



SLOVENSKI STANDARD
SIST EN 13035-11:2007/kFprA1:2009
01-oktober-2009

Stroji in obrati za proizvodnjo, obdelavo in predelavo ravnega stekla - Varnostne zahteve - 11. del: Vrtalni stroji

Machines and plants for the manufacture, treatment and processing of flat glass - Safety requirements - Part 11: Drilling machines

Maschinen und Anlagen zur Herstellung, Be- und Verarbeitung von Flachglas - Sicherheitsanforderungen - Teil 11: Bohrmaschinen

Machines et installations pour la production, le façonnage et la transformation du verre plat - Exigences de sécurité - Partie 11 : Machines de perçage

Ta slovenski standard je istoveten z: EN 13035-11:2006/FprA1

ICS:

25.080.40	Vrtalniki	Drilling machines
81.100	Oprema za steklarsko in keramično industrijo	Equipment for the glass and ceramics industries

SIST EN 13035-11:2007/kFprA1:2009 en,fr

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

FINAL DRAFT
EN 13035-11:2006

FprA1

July 2009

ICS 81.100

English Version

**Machines and plants for the manufacture, treatment and
processing of flat glass - Safety requirements - Part 11: Drilling
machines**

Machines et installations pour la production, le façonnage
et la transformation du verre plat - Exigences de sécurité -
Partie 11 : Machines de perçage

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Verarbeitung von Flachglas - Sicherheitsanforderungen -
Teil 11: Bohrmaschinen

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 13035-11:2006. 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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COMITÉ EUROPÉEN DE NORMALISATION
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Contents

Page

Foreword.....	3
1 Modification to the Foreword	4
2 Modification to the Scope	4
3 Modification to Clause 2, Normative references	4
4 Modification to Clause 4, List of significant hazards.....	5
5 Modification to 5.1, General.....	6
6 Modification to 5.4, Guards and screens	6
7 Modification to 5.5.1, General.....	7
8 Modification to 5.6, Emergency stop	7
9 Modification to 5.7, General safeguarding principles	7
10 Modification to 5.8, General maintenance requirements.....	7
11 Modification to 5.9, Electrical and pneumatic equipment and unexpected start-up	8
12 Modification to 5.10, Noise	8
13 Modification to 7.2.2	8
14 Modification to 7.3, Accompanying documents (in particular: Instruction Handbook)	8
15 Modification to 7.4, Marking	9
16 Addition of Annex B	9
17 Addition of Annex ZB, Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC	11
18 Modification to the Bibliography.....	11

Foreword

This document (EN 13035-11:2006/FprA1:2009) 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.

EN 13035-11:2006/FprA1:2009 (E)**1 Modification to the Foreword**

Replace the 4th paragraph with the following one:

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

2 Modification to the Scope

In 1.2, replace the 1st sentence with the following:

1.2 "This European Standard deals with the significant hazards, hazardous situations and events relevant to drilling machines 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)."

In 1.2, add after the 2nd sentence the following new sentence:

“Safety requirements and/or protective measures are given in Clause 5. When references are made to B level standards such as EN 953, EN 983, EN 999, EN 1037, EN 1088, EN 60204-1, EN ISO 13850 and EN ISO 13857, the manufacturer should carry out an adequate risk assessment for the requirements thereof where choice is necessary.”

3 Modification to Clause 2, Normative references

Delete:

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

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 1050:1996, *Safety of machinery – Principles for risk assessment*"

Delete references to EN 999:1998 and EN 1037:1995 and move them to the Bibliography.

Update:

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

EN 61310-1:1995 as follows: "EN 61310-1:2008, *Safety of machinery — Indication, marking and actuation — Part 1: Requirements for visual, acoustic and tactile signals (IEC 61310-1:2007)*"

Add:

"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 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)*

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

4 Modification to Clause 4, List of significant hazards

Delete the 2nd paragraph.

