

**Masinate ohutus. Ohutusnõuded  
paberivalmistamis- ja  
viimistlusmasinate kavandamisele ja  
valmistamisele. Osa 1: Üldised nõuded**

Safety of machinery – Safety requirements for the design and construction of printing and paper converting machines – Part 1: Common requirements

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 1010-1:2005 sisaldab Euroopa standardi EN 1010-1:2004 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 25.01.2005 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 1010-1:2005 consists of the English text of the European standard EN 1010-1:2004.</p> <p>This document is endorsed on 25.01.2005 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><b>Käsitlusala:</b> This document applies to - printing machines for printing on paper and similar materials, including screen printing presses; equipment used in the preparation of the printing process and additional equipment on printing machines are also considered to be printing machines. This standard also covers machinery used for the handling of paper, products, printing formes and inks (before and after the printing process) as well as machinery for cleaning printing formes and checking the print quality (auxiliary printing machinery). - paper converting machines, i. e. machines to process, convert or finish paper, board and similar materials which are processed, converted or finished in a similar manner.</p>	<p><b>Scope:</b> This document applies to - printing machines for printing on paper and similar materials, including screen printing presses; equipment used in the preparation of the printing process and additional equipment on printing machines are also considered to be printing machines. This standard also covers machinery used for the handling of paper, products, printing formes and inks (before and after the printing process) as well as machinery for cleaning printing formes and checking the print quality (auxiliary printing machinery). - paper converting machines, i. e. machines to process, convert or finish paper, board and similar materials which are processed, converted or finished in a similar manner.</p>
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**Safety of machinery - Safety requirements for the design and construction of printing and paper converting machines - Part 1: Common requirements**

Sécurité des machines - Prescriptions de sécurité pour la conception et la construction de machines d'impression et de transformation du papier - Partie 1: Prescriptions communes

Sicherheit von Maschinen - Sicherheitsanforderungen an Konstruktion und Bau von Druck- und Papierverarbeitungsmaschinen - Teil 1: Gemeinsame Anforderungen

This European Standard was approved by CEN on 7 June 2004.

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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**

**Contents**

Page

Foreword.....	4
Introduction .....	5
1 Scope .....	5
2 Normative references .....	6
3 Terms and definitions .....	8
4 List of significant hazards .....	10
5 Safety requirements and/or protective measures .....	13
5.1 General.....	13
5.2 Requirements common to printing and paper converting machines .....	13
5.2.1 Safeguarding of danger points.....	13
5.2.2 Guards and interlocks.....	15
5.2.3 Devices for setting-up, cleaning, trouble-shooting during the work process and maintenance .....	16
5.2.4 Explosion prevention and protection .....	17
5.2.5 Electrical equipment.....	19
5.2.6 Control systems.....	20
5.2.7 Indicators, marking, actuators, prestart warning devices.....	22
5.2.8 Two-hand controls.....	22
5.2.9 Electrosensitive protective devices (ESPDs) .....	23
5.2.10 Pressure sensitive mats, trip devices .....	23
5.2.11 Safety position switches.....	23
5.2.12 Work platforms, access stairs, passageways and raised workplaces.....	23
5.2.13 Stability .....	25
5.2.14 High contact temperatures .....	25
5.2.15 Noise .....	25
5.2.16 Radiation hazards .....	26
5.2.17 Immunity to electromagnetic disturbances .....	26
5.3 Common devices .....	27
5.3.1 Stationary knives .....	27
5.3.2 Rotary tools .....	27
5.3.3 Dangerous tools.....	27
5.3.4 Feeding units, delivery units (pile lifting and lowering devices).....	27
5.3.5 Reel unwinding and rewinding devices for webs.....	31
6 Verification of the safety requirements and/or protective measures.....	33
7 Information for use .....	37
7.1 Minimum requirements for machine markings.....	37
7.2 Instruction handbook .....	38
Annex A (informative) Classification of zones for printing presses and finishing machines (relating to 5.2.4) .....	39
Annex B (normative) Audible prestart warning devices.....	42
Annex C (informative) Risk analysis relating to the pitch angle of access stairs .....	44
Annex D (informative) Example of layout of an instruction handbook.....	46
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 98/37/EC .....	48

<b>Annex ZB (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 94/9/EC.....</b>	<b>49</b>
<b>Bibliography.....</b>	<b>51</b>

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## Foreword

This document (EN 1010-1:2004) has been prepared by Technical Committee CEN/TC 198 "Printing and paper machinery - Safety", the secretariat of which is held by DIN.

