SLOVENSKI STANDARD
SIST EN 1034-5:2006

01-september-2006

Varnost strojev – Varnostne zahteve za načrtovanje in konstrukcijo strojev in opreme za izdelavo papirja – 5. del: Rezalni stroji

Safety of machinery - Safety requirements for the design and construction of paper making and finishing machines - Part 5: Sheeters

Sicherheit von Maschinen - Sicherheitstechnische Anforderungen an Konstruktion und Bau von Maschinen der Papierherstellung und Ausrüstung - Teil 5: Querschneider

Sécurité des machines - Prescriptions de sécurité pour la conception et la construction de machines de fabrication et de finition du papier - Partie 5: Coupeuses

Ta slovenski standard je istoveten z: **EN 1034-5:2005**

ICS:

13.110	Varnost strojev	Safety of machinery
21.020	Značilnosti in načrtovanje strojev, aparatov, opreme	Characteristics and design of machines, apparatus, equipment
85.100	Oprema za papirno industrijo	Equipment for the paper industry

SIST EN 1034-5:2006 **en**

EUROPEAN STANDARD

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EN 1034-5

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ICS 85.100

English Version

Safety of machinery - Safety requirements for the design and construction of paper making and finishing machines - Part 5: Sheeters

Sécurité des machines - Exigences techniques de sécurité pour la conception et la construction de machines de fabrication et de finition du papier - Partie 5: Coupeuses

Sicherheit von Maschinen - Sicherheitstechnische Anforderungen an Konstruktion und Bau von Maschinen der Papierherstellung und Ausrüstung - Teil 5: Querschneider

This European Standard was approved by CEN on 10 November 2005.

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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 Central Secretariat has the same status as the official versions.

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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 1034-5:2005 has been prepared by Technical Committee CEN/TC 198 “Printing and paper machinery - Safety”, the secretariat of which is held by DIN.

This document shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2006, and conflicting national standards shall be withdrawn at the latest by June 2006.

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, 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 ISO 12100-1.

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

For machines that have been designed and built according to the provisions of this type 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 or from provisions made in EN 1034-1:2000, the provisions of this type C standard take precedence over the provisions of the other standards

1 Scope

This European Standard applies to sheeters, including unwinding units, sheet stacker, drive and control units intended for use in paper making and shall be used together with EN 1034-1:2000. Paper dust and edge strip suction devices are not covered by this standard. It deals with all significant hazards, hazardous situations and hazard events relevant to sheeters, when they are used as intended and under the conditions foreseen by the manufacturer (see clause 4). This standard does not apply to:

— sheeters for corrugated board (see EN 1010-5);

— sheeters for foil (see EN 1010-1);

— sheeters with sheet feeders (see EN 1010-1);

— guillotines (see EN 1010-3:2002).

This document is not applicable to sheeters that have been manufactured before the date of publication of this document by CEN.

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 626-1:1994, *Safety of machinery — Reduction of risk 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 risk to health from hazardous substances emitted by machinery — Part 2: Methodology leading to verification procedures*

EN 811:1996, *Safety distances to prevent danger zones being reached by the lower limbs*

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

EN 982:1996, *Safety of machinery — Safety requirements for fluid power systems and their components — Hydraulics*

EN 983:1996, *Safety of machinery — Safety requirements for fluid power systems and their components — Pneumatics*

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

EN 1034-1:2000, *Safety of machinery — Safety requirements for the design and construction of paper making and finishing machines — Part 1: Common requirements*

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

EN 1050:1998, *Safety of machinery — Principles for risk assessment*

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 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 1837:1999, Safety of machinery — Integral lighting of machines

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

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

EN 61000-6-2:2001, *Electromagnetic compatibility (EMC) — Part 6-2: Generic standards; immunity for industrial environment (IEC 61000-6-2:1999, modified)*

EN 61496-1:2004, *Safety of machinery — Electro-sensitive protective equipment — Part 1: General requirements and tests (IEC 61496- 1:2004, modified);*

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 and specifications (ISO 12100-2:2003)*

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

EN ISO 14122-2:2001, *Safety of machinery — Permanent means of access to machinery — Part 2: Working platforms and gangways (ISO 14122-2:2001)*

EN ISO 14122-3:2001, *Safety of machinery — Permanent means of access to machinery — Part 3: Stair, stepladders and guard-rails (ISO 14122-3:2001)*

3 Terms and definitions

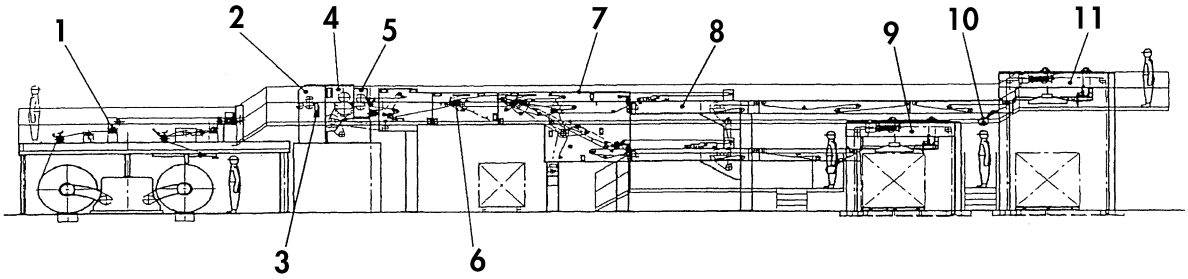
For the purposes of this document, the terms and definitions given in EN 1034-1:2000, EN ISO 12100-1:2003 and the following apply:

