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

Maschinen und Anlagen zur Herstellung, Be- und Verarbeitung von Hohlglas - Sicherheitsanforderungen - Teil 3: IS-Maschinen

Machines et installations pour la production, le façonnage et la transformation du verre creux - Exigences de sécurité - Partie 3: Machines IS

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Equipment for the glass and ceramics industries

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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 13042-3:2007. 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

Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document (EN 13042-3:2007/prA1:2008) 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.

EN 13042-3:2007/prA1:2008 (E)**1 Modification to the Introduction**

Replace the 6th paragraph with the following:

“When compiling this European Standard it was assumed that due to the heat of the processed material and the need for the use of auxiliary aids, such as tongs, during work in the danger zone of the closing mould, there is typically no significant risk from the closing movement of the mould parts during the normal shaping process of hot glass.”

2 Modification to the Scope

Replace the text of 1.2 with the following:

“This European Standard deals with the significant hazards, hazardous situations and events relevant to IS machines, when they are used as intended and under the 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 significant hazards during commissioning, operation and maintenance.”

3 Modification to Clause 2

Delete the following references:

“EN 418:1992, *Safety of machinery — Emergency stop equipment, functional aspects — Principles for design*

EN 574:1996, *Safety of machinery — Two-hand control devices — 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*”

Add the following references:

“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 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 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)*”

4 Modifications to Clause 4

In Table 1, replace 4.4 with the following: “

Clause	Hazards () = reference number from table A.1 of EN 1050:1996	Dangerous items	Preventive measures: see clause
4.4	Generated by noise, may result in hearing damage, tinnitus, stress, in accidents due to interference with speech communication and with the perception of acoustic signals (4.1)	1. machine noise	5.8.1; 7.2.1; 7.2.3

Delete 4.5.

5 Modifications to Clause 5

Replace 5.1, 3rd paragraph, 1st sentence, with the following:

“For applications of a B level standard such as EN 953, EN 983, EN 1037, EN ISO 13849-1 and EN 60204-1 and EN ISO 13850, the manufacturer shall carry out an adequate risk assessment for the requirements thereof where choice is necessary.”

Replace 5.2.1, 2nd paragraph, with the following:

“Starting equipment for the automatic working cycle of an individual section shall be fitted and configured or arranged in each section. Appropriate control devices with two push buttons to be pressed at the same time shall be used and shall initiate intermitted green lights visible on both sides of the section until the section starts. After the section has started, the lights are permanently illuminated. The minimum distance between the push buttons shall be calculated according to EN 999:1998, Clause 8.”

Replace the text of 5.2.2 with the following:

“Each individual section shall be fitted on both sides with a device which maintains a stop command in accordance with EN 1037:1995, 6.3.2, until the device is reset manually (e. g. a latching-in stop control device). This switch shall prohibit a start of any movement of the respective section and the delivery of gobs into this section. All gob distributors shall also be fitted either with their own latching-in stop control device or a mechanical blocking device. The safety-related part of the control system shall be at least in accordance with EN ISO 13849-1:2008, performance level c (see also 7.2.4).”

Replace the text of 5.3 with the following:

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“The IS machine shall be equipped, as a minimum, at both sides of the machine and at the main control station with easily and quickly accessible emergency stopping devices. The emergency-stop equipment shall be in accordance with EN ISO 13850 and stop all moving parts of the IS machine, delivery of glass to the machine and the machine conveyor. The stop function shall be in accordance with stop category 0 or 1 (see EN ISO 13850:2008, 4.1.4, EN 60204-1:2006, 9.2.2 and 9.2.5.4.2) and the safety-related part of the control shall be at least in accordance with EN ISO 13849-1:2008, performance level c.”

In 5.4, replace “category 1 of EN 954-1:1996” with “EN ISO 13849-1:2008, performance level c”.

In 5.8.2, replace the 1st indent with the following: “

- the A-weighted sound-power levels shall be determined in accordance to one of the basic standards EN ISO 3744 (grade 2: engineering) or EN ISO 3746 (grade 3: survey) or EN ISO 3747 (grade 2: engineering). Preferably a grade-2 method shall be used. If this is not possible, a grade-3 method can be applied, but the reason shall be explained;”.

Replace the 3rd and 4th indents with the following: “

- the machine shall be operated without cooling, forming and blowing air, without glass, without mould and tool equipments and with nominal operating pressures and a cavity rate of 10 cycles/section/minute;
- the workstation and the position of the microphone are 1) in a distance of 1 m from the plunger centre line at the blank side and 2) in a distance of 1 m from the conveyor centre line at the blow side and for both measurements in the middle of the machine and in 1,55 m height above top of the machine bed.”

Replace 5.9.1 and 5.9.2 with the following:

5.9.1 Transmission parts shall be safeguarded with fixed or interlocking guards in accordance with EN 294, EN 953 and EN 1088. The safety-related part of the interlocking of guards shall be at least in accordance with EN ISO 13849-1:2008, performance level c.

5.9.2 Moving parts involved in the forming processes shall be safeguarded with fixed or movable guards in accordance with EN 294, EN 953 and EN 1088. The safety-related part of the interlocking of guards shall be at least in accordance with EN ISO 13849-1:2008, performance level d. Where guards are not possible for technical reasons, e. g. lubrication of moulds during the running of the machine, systems or equipment shall be provided wherever possible to reduce the frequency of the operator’s access to moving parts.”

Add a new 5.9.3 as follows:

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

6 Modification to Clause 6

Replace the text of Clause 6 with the following: “

“This clause indicates the methods of testing for the presence and adequacy of safety requirements stated in Clause 5. All safety measures of Clause 5 contain self-evident criteria of acceptance.

Table 2 — Individual testing for requirements stated in Clause 5

Safety measure Clause No.	Safe system for	Method of testing (routine test)		
		Visual	Functional	Measuring
5.2	stopping and starting equipment, two-hand control device, indicator devices, stop control device	X	X	
5.3	emergency-stop equipment	X	X	
5.4	prevention of unexpected movements of individual mechanisms	X	X	
5.5	walking surfaces	X		
5.6	operation of manual controls		X	
5.7	removal of broken glass	X	X	
5.8	noise	X		X ^a
5.9	guards	X	X	X
5.10	heat-protective equipment	X		
5.11	gob distributor and interceptor	X	X	
5.12	gob distributor operation		X	
5.13	power failure	X	X	
5.14	electrical equipment	X ^b	X ^b	X ^b
5.15	pneumatic system	X ^c	X ^c	X ^c
5.16	energy supply disconnecting devices	X	X	

^a L_{WA} test code according to EN ISO 3744:1995 or EN ISO 3746:1995 or EN ISO 3747:2000; L_{pA} test code according to EN ISO 11204:1995.

^b See e.g. EN 60204-1:2006, Clause 18.

^c See EN 983:1996, Clause 6.

7 Modifications to Clause 7

Replace the 1st sentence of 7.2.1.1 with the following:

“If noise reduction in accordance with 5.8.1 it has not been possible to achieve an acceptable emission sound pressure level at the operator’s position(s) that does not exceed 80 dB(A), the manufacturer of the machine shall give a warning in the Instruction handbook that the emission sound pressure level at the operator’s position(s) exceeds 80 dB(A).”

Replace the 3rd indent of 7.2.1.3 with the following: “

— the A-weighted sound power level emitted by the machine where the A-weighted emission sound pressure level at any workstation exceeds 80 dB(A);”

Add a new paragraph after the last indent of 7.2.1.3 as follows: