

**Masinate ohutus. Ohutusnõuded paberivalmistamis- ja viimistlusmasinate kavandamisele ja valmistamisele.
Osa 4: Raamatute köitmise, paberi ümbertöötlemise ja viimistlusseadmed KONSOLIDEERITUD TEKST**

Safety of machinery - Safety requirements for the design and construction of printing and paper converting machines -
Part 4: Bookbinding, paper converting and finishing machines CONSOLIDATED TEXT

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 1010-4:2004+A1:2009 sisaldab Euroopa standardi EN 1010-4:2004+A1:2009 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 31.12.2009 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 14.10.2009.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 1010-4:2004+A1:2009 consists of the English text of the European standard EN 1010-4:2004+A1:2009.

This standard is ratified with the order of Estonian Centre for Standardisation dated 31.12.2009 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 14.10.2009.

The standard is available from Estonian standardisation organisation.

ICS 37.100.10, 85.100

Standardite reprodutseerimis- ja levitamiseõigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:
Aru 10 Tallinn 10317 Eesti; www.evs.ee; Telefon: 605 5050; E-post: info@evs.ee

Right to reproduce and distribute Estonian Standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without permission in writing from Estonian Centre for Standardisation.

If you have any questions about standards copyright, please contact Estonian Centre for Standardisation:
Aru str 10 Tallinn 10317 Estonia; www.evs.ee; Phone: +372 605 5050; E-mail: info@evs.ee

English Version

**Safety of machinery - Safety requirements for the design and
construction of printing and paper converting machines - Part 4:
Bookbinding, paper converting and finishing machines**

Sécurité des machines - Exigences de sécurité pour la
conception et la construction de machines d'impressions et
de transformation du papier - Partie 4: Machines à relier les
livres, machines de transformation et de finition du papier

Sicherheit von Maschinen - Sicherheitsanforderungen an
Konstruktion und Bau von Druck- und
Papierverarbeitungsmaschinen - Teil 4: Buchbinderei,
Papierverarbeitungs- und Papierveredelungsmaschinen

This European Standard was approved by CEN on 21 November 2003 and includes Amendment 1 approved by CEN on 15 September 2009.

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.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....	4
Introduction	5
1 Scope	5
2 Normative references	6
3 Terms and definitions	7
4 List of significant hazards	10
5 Safety requirements and/or measures	17
5.1 General.....	17
5.2 Bookbinding machines	17
5.2.1 Stitching, riveting, eyeletting and attaching machines (with manual feeding)	17
5.2.2 Gang stitchers.....	19
5.2.3 Gathering machines	21
5.2.4 Perfect binders (Figure 11)	23
5.2.5 Paper drills	25
5.2.6 Book signature presses	26
5.2.7 Book presses	26
5.2.8 Sheet folding machines (Figure 16)	27
5.2.9 Book production lines for the production of hard cover books	28
5.2.10 Back rounding and pressing machines.....	30
5.2.11 Backlining and head banding machines	31
5.2.12 Casing-in machines	31
5.2.13 Book cover crease forming machines (presses).....	32
5.3 Paper converting machines	33
5.3.1 Machines for the production of envelopes	33
5.3.2 Machines for the production of sanitary items.....	40
5.3.3 Inserting machines (Figure 28).....	45
5.3.4 Counter-stackers	46
5.3.5 Paper embossing machine	46
5.4 Finishing machines	48
5.4.1 Coaters.....	48
5.4.2 Laminators.....	52
6 Verification of safety requirements and/or measures.....	56
7 Information for use	66
7.1 Instruction handbook	66
7.1.1 Stitching, riveting, eyeletting and attaching machines	66
7.1.2 Perfect binders.....	66
7.1.3 Machines for the production of envelopes	66
7.1.4 Machines for the production of sanitary items.....	67
7.1.5 Paper embossing machines	67
7.1.6 Coaters.....	67
7.1.7 Hold-to-run speeds of above 10 m/min under two-hand control	67
7.1.8 High contact temperatures	67
Annex A (normative) General requirements	68
A.1 Production lines.....	68
A.2 Start-up warning device	68
A.3 Limit values for interlocking guards.....	68

Annex ZA (informative)	Relationship between this European Standard and the Essential Requirements of EU Directive 98/37/EC	69
Annex ZB (informative)	Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC	70

This document is a preview generated by EVS

Foreword

This document (EN 1010-4:2004+A1:2009) 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 April 2010, and conflicting national standards shall be withdrawn at the latest by April 2010.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document includes Amendment 1 approved by CEN on 2009-09-15.