3.1
sheeter
paper making and finishing machine in which paper or board webs are cut longitudinally and transversely and the sheets are collected as stacks. This definition also includes sheeters without unwinding units in which the paper web is fed directly from a paper or coating machine. Figure 1 and Figure 2 show examples of sheeters. Figure 1 shows a typical configuration of a sheeter for large sizes with two sheet feeders. Figure 2 shows an example of a sheeter for small sizes with two unwinding units

3.2
sheet delivery unit
final section of a sheeter, designed as a lowering table delivery unit with lifting platform according to 3.3 or as a movable sheet delivery unit according to 3.4, for collecting and stacking the sheets (see Figure 1)

3.3
lifting platform
platform movable in the vertical direction with which the sheets are formed into stacks on pallets in the lowering movement

3.4
movable sheet delivery unit
device for conveying and lifting the paper sheets to form stacks on pallets

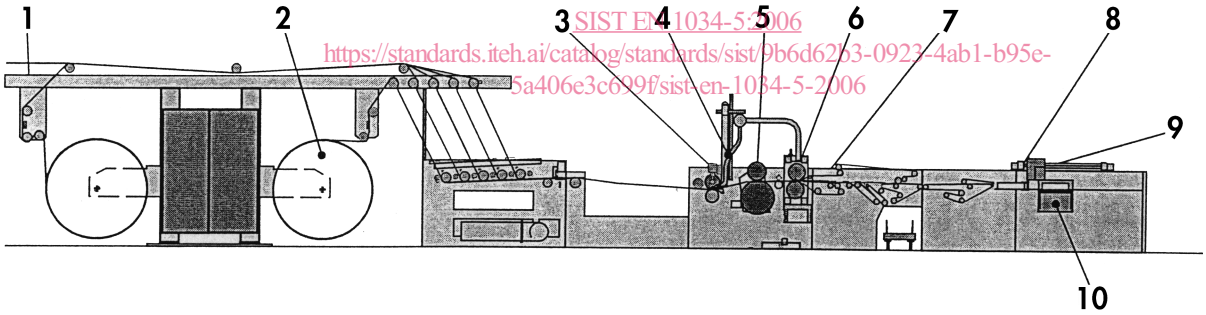


Key

1 Unwinding unit
2 Longitudinal cutter
3 Lateral trim with suction
4 Draw roll
5 Cross cutter
6 Reject gate
7 Change gate
8 Belt section with overlapping
9 Sheet delivery unit
10 Tag inserter
11 Sheet delivery unit

NOTE: Safety devices are not shown.

Figure 1 — Sheeter for large-size formats (example)



Key

1 Splicing device
2 Unwinding unit
3 Longitudinal cutter
4 Trim suction
5 Draw roll
6 Cross cutting station
7 Belt section with sheet gate
8 Collating station (sheet piles)
9 Ream ejection
10 Cross transport

NOTE: Safety devices are not shown.

Figure 2 — Sheeter for small-size formats (example)

4 List of significant hazards

Table 1 of this clause contains all the significant hazards that, as far as they are dealt with in this standard, are identified by risk assessment in accordance with EN 1050:1998 as significant for this type of machinery and require action to eliminate or reduce the risk.

When carrying out the risk assessment, the machine designer has to check whether the list of hazards in Table 1 is complete and applicable with respect to his particular machine.

Table 1 — List of significant hazards

Hazards	EN 1034-5:2005	EN 1034-1:2000
Mechanical hazards		
Crushing/and or shearing hazard	5.6; 5.14.4; 5.14.6; 5.14.7; 5.17.3; 5.19; 5.21.1; 5.22; 5.23; 5.25; 5.26; 5.27	5.3
Cutting or severing hazard	5.14.7.5; 5.17; 5.18.2; 5.20	5.11; 5.12
Entanglement hazard	5.6	5.2
Drawing-in or trapping hazard	5.14.5; 5.14.7; 5.15; 5.19; 5.21; 5.27	5.4
High-pressure fluid ejection hazard	5.12; 5.13	5.24
Ejection of parts	5.14.1; 5.14.3; 5.14.9	5.2
Slip, trip and fall hazards	5.4; 5.21.2; 5.25; 5.25.11	5.5
Electrical hazards caused by, for example:		
Electrical contact (direct or indirect)	5.11	5.23
External influences on electrical equipment	5.11	5.23
Hazards generated by noise, resulting in:		
Hearing loss (deafness), other physiological disorders	5.8	5.15
Interference with language communication, acoustic signals	5.8	5.15
Hazards generated by hot surfaces	5.14.8	
Hazards generated by radiation:		
Lasers	5.24	5.21
Hazards generated by materials and substances processed, used or exhausted by machines, for example:		
Hazards resulting from contact with or inhalation of harmful dusts	5.20.3	5.16