Kummi- ja plastitöötlusmasinad. Kalandrid. Ohutusnõuded KONSOLIDEERITUD TEKST

Rubber and plastics machines - Calenders - Safety requirements CONSOLIDATED TEXT

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 12301:2000+A1:2008 sisaldab Euroopa standardi EN 12301:2000+A1:2008 ingliskeelset teksti.	This Estonian standard EVS-EN 12301:2000+A1:2008 consists of the English text of the European standard EN 12301:2000+A1:2008.
Standard on kinnitatud Eesti Standardikeskuse 27.10.2008 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 27.10.2008 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 03.09.2008.	Date of Availability of the European standard text 03.09.2008.
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English Version

Plastics and rubber machines - Calenders - Safety requirements

Machines pour les matières plastiques et le caoutchouc - Calandres - Prescriptions de sécurité

Kunststoff- und Gummimaschinen - Kalander - Sicherheitsanforderungen

This European Standard was approved by CEN on 24 April 2000 and includes Amendment 1 approved by CEN on 8 June 2008.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists 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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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Foreword

This document (EN 12301:2000+A1:2008) has been prepared by Technical Committee CEN/TC 145 "Plastics and rubber machines", the secretariat of which is held by UNI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2009, and conflicting national standards shall be withdrawn at the latest by December 2009.

This document includes Amendment 1, approved by CEN on 2008-06-08. The main changes compared to the previous version are:

- modification of the main element of the title.
- editorial modification of Annex ZA.
- addition of Annex ZB.
- editorial changes of EN 292-1:1991 to EN ISO 12100-1:2003 and of EN 292-2:1991 to EN ISO 12100-2:2003 in the following clauses and sub-clauses: Introduction, 2, 5.1.1.3.3, 5.1.1.7, 5.1.1.8, 5.1.1.10, 5.2.2, 5.3.2, 5.4.1, 5.4.2, 5.8, Table 1, 7, 7.1, 7.1.1d), 7.2, C.2.
- minor changes of sub-clauses 5.4.2, second indent and 7.2, second and third indents.

This document supersedes EN 12301:2000.

The start and finish of text introduced or altered by amendment is indicated in the text by tags ⟦A1⟩ ⟨A1⟧.

This European Standard 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).

⟦A1⟩ For relationship with EU Directive(s), see informative Annexes ZA and ZB, which are integral parts of this document. ⟨A1⟧

The annexes A to F are informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom

Introduction

This European standard is a type C standard as described in [A1] EN ISO 12100 [A1].

The extent to which hazards are covered is indicated in the scope of this standard. In addition, machinery shall comply as appropriate with [A1] EN ISO 12100 [A1] for hazards which are not covered by this standard.

1 Scope

This European standard specifies safety requirements relating to the design and construction of multi-roll calenders intended for the processing of rubber or plastics.

This standard concerns the calender alone including all components fixed to its frame.

Annex A shows examples of various types of calenders and annex B shows examples of calendaring processes.

The following machines are excluded:

— two-roll calenders forming an integral unit with an extruder (roller head);

— two or three-roll polishing , laminating or embossing units (which are not calenders) installed downstream of extruders in film processing lines.

This standard deals with the significant hazards listed in clause 4.

The following hazards are not dealt with:

— hazards generated by the materials being processed (see informative annex C);

— hazards generated by the processing of explosive materials, or materials which give rise to an explosive atmosphere;

— fire hazards due to ignition of flammable materials by contact with hot parts of the calender (e.g. in case of oil leakage);

— hazards due to electromagnetic, laser or ionising radiation;

— hazards generated if the calender is installed in an explosive atmosphere.