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 June 2005, and conflicting national standards shall be withdrawn at the latest by June 2005

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 Annex ZA and ZB, which is an integral part of this document.

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

## Introduction

This European Standard is a type C standard as stated in EN 1070:1998.

The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this document.

For machines that have been designed and built according to the provisions of this C standard, the following stipulation applies: When provisions of this type C standard are different from those which are stated in type A or B standards, the provisions of this type C standard take precedence over the provisions of the other standards.

This document consists of the following parts:

- Part 1 Common requirements
- Part 2 Printing and varnishing machines including pre-press machinery
- Part 3 Cutting machines
- Part 4 Bookbinding, paper converting and finishing machines
- Part 5 Machines for the production of corrugated board and machines for the conversion of flat and corrugated board.

## 1 Scope

### 1.1 This document applies to

- printing machines for printing on paper and similar materials, including screen printing presses; equipment used in the preparation of the printing process and additional equipment on printing machines are also considered to be printing machines. This standard also covers machinery used for the handling of paper, products, printing formes and inks (before and after the printing process) as well as machinery for cleaning printing formes and checking the print quality (auxiliary printing machinery).
- paper converting machines, i. e. machines to process, convert or finish paper, board and similar materials which are processed, converted or finished in a similar manner.

NOTE Similar substrates are, for example, board, corrugated board, plastic film, aluminium foil, sheet metal and photographic paper.

**1.2** This document deals with all common significant hazards relevant to printing and paper converting machinery when they are used as intended and under the conditions foreseen by the manufacturer (see clause 4). This part of the standard defines the common safety requirements for all kinds of printing and paper converting machines and related common devices and shall be used in connection with another part of the EN 1010 series. The specific requirements specified in Part 2 and following parts of EN 1010 take precedence over the respective requirements in EN 1010-1.

NOTE In addition, where a machine is not covered by a specific part of this standard, Part 1 of EN 1010 may be used to establish the approach for dealing with the relevant risks.

**1.3** This document is not applicable to printing and paper converting machines which are manufactured before the date of publication of this document by CEN.

**1.4** This document does not apply to:

- winder-slitters and sheeters in paper finishing (sheeters with unwinders) (see EN 1034-1:2000, EN 1034-3:2000, prEN 1034-5:2001);
- office-type collating machines equipped with friction feeders;
- mail processing machines;
- machines used for filling packages (such as machines for shaping, filling, and closing the package),
- textile printing presses

## **2 Normative references**

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.

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 563:1994, *Safety of machinery — Temperatures of touchable surfaces — Ergonomics data to establish temperature limit values for hot surfaces.*

EN 574:1996, *Safety of machinery — Two-hand control devices — Functional aspects — Principles for design.*

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 for the human body.*

EN 1037:1995, *Safety of machinery — Prevention of unexpected start-up.*

EN 1050:1996, *Safety of machinery — Principles for risk assessment.*

EN 1070:1998, *Safety of machinery — Terminology.*

EN 1088:1995, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection.*

EN 1127-1:1997, *Explosive atmospheres — Explosion prevention and protection — Part 1: Basic concepts and methodology.*

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

EN 1760-2:2001, *Safety of machinery — Pressure sensitive devices — Part 2: General principles for the design and testing of pressure sensitive edges and pressure sensitive bars.*

EN 12198-1:2000, *Safety of machinery — Assessment and reduction of risks arising from radiation emitted by machinery — Part 1: General principles.*

EN 12626:1997, *Safety of machinery — Laser processing machines — Safety requirements.*

EN 13023:2003, *Noise measurement methods for printing, paper converting, paper making machines and auxiliary equipment - Accuracy categories 2 and 3.*

EN 13463-1:2001, *Non-electrical equipment for potentially explosive atmospheres — Part 1: Basic method and requirements.*

EN 13463-5:2003, *Non-electrical equipment intended for use in potentially explosive atmospheres - Part 5: Protection by constructional safety "c".*

EN ISO 4871:19986 *Acoustics — Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996).*

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 14122-1:2001, *Safety of machinery — Permanent means of access to machines and industrial plants — Part 1: Choice of a fixed means of access between two levels (ISO 14122-1:2001).*

EN ISO 14122-2:2001, *Safety of machinery — Means of permanent access to machines and industrial plants — Part 2: Working platforms and gangways (ISO 14122-2:2001).*

EN ISO 14122-3:2001, *Safety of machinery — Means of permanent access to machines and industrial plants — Part 3: Stairways, stepladders and guard-rails (ISO 14122-3:2001).*

EN ISO 14122-4:1996, *Safety of machinery — Means of permanent access to machines and industrial plants — Part 4: Fixed ladders (ISO 14122-4:2004).*

EN 50014:1999, *Electrical apparatus for potentially explosive atmospheres — General requirement.*

EN 50015:1998, *Electrical apparatus for potentially explosive atmospheres — Oil immersion "o".*

EN 50016:1995, *Electrical apparatus for potentially explosive atmospheres — Pressurized apparatus "p".*

EN 50017:1998, *Electrical apparatus for potentially explosive atmospheres — Powder filling "q".*

EN 50018:2000, *Electrical apparatus for potentially explosive atmospheres — Flameproof enclosures "d".*

EN 50019:2000, *Electrical apparatus for potentially explosive atmospheres — Increased safety "e".*

EN 50020:1994, *Electrical apparatus for potentially explosive atmospheres — Intrinsic safety "i".*

EN 50039:1980, *Electrical apparatus for potentially explosive atmospheres — Intrinsic safety "i".*

EN 50281-1-2:1999, *Electrical apparatus for use in the presence of combustible dust — Part 1-2: Electrical apparatus protected by enclosures; selection, installation and maintenance.*

## EN 1010-1:2004 (E)

EN 60079-14:1998, *Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)*.

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

EN 60825-1:1994, *Safety of laser products — Part 1: Equipment classification, requirements and user's guide*.

EN 61000-6-2:2001 *Electromagnetic compatibility (EMC) — Part 6-2: Generic standards; Immunity for industrial environment*.

EN 61010-1:2001, *Safety requirements for electrical equipment for measurement, control and laboratory use — Part 1: General requirements (IEC 61010-1:2001)*.

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

EN 61310-2:1995, *Safety of machinery — Indication, marking and actuation — Part 2: Requirements for marking*.

EN 61496-1:1997, *Safety of machinery — Electrosensitive protective equipment — Part 1: General requirements and tests*.

IEC 61496-2:1997, *Safety of machinery — Electrosensitive protective equipment — Part 2: Particular requirements for equipment using active opto-electronic protective devices*.

CLC R 044-001:1999, *Safety of machinery: „Guidance and recommendations for the avoidance of hazards due to static electricity*.

### 3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 1070:1998 and the following apply.

#### 3.1

##### **danger points**

danger points are defined locations in the danger zone of machines where persons can be injured by movements of

- parts of machines;
- tools of machines or parts of tools;
- workpieces or parts of workpieces or
- materials being processed.

NOTE Danger points can exist, for example, on gear, chain and worm drives, V-belt, flat belt, cord and rope drives, pulling and supporting elements on continuous conveyors, spoke wheels and fly wheels, shafts and shaft ends, rollers, slides, push rods and similar parts, tools and clamping devices.

Particular points of danger are:

- crushing and shearing points;
- trapping points;