Replace Table 1 with the following:

EN 13035-11:2006/FprA1:2009 (E)

"Table 1 — List of significant hazards

Hazards		Danger zone/dangerous items	Preventive measures: see clause
4.1	crushing	during down stroke of the clamp	5.4; 5.7; 7.3.8
4.2	cutting or severing	during drilling operation	5.4; 5.7
4.3	entanglement	during drilling and glass positioning operations	5.4; 5.7
4.4	drawing-in or trapping	during drilling and glass positioning operations	5.4; 5.7
4.5	impact	during down stroke of the clamp	5.4; 5.7; 7.3.8
4.6	friction or abrasion	during drilling operation	5.4; 5.7
4.7	electrical	direct or indirect contact	5.5; 5.8; 5.9; 7.3.5
4.8	resulting from contact with or inhalation of harmful fluids, gases, mists, fumes and dusts	coolants	5.2; 7.3.6
4.9	biological and micro-biological (viral or bacterial)	coolants	5.2; 7.3.6
4.10	neglected use of personal protection equipment	all operational phases of the machine	5.8; 7.3.3
4.11	impossibility of stopping in the best possible conditions	during operation of the machine	5.6
4.12	ejected objects or fluids	during drilling operation	5.2; 5.4
4.13	unexpected start-up by restoration of energy supply after interruption, errors made by the operator	all dangerous movements	5.8; 5.9
4.14	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	during drilling operation	5.10; 7.3.2
4.15	lasers	laser centring device	5.3; 7.2.1; 7.3.7

5 Modification to 5.1, General

Delete the 3rd paragraph.

6 Modification to 5.4, Guards and screens

In the 2nd paragraph, add the following new sentence after the last sentence:

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

7 Modification to 5.5.1, General

Replace the existing text in 5.5.1 with the following:

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

At locations with spraying of water, the use of maximum 24 V in accordance with EN 60204-1:2006, 6.4, shall be considered for the control circuits."

8 Modification to 5.6, Emergency stop

Replace the 1st paragraph with the following:

"Drilling machines shall be equipped at the operator's start/stop station with easily and quickly accessible actuators of emergency-stop equipment in accordance with EN ISO 13850. The stop function shall be in accordance with EN 60204-1:2006, 9.2.2, category 0 or 1. The related part of the control system shall present a performance level of at least c in accordance with EN ISO 13849-1:2008."

9 Modification to 5.7, General safeguarding principles

Replace the existing text in 5.7.4.2 with the following:

5.7.4.2 "The part of the control system related to the safety measures of 5.7.4.1 shall present a performance level of at least b in accordance with EN ISO 13849-1:2008."

Replace 5.7.5 to 5.7.6 with the following:

5.7.5 "Semi-automatic and automatic machines

A movable interlocking guard (see EN 953:1997, 3.5) shall be provided.

Guards shall be provided to avoid contact with the top of the rotating drill and crushing by the clamps, e.g. a movable interlocking guard according to EN 953:1997, 3.5, (see Annex A (informative)). The interlocking device (e.g. using an electromechanical position detector with positive opening of the contacts in accordance with EN 1088:1995, 6.2, or a proximity sensor in accordance with EN 1088:1995, 6.3 and Annex K) and the related part of the control system shall present a performance level of at least c in accordance with EN ISO 13849-1:2008.

5.7.6 Fully automatic machines

Fixed distance guards in accordance with EN 953:1997, 3.2.2, shall prevent access to the moving parts. Safety distances shall be in accordance with EN ISO 13857:2008, Tables 1 and 4.

Where required means of access to the safeguarded zone shall be provided. The access door or movable guard shall be interlocking. The interlocking device (e.g. using an electromechanical position detector with positive opening of the contacts in accordance with EN 1088:1995, 6.2) and the related part of the control system shall present a performance level of at least c in accordance with EN ISO 13849-1:2008.

NOTE It is recommended to use interlocking guards with guard locking to prevent thoughtless opening of the guard and interruption of the process with possible difficulties for a new start."

10 Modification to 5.8, General maintenance requirements

Replace the existing text in 5.8 with the following: