SLOVENSKI STANDARD
SIST EN 1034-21:2012

01-oktober-2012

Varnost strojev - Varnostne zahteve za načrtovanje in konstrukcijo strojev in opreme za izdelavo papirja - 21. del: Prekrivalni stroji

Safety of machinery - Safety requirements for the design and construction of paper making and finishing machines - Part 21: Coating machines

Sicherheit von Maschinen - Sicherheitstechnische Anforderungen an Konstruktion und Bau von Maschinen der Papierherstellung und Ausrüstung - Teil 21: Streichmaschinen

Sécurité des machines - Prescriptions de sécurité pour la conception et la construction de machines de fabrication et de finition du papier — Partie 21: Coucheuses

Ta slovenski standard je istoveten z: **EN 1034-21:2012**

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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

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Safety of machinery - Safety requirements for the design and construction of paper making and finishing machines - Part 21: Coating machines

Sécurité des machines - Prescriptions de sécurité pour la conception et la construction de machines de fabrication et de finition du papier - Partie 21: Coucheuses

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Foreword

This document (EN 1034-21:2012) 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of an identical text or by endorsement, at the latest by February 2013, and conflicting national standards shall be withdrawn at the latest by February 2013.

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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.

EN 1034, *Safety of machinery — Safety requirements for the design and construction of paper making and finishing machines* consists of the following parts:

— *Part 1: Common requirements*

— *Part 2: Barking drums*

— *Part 3: Rereelers and winders*

— *Part 4: Pulpers and their loading facilities*

— *Part 5: Sheeters*

— *Part 6: Calender*

— *Part 7: Chests*

— *Part 8: Refining plants*

— *Part 13: Machines for de-wiring bales and units*

— *Part 14: Reel splitter*

— *Part 16: Paper and board making machines*

— *Part 17: Tissue making machines*

— *Part 21: Coating machines* (the present document)

— *Part 22: Wood grinders*

— *Part 26: Roll packaging machines*

— *Part 27: Roll handling systems*

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece,

Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

This document is a type C standard as stated in EN ISO 12100:2010. 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: where 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+A1:2010, the provisions of this type C standard take precedence over the provisions of the other standards.

1 Scope

This European Standard applies to coating machines applying the wet process for off-line coating of base paper including unwind unit, coating units, drying section, flotation and infrared dryer, smoothing unit, integrated calender, measuring device, reel-up, integrated sheeter, drives and control system and applies together with EN 1034-1:2000+A1:2010. It deals with all significant hazards, hazardous situations and hazard events relevant to coating machines, when used as intended and under the conditions foreseen by the manufacturer (see Clause 4).

This document does not deal with pressure hazards in steam-heated drying cylinders.

NOTE Directive 97/23/EC gives essential safety requirements for equipment under pressure.

This document does not apply to:

— paper and board making machines,

— equipment for the treatment of coating substances,

— coating machines using solvent-based colours,

— coating machines applying silicon, adhesives or resin onto the paper web,

— printing and varnishing machines,

— integrated conveyors and cranes designed for transporting reels/shells (reel spools) and for machine maintenance,

— integrated fire extinguishing equipment.

This document is not applicable to coating machines which are manufactured before the date of publication as an EN.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 349:1993+A1:2008, *Safety of machinery — Minimum gaps to avoid crushing of parts of the human body*

EN 547-1:1996+A1:2008, *Safety of machinery — Human body measurements — Part 1: Principles for determining the dimensions required for openings for whole body access into machinery*

EN 574:1996+A1:2008, *Safety of machinery — Two-hand control devices — Functional aspects — Principles for design*

EN 614-1:2006+A1:2009, *Safety of machinery — Ergonomic design principles — Part 1: Terminology and general principles*

EN 614-2:2000+A1:2008, *Safety of machinery — Ergonomic design principles — Part 2: Interaction between the design of machinery and work tasks*

EN 626-1:1994+A1:2008, *Safety of machinery — Reduction of risks to health from hazardous substances emitted by machinery — Part 1: Principles and specifications for machinery manufacturers*

EN 746-1:1997+A1:2009, *Industrial thermoprocessing equipment — Part 1: Common safety requirements for industrial thermoprocessing equipment*

EN 894-1:1997+A1:2008, *Safety of machinery — Ergonomic requirements for the design of displays and control actuators — Part 1: General principles for human interactions with displays and control actuators*

EN 894-2:1997+A1:2008, *Safety of machinery — Ergonomic requirements for the design of displays and control actuators — Part 2: Displays*

EN 953:1997+A1:2009, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards*

EN 1034-1:2000+A1:2010, *Safety of machinery — Safety requirements for the design and construction of paper making and finishing machines — Part 1: Common requirements*

EN 1034-4:2005+A1:2009, *Safety of machinery — Safety requirements for the design and construction of paper making and finishing machines — Part 4: Pulpers and their loading facilities*

EN 1034-5:2005+A1:2009, *Safety of machinery — Safety requirements for the design and construction of paper making and finishing machines — Part 5: Sheeters*

EN 1034-6:2005+A1:2009, *Safety of machinery — Safety requirements for the design and construction of paper making and finishing machines — Part 6: Calenders*

EN 1037:1995+A1:2008, *Safety of machinery — Prevention of unexpected start-up*

EN 1088:1995+A2:2008, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection*

EN 1760-1:1997+A1:2009, *Safety of machinery — Pressure sensitive protective devices — Part 1: General principles for the design and testing of pressure sensitive mats and pressure sensitive floors*

EN 1760-2:2001+A1:2009, *Safety of machinery — Pressure sensitive protective devices — Part 2: General principles for the design and testing of pressure sensitive edges and pressure sensitive bars*

EN 1837:1999+A1:2009, *Safety of machinery — Integral lighting of machines*

EN 12198-1:2000+A1:2008, *Safety of machinery — Assessment and reduction of risks arising from radiation emitted by machinery — Part 1: General principles*

EN 13023:2003+A1:2010, *Noise measurement methods for printing, paper converting, paper making machines and auxiliary equipment — Accuracy grades 2 and 3*

EN 13478:2001+A1:2008, *Safety of machinery — Fire prevention and protection*

EN 60204-1:2006, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2005, modified)*

EN 60204-11:2000, *Safety of machinery — Electrical equipment of machines — Part 11: Requirements for HV equipment for voltages above 1 000 V a.c. or 1 500 V d.c. and not exceeding 36 kV (IEC 60204-11:2000)*

EN 61000-6-2:2005, *Electromagnetic compatibility (EMC) — Part 6-2: Generic standards — Immunity for industrial environments (IEC 61000-6-2:2005)*

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

EN 61511-1:2004, *Functional safety — Safety instrumented systems for the process industry sector — Part 1: Framework, definitions, system, hardware and software requirements (IEC 61511-1:2003 + Corrigendum 2004)*

EN 61511-2:2004, *Functional safety — Safety instrumented systems for the process industry sector — Part 2: Guidelines for the application of IEC 61511-1 (IEC 61511-2:2003)*

EN 61800-3:2004, *Adjustable speed electrical power drive systems — Part 3: EMC requirements and specific test methods (IEC 61800-3:2004)*

EN 62061:2005, *Safety of machinery — Functional safety of safety-related electrical, electronic and programmable electronic control systems (IEC 62061:2005)*

EN ISO 4413:2010, *Hydraulic fluid power — General rules and safety requirements for systems and their components (ISO 4413:2010)*

EN ISO 4414:2010, *Pneumatic fluid power — General rules and safety requirements for systems and their components (ISO 4414:2010)*

EN ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction (ISO 12100:2010)*

EN ISO 13732-1:2008, *Ergonomics of the thermal environment — Methods for the assessment of human responses to contact with surfaces — Part 1: Hot surfaces (ISO 13732-1:2006)*

EN ISO 13849-1:2008, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2006)*

EN ISO 13849-2:2008, *Safety of machinery — Safety-related parts of control systems — Part 2: Validation (ISO 13849-2:2003)*

EN ISO 13850:2008, *Safety of machinery — Emergency stop — Principles for design (ISO 13850:2006)*

EN ISO 13855:2010, *Safety of machinery — Positioning of safeguards with respect to the approach speeds of parts of the human body (ISO 13855:2010)*

EN ISO 13857:2008, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857:2008)*

EN ISO 14122-1:2001, *Safety of machinery — Permanent means of access to machinery — Part 1: Choice of 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 walkways (ISO 14122-2:2001)*

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

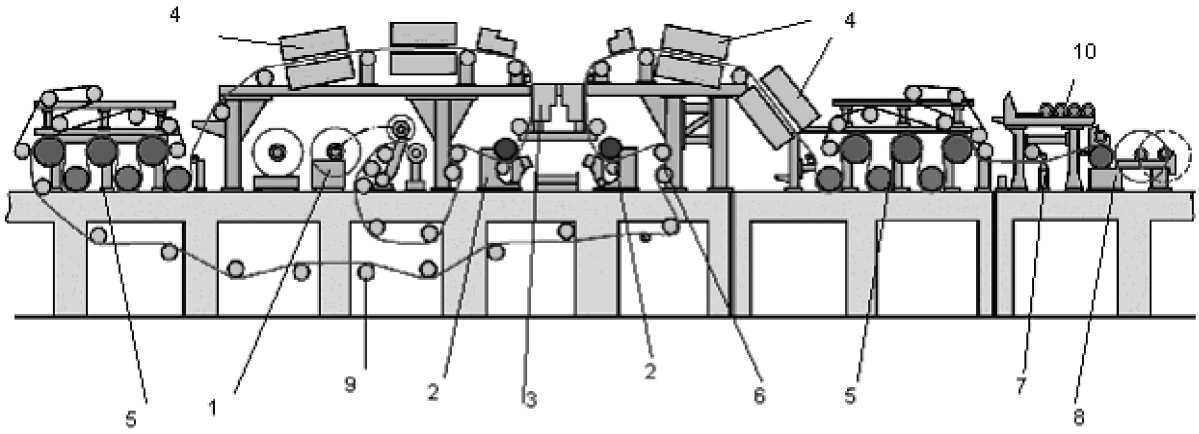
EN ISO 14122-4:2004, *Safety of machinery — Permanent means of access to machinery — Part 4: Fixed ladders (ISO 14122-4:2004)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1034-1:2000+A1:2010, EN ISO 12100:2010 and the following definitions apply.

3.1
coating machine
machine for coating paper web which consists of several machine sections/functional units including the unwinding section, coating units, infrared dryers, moistening device, flotation dryers, drying section with steam-heated cylinders, pull rolls, calenders, measuring device and reel up section including drive and control systems

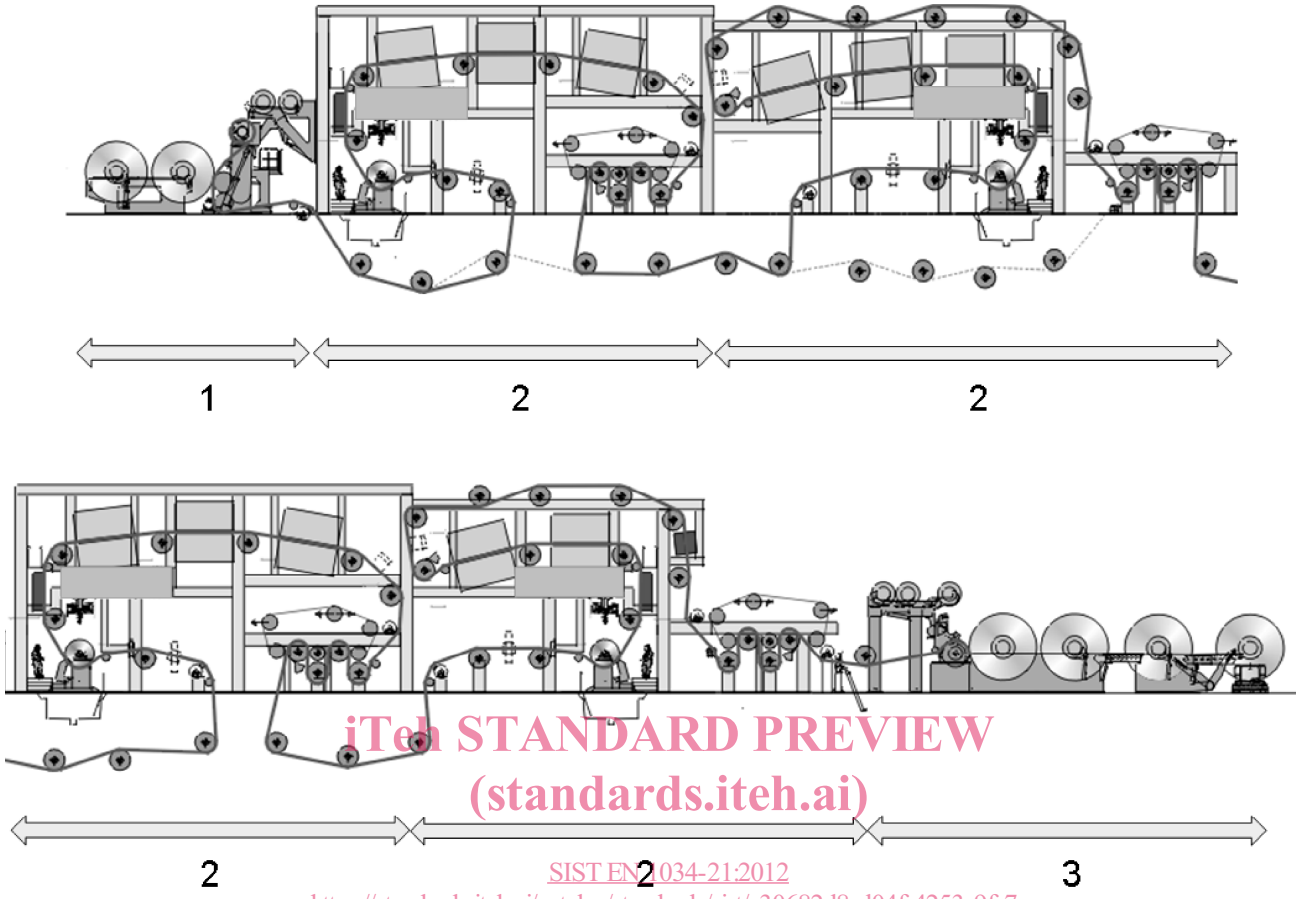
Note 1 to entry: In Figures 1 and 2 examples of coating machines are shown.



Key

1	unwind	5	drying section with steam-heated cylinders	9	rolls
2	coating unit	6	S-type pull group	10	shell (reel spool)
3	infrared dryer	7	measuring device		
4	flotation dryer	8	reel up section		

Figure 1 — Example of a coating machine



Key

1 unwind
2 coating section
3 reel up section

Figure 2 — Example of a coating machine with four coating sections

3.2
unwind
machine section for unwinding the paper web from the paper reel wound onto a shell (reel spool), a winding shaft or a core

3.2.1
unwind with winding shaft
unit unwinding the paper reel from a shell (reel spool) or a winding shaft

3.2.2
shaftless unwind
unit unwinding the paper reel from a core made of metal or cardboard

Note 1 to entry: Chucking cones are inserted on both sides of the core in order to secure the reel.

3.2.3
unwind with winding mandrel
unwind equipped with a mandrel for taking up the reel with core

3.3
pull stacks
pair of driven rolls forming a nip for pulling the paper web