



SLOVENSKI STANDARD

SIST EN 15067:2008

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Plastice i gume mašine - Mašine za preradu filma za vreće i kese - Sigurnosni zahtjevi

Plastics and rubber machines - Film converting machines for bags and sacks - Safety requirements

Kunststoff- und Gummimaschinen - Folienverarbeitungsmaschinen für Beutel und Säcke - Sicherheitsanforderungen

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Machines pour les matières plastiques et le caoutchouc. Machines de fabrication de sacs et sachets - Prescriptions de sécurité

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English Version

Plastics and rubber machines - Film converting machines for bags and sacks - Safety requirements

Machines pour les matières plastiques et le caoutchouc -
Machines de fabrication de sacs et sachets - Prescriptions
de sécurité

Kunststoff- und Gummimaschinen -
Folienverarbeitungsmaschinen für Beutel und Säcke -
Sicherheitsanforderungen

This European Standard was approved by CEN on 4 November 2007.

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Foreword

This document (EN 15067:2007) has been prepared by Technical Committee CEN/TC 145 “Plastics and rubber machines”, the secretariat of which is held by UNI.

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of an identical text or by endorsement, at the latest by June 2008, and conflicting national standards shall be withdrawn at the latest by June 2008.

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 Directives.

For relationship with EU Directives, see informative Annexes ZA and ZB, which are an integral part of this document.

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Introduction

This document 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 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 type C standard.

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1 Scope

This European Standard specifies the safety requirements applicable to the design and construction of film converting machines for making bags and sacks, for the significant and specific hazards listed in Clause 4.

This type of machine is based on the welding process.

A film converting machine for bags and sacks starts at the film unwinding unit or at the film inlet when this machine is directly fed by an upstream process and ends at the product collection or delivery unit.

The bag making line may include:

- 1) unwind units
- 2) slit-welding units
- 3) gussetting units
- 4) lane deviation units
- 5) perforating and welding or cutting and welding units
- 6) blocking units
- 7) pick-up and transfer units
- 8) stacking units
- 9) punching units
- 10) folding units
- 11) winding units
- 12) labelling or taping units
- 13) handle and closure units
- 14) draw tape insertion units
- 15) generators of electrostatic charge
- 16) electrostatic discharge equipment.

Printing units, high frequency welding machines and the design and construction of electrostatic generators are not covered by this standard.

Ultrasonic radiation hazards resulting from ultrasonic welding devices, e.g. integrated in handle and closure units, are not covered by this standard.

Film converting machines for bags and sacks generally do not create explosive atmospheres. In principle they therefore correspond with line F of Table 2 of the ATEX Guideline and consequently do not fall within the scope of Directive 94/9/EC.

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

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

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 protective devices — Part 1: General principles for the design and testing of pressure sensitive mats and pressure sensitive floors*

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

EN 60529:1991, *Degrees of protection provided by enclosures (IP code) (IEC 60529:1989)*

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

EN ISO 3744:1995, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering method in an essentially free field over a reflecting plane (ISO 3744:1994)*

EN ISO 3746:1995, *Acoustics — Determination of sound power levels of noise sources using sound pressure - Survey method using an enveloping measurement surface over a reflecting plane (ISO 3746:1995)*

EN ISO 3747:2000, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Comparison method for use in situ (ISO 3747:2000)*

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

EN ISO 9614-2:1996, *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 2: Measurement by scanning (ISO 9614-2:1996)*

EN ISO 11201:1995, *Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at a work station and at other specified positions — Engineering method in an essentially free field over a reflecting plane (ISO 11201:1995)*

EN ISO 11202:1995, *Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at a work station and at other specified positions — Survey method in situ (ISO 11202:1995)*

EN ISO 11204:1995, *Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at a work station and at other specified positions — Method requiring environmental corrections* (ISO 11204:1995)

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 13732-1:2006, *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 13850:2006, *Safety of machinery - Emergency stop - Principles for design* (ISO 13850:2006)

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)

CENELEC Report R044-001:1999, *Safety of machinery - Guidance and recommendations for the avoidance of hazards due to static electricity*

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3 Terms and definitions

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

3.1
unwind unit
device for unwinding film. The different types are distinguished by their drives. A distinction is made between centre and surface unwind units

3.1.1
centre unwind unit
unwinding device with a central drive to the winding core

3.1.2
surface unwind unit
unwinding device whose drive relies on peripheral friction on the reel surface

3.2
slit-welding unit
device with a hot element for longitudinal cutting and welding of the film

3.3
gussetting unit
device for creating longitudinal folds in a tube of film

3.4
lane deviation unit
device for diverging or converging the film lanes

3.5**perforating and welding or cutting and welding unit**

device that perforates and seals or cuts and seals the film transversely

3.6**blocking unit**

device for placing bags one upon another and which may also stick them together

3.7**pick-up and transfer unit**

device for picking up, transferring and conveying bags

3.8**stacking unit**

device for stacking bags

3.9**wicket arm**

device for stacking bags on pins via rotating transfer arms

3.10**punching unit**

device to create a shaped cut in film or bags

3.11**folding unit**

device for the longitudinal and/or transverse folding of the bags

3.12**winding unit**

device to wind-up bags in a roll

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3.13**labelling or taping unit**

device for applying a label or a tape on or around a roll

3.14**handles and closure unit**

device for attaching or creating handles or placing a closing system in the bag

3.15**draw tape insertion unit**

device for the insertion of an additional strip of film into the top hem of the bag

3.16**non-driven roll**

roll for guiding film or sheet through the machine and which is driven by the film

3.17**driven roll**

powered roll that pulls the film by means of surface contact (friction)

3.18**nip rolls**

rolls that are pressed one against the other; one at least is driven. The film is drawn through the nip by the nipping effect

3.19

dancing roll

guide roll that is pivoted on a point and over which the film runs (see figure 1). The load of the dancing roll determines the tension of the film

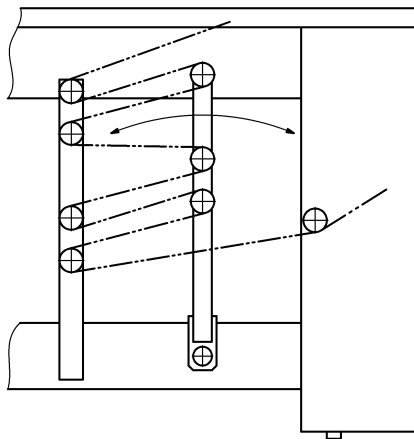


Figure 1 — Dancing roll

3.20

suspended roll

guide roll that reciprocates between guides in a linear direction and over which the film runs (see Figure 2). The load of the suspended roll determines the film tension

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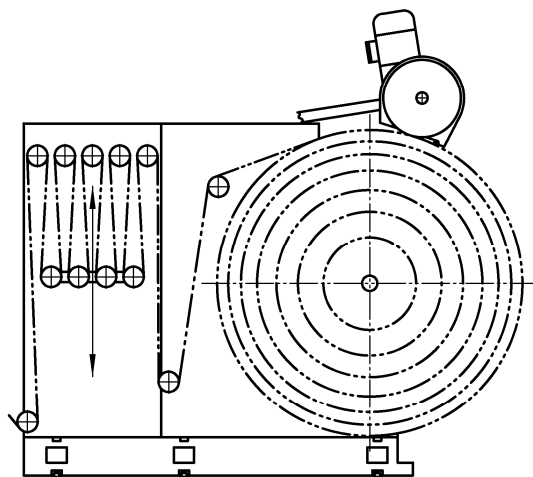


Figure 2 — Suspended roll

3.21

reel lifting arms

pair of arms for loading, supporting and unloading reels