
Varnost strojev - Varnostne zahteve za načrtovanje in konstrukcijo strojev in opreme za izdelavo papirja - 26. del: Stroji za pakiranje zvitkov

Safety of machinery - Safety requirements for the design and construction of paper making and finishing machines - Part 26: Roll packaging machines

Sicherheit von Maschinen - Sicherheitsanforderungen an Konstruktion und Bau von Maschinen der Papierherstellung und Ausrüstung - Teil 26: Rollenpackmaschinen

Sécurité de machines - Exigences techniques de sécurité pour la conception et la construction de machines de fabrication et de finition du papier - Partie 26: Machines à emballer les bobines

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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 26:
Roll packaging machines**

Sécurité des machines - Prescriptions de sécurité pour la
conception et la construction de machines de fabrication et
de finition du papier - Partie 26: Machines à emballer les
bobines

Sicherheit von Maschinen - Sicherheitstechnische
Anforderungen an Konstruktion und Bau von Maschinen
der Papierherstellung und Ausrüstung - Teil 26:
Rollenpackmaschinen

This European Standard was approved by CEN on 19 February 2012.

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EN 1034-26:2012 (E)**Foreword**

This document (EN 1034-26:2012) 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of an identical text or by endorsement, at the latest by October 2012, and conflicting national standards shall be withdrawn at the latest by October 2012.

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 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, Bulgaria, Croatia, 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, Turkey and the United Kingdom.

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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.

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EN 1034-26:2012 (E)**1 Scope**

This European Standard applies to roll packaging machines for use in papermaking and applies together with EN 1034-1:2000+A1:2010. It deals with all significant hazards, hazardous situations and hazardous events relevant to roll packaging machines, when used as intended and under the conditions foreseen by the manufacturer (see Clause 4).

This document is not applicable to roll packaging 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 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: Interactions between the design of machinery and work tasks*

EN 619:2002+A1:2010, *Continuous handling equipment and systems - Safety and EMC requirements for equipment for mechanical handling of unit loads*

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 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 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*

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

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

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

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 10218-1:2011, *Robots for industrial environments — Safety requirements — Part 1: Robot (ISO 10218-1:2011)*

EN ISO 10218-2, *Robots for industrial environments — Safety requirements — Part 2: Robot system and integration (ISO 10218-2)*

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 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 the upper and lower limbs (ISO 13857:2008)*

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)*

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 apply:

3.1

roll packaging machine

machine used for packaging paper rolls; the rolls are mounted on supporting drums and their axial rotational movement causes them to be wrapped with a paper or plastic web and, where applicable, head discs (cardboard discs) are finally applied to the ends of the rolls by pressing and gluing, consisting of several machine sections/functional units including packaging material unwind(s), packaging unit, folding device, head disc press, rolls for pulling the packaging material, integrated conveyors, robots, roll pusher, roll stopper, drives and control system

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Note 1 to entry: Figures in Annex A illustrate the principles of roll packaging machines.

3.2**roll**

paper roll

3.3**packaging material unwind**

unwind for rolls of packaging paper or plastic film

3.4**packaging unit**

unit with supporting drums allowing rotation of the roll for packaging

3.5**folding device**

device usually with rotating and pivoted paddles for folding packaging paper side laps over rolls

3.6**centring station**

unit for moving the rolls in the direction of the axle for centring them before the packaging process

3.7**head disc press**

device for pressing and affixing the head discs provided with for example, glue or hotmelt glue onto the roll ends

3.8**head disc**

round disc cut from paper or cardboard

3.9**roll pusher**

device for pushing rolls so that they roll to another position

3.10**roll stopper**

device for catching and retaining the rolling roll so that it stops in a specified position

3.11**rolling deck**

area where the rolls roll by impact from a roll pusher or by gravity to a roll stopper

3.12**roll-in-area**

area where the rolls are transported e.g. by a conveyor into the roll packaging machine

3.13**roll-out-area**

area where the rolls are transported e.g. by a conveyor out of the roll packaging machine

3.14**integrated conveyor**

conveyor for roll handling in the area of the roll packaging machine

3.15**labelling station**

station intended for marking the rolls or for applying labels onto the rolls manually or in an automatic operation e.g. using a robot

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4 List of significant hazards

This clause contains all significant hazards, hazardous situations and hazard events, as far as they are dealt with in this standard, which are identified by risk assessment as significant for this type of machinery and which require action to eliminate or reduce the risk.

Table 1 — List of significant hazards (1 of 2)

No	Hazard		sub-clause of this standard	EN 1034-1:2000+A1:2010
	Origin (source)	Potential consequences		
Mechanical hazards				
1	Inadequate design of workplaces, means of access, walkways, passageways	Slipping, tripping and falling, fractures of arms and legs, injury of head by impact	5.2; 5.18.1; 5.19.2	5.5; 5.5.9
2	Inrunning nips on conveyors, rotating rolls and drums, rollers Wrapping points on transmissions elements	Drawing-in or trapping, crushing, amputation	5.3; 5.13; 5.16.1; 5.16.2; 5.19.3	5.1; 5.4; 5.7
3	Linear movements of machinery parts	Crushing, shearing, impact injuries, contusion	5.3; 5.16.1; 5.16.2; 5.17; 5.22.2	5.1; 5.3; 5.7
4	Swivelling machinery parts	Shearing, crushing injuries	5.3; 5.16.1; 5.16.2; 5.22.1	5.1; 5.7
5	Knives, sharp edges of machinery frame	Cutting injuries	5.1; 5.20; 5.21.1; 5.21.2	5.1; 5.11; 5.12
6	Movement of rolls	Crushing, impact injuries	5.16.1; 5.16.3	5.1
7	Hydraulic and pneumatic equipment	Injuries by ejection of high-pressure fluids	5.10; 5.11	5.24; 5.25
8	Ejection and falling of machinery parts	Crushing, impact of persons	5.18.3	5.2
Electrical hazards				
9	Electrical equipment	Electric shock, death, fire, burning and blinding by electric arc	5.9.1	5.23
10	Electrical equipment	Outside effects on electrical equipment	5.9.2	5.23
Thermal hazards				
11	Hot surfaces of machinery parts, head disc press, hotmelt glue jets	Burning by contact of persons	5.14; 5.16.1	5.17
Noise hazards				
12	drives, power transmission elements, hydraulic aggregate	Hearing loss, stress, interference with speech communication and acoustic signals	5.7	5.15