This document supersedes EN 1010-4:2004.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** **A1**.

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).

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

Annex A of this standard is normative.

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 document is a type C standard as stated in EN 1070. It defines additional safety requirements and/or deviations from the stipulations in ^{A1} EN 1010-1:2004+A1 ^{A1}.

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

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 for machines that have been designed and built according to the provisions of this C standard.

The EN 1010 series of standards 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

This document applies to

- bookbinding machines:
 - stitching, riveting, eyeletting and attaching machines;
 - gang stitchers;
 - gathering machines;
 - perfect binders;
 - paper drills;
 - book signature presses;
 - book presses;
 - sheet folding machines;
 - book production lines for the production of books with hard covers;
 - back rounding and pressing machines;

- backlining and head banding machines;
- casing-in machines;
- book cover crease forming machines.
- paper converting machines:
 - machines for the production of envelopes;
 - machines for the production of sanitary items;
 - inserting machines;
 - counter-stackers;
 - paper embossing machines.
- paper finishing machines:
 - coaters;
 - laminators.

This document shall be used together with **EN 1010-1:2004+A1**. Both parts together identify all significant hazards relevant to bookbinding, paper converting and paper finishing machines when they are used as intended and under the conditions foreseen by the manufacturer (see clause 4). The specific requirements in EN 1010-4 take precedence over respective requirements in **EN 1010-1:2004+A1**.

This document does not deal with risks generated by noise emitted from the machines. These issues are covered basically in **EN 1010-1:2004+A1**. However, for machines like sheet folding machines and machines for the production of envelopes and sanitary items, some specific proposals for noise reduction measures are given.

This document is not applicable to bookbinding, paper converting and finishing machines manufactured before the date of publication of this document 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 (including amendments).

EN 292-1:1991, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology.*

EN 292-2:1991+A1:1995, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles and specifications.*

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 626-1:1994, *Safety of machinery — Reduction of risks to health from hazardous substances emitted by machinery — Part 1: Principles and specifications for machinery manufacturers.*

EN 626-2:1996, *Safety of machinery — Reduction of risks to health from hazardous substances emitted by machinery — Part 2: Methodology leading to verification procedures.*

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

EN 1010-1:2004+A1, *Safety of machinery — Safety requirements for the design and construction of printing and paper converting machines — Part 1: Common requirements.*

prEN 1010-2:2003, *Safety of machinery — Safety requirements for the design and construction of printing and paper converting machines — Part 2: Printing and varnishing machines including pre-press machinery.*

EN 1010-3:2002, *Safety of machinery — Safety requirements for the design and construction of printing and paper converting machines — Part 3: Cutting machines.*

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

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

EN 1539:2000, *Dryers and ovens in which flammable substances are released — Safety requirements.*

prEN 13023, *Noise measurement methods for printing, paper converting, paper making machines and auxiliary equipment — Accuracy categories 2 and 3.*

EN 61000-6-4:2002, *Electromagnetic compatibility (EMC) — Generic standards — Part 6-4: Emission standard for industrial environment (IEC 61000-6-4:1997).*

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

3 Terms and definitions

For the purposes of this European Standard, the definitions given in EN 1070:1998 and EN 1010-1:2004+A1 and the following apply.

3.1

stitching, riveting, eyeletting and attaching machines

powered machines using tools for

— connecting material by means of metallic items

or

— positively fixing metallic items to material

3.2

gang stitchers

machines for stitching folded sheets of paper where individual folded sheets are removed by feeding grippers and the open sheets are stacked on top of each other on a transport chain for subsequent back stitching (see Figure 1)