the immediate disconnection of the energy supply (EN 60204-1:2006, 9.2.2, category 0) or by electronically controlled braking and the subsequent interruption of the energy supply using contacts, e. g. via a timing element after the operation has been stopped (EN 60204-1:2006, 9.2.2, category 1). In this case, the time-dependent cut-out shall be monitored,

e. g. electronically according to Annex G (normative). Where category 0 is used, mechanical brakes shall be applied.

5.1.19 At the control panel and at each working side of the cutting table, where the squaring and the take-off is done by operators, emergency-stop equipment in accordance with EN ISO 13850:2008, 4.4.3, shall be provided within reach of the operator. The emergency stop shall function according to 5.1.18. Provisions shall be made to ensure that emergency stopping can also be effected on other machines linked to the operation of the cutting machine when this would otherwise introduce a significant hazard. The emergency stop (manually operated actuator) devices shall be situated at the height of the table.

5.1.20 After a stop command has been initiated by protective devices described in 5.2 and 5.3, a restart shall be possible only after a switch (a manual reset device) conforming to the requirements of EN ISO 13849-1:2008, 5.2.2, has been actuated at a place from where there is a good view of the danger zone. This switch shall be mounted in such a way that its operation from inside the danger zone is impossible.

5.1.21 All electrical equipment shall conform to the requirements of EN 60204-1 with regard to the protection against electrical shock (see EN 60204-1:2006, Clause 6).”

Replace 5.2.1 with:

“**5.2.1** A 1,4 m minimum height fixed perimeter fence in accordance with Annex A (normative) shall be provided at each side of the machine. Access shall be provided by movable interlocking guards (see EN 953:1997, 3.3 and 3.5) to both longitudinal sides of the table or photo-electric guarding with one photo-electric sensing unit according to EN 61496-1:2004, type 4, and CLC/TS 61496-2, Annex B (normative) or Annex C (normative).”

Replace 5.2.4 with:

“**5.2.4** The control system associated with the interlocking of guards shall be in accordance with the requirements of EN ISO 13849-1:2008, performance level d. Annex H (informative) gives an example for an interlocking guard without guard locking incorporating two cam-operated position detectors according to EN 1088:1995, Annex G (informative).”

Add a new 5.2.5 as follows:

“**5.2.5 Fixed guards**

If fixed guards are used, their fixing systems shall remain attached to the guards or to the machinery when the guards are removed.”

5.3.1

Replace “prEN 61496-2:1997” *with* “CLC/TS 61496-2:2006” *2 times.*

Add a new 5.4 as follows: “

5.4 Noise

5.4.1 Noise sources and noise reduction

The machine shall generate noise levels as low as possible and practicable. Therefore, noise reduction shall be an integral part of the design process taking into account measures at source as very generally described in EN ISO 11688-1:1998.

The main noise sources are the drive mechanism and the fan.

— Reduction can be achieved for example by application of silencers at the inlet side of fans and enclosures.