

Kummi- ja plastitöötlusmasinad. Kalandrid. Ohutusnõuded

Rubber and plastics machines - Calenders - Safety requirements

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 12301:2000 sisaldab Euroopa standardi EN 12301:2000 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 18.12.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 12301:2000 consists of the English text of the European standard EN 12301:2000.</p> <p>This document is endorsed on 18.12.2000 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>This European standard specifies safety requirements relating to the design and construction of multi-roll calendars intended for the processing of rubber or plastics. This standard concerns the calender alone, including all components fixed to its frame.</p>	<p>Scope:</p> <p>This European standard specifies safety requirements relating to the design and construction of multi-roll calendars intended for the processing of rubber or plastics. This standard concerns the calender alone, including all components fixed to its frame.</p>
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ICS 83.200

Võtmesõnad:

English version

**Rubber and plastics machines – Calenders
Safety requirements**

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

Gummi- und Kunststoffmaschinen –
Kalander – Sicherheitsanforderungen

This European Standard was approved by CEN on 2000-04-23.

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 Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 145 "Rubber and plastics machines – Safety", 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 January 2001, and conflicting national standards shall be withdrawn at the latest by January 2001.

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).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this standard.

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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

This European standard is a type C standard as described in EN 292.

The extent to which hazards are covered is indicated in the scope of this standard. In addition, machinery shall comply as appropriate with EN 292 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 calendering 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 Normatives 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.

EN 292-1:1991, *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 (and Amendment A1:1995).*

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 means 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)*.

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