This standard applies to machinery manufactured after the date of approval of this standard by CEN.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

[A1] *deleted text* [A1]

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

EN 349:1993, *Safety of machinery - Minimum gaps to avoid crushing of parts of the human body*

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

EN 457:1992, *Safety of machinery - Auditory danger signals - General requirements, design and testing (ISO 7731:1986, modified)*

EN 563:1994, *Safety of machinery - Temperature of touchable surfaces - Ergonomics data to establish temperature limit values for hot surfaces*

EN 614-1, *Safety of machinery - Ergonomic design principles - Part 1: Terminology and general principles*

EN 953:1997, *Safety of machinery - Guards - General requirements for the design and construction of fixed and movable guards*

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

EN 999:1998, *Safety of machinery – The positioning of protective equipment in respect of approach speeds of parts of the human body*

EN 1037:1995, *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 1760-1:1997, *Safety of machinery - Pressure sensitive protective devices - Part 1: General principles for the design and testing of pressure sensing mats and pressure sensitive floors*

prEN 12437-1:1996, *Safety of machinery - Permanent mean of access to machines and industrial plants – Part 1: Choice of a fixed means of access between two levels*

prEN 12437-2:1996, *Safety of machinery - Permanent means of access to machines and industrial plants – Part 2: Working platforms and gangways*

prEN 12437-3:1996, *Safety of machinery - Permanent means of access to machines and industrial plants – Part 3: Stairways, stepladders and guard-rails*

prEN 12437-4:1996, *Safety of machinery - Permanent means of access to machines and industrial plants – Part 4: Fixed ladders*

EN 60204-1:1997, *Safety of machinery - Electrical equipment of machines - Part 1: General requirements (IEC 60204-1:1997)*

EN 60529:1991, *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)*

EN 61310-1:1995, *Safety of machinery - Indication, marking and actuation - Part 1: Requirements for visual, auditory and tactile signals (IEC 61310-1:1995)*

EN 61496-1:1998, *Safety of machinery - Electro-sensitive protective equipment - Part 1: General requirements and tests (IEC 61496-1:1997)*

EN ISO 3743-1:1995, *Acoustics - Determination of sound power levels of noise sources - Engineering methods for small movable sources in reverberant fields - Part 1: Comparison method for hard-walled test rooms (ISO 3743-1:1994)*

EN ISO 3743-2:1996, *Acoustics - Determination of sound power levels of noise sources using sound pressure - Engineering methods for small movable sources in reverberant fields - Part 2: Methods for special reverberation test rooms (ISO 3743-2:1994)*

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 4871, *Acoustics - Determination and verification of noise emission values of machinery and equipment (ISO 4871:1996)*

EN ISO 9614-1:1995, *Acoustics - Determination of sound power levels of noise sources using sound intensity - Part 1: Measurement at discrete points (ISO 9614-1:1993)*

EN ISO 9614-2:1996, *Acoustics - Determination of sound power levels of noise sources using sound intensity - Part 2: Measurement by scanning (ISO 9614-2:1996)*

EN ISO 11201:1995, *Acoustics - Noise emitted by machinery and equipment - Measurement of emission sound pressure levels at the 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 the work station and at other specified positions - Survey method in situ (ISO 11202:1995)*

EN ISO 11203:1995, *Acoustics - Noise emitted by machinery and equipment - Determination of emission sound pressure levels at the work station and at other specified positions from the sound power level (ISO 11203:1995)*

EN ISO 11204:1995, *Acoustics - Noise emitted by machinery and equipment - Measurement of emission sound pressure levels at the 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)*

prEN ISO 11688-2:1999, *Acoustics - Recommended practice for the design of low-noise machinery and equipment- Part 2: Introduction to the physics of low-noise design (ISO/TR 11688-2:1998)*

[A1] EN ISO 12100-1:2003, *Safety of machinery - Basic concepts, general principles for design - Part 1: Basic terminology, methodology (ISO 12100-1:2003)* [A1]

[A1] EN ISO 12100-2:2003, *Safety of machinery - Basic concepts, general principles for design - Part 2: Technical principles (ISO 12100-2:2003)* [A1]

ISO/DIS 3747:1998, *Acoustics - Determination of sound power levels of noise sources using sound pressure - Comparison method for use in situ*

3 Terms and definitions

For the purposes of this standard the following definitions apply: