

**Pakkemasinate ohutus. Osa 10: Üldnõuded**

**Safety of packaging machines - Part 10: General Requirements**

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 415-10:2014 sisaldab Euroopa standardi EN 415-10:2014 inglisekeelset teksti.	This Estonian standard EVS-EN 415-10:2014 consists of the English text of the European standard EN 415-10:2014.
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English Version

## Safety of packaging machines - Part 10: General Requirements

Sécurité des machines d'emballage - Partie 10:  
Prescriptions générales

Sicherheit von Verpackungsmaschinen - Teil 10:  
Allgemeine Anforderungen

This European Standard was approved by CEN on 12 October 2013.

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**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

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## Foreword

This document (EN 415-10:2014) has been prepared by Technical Committee CEN/TC 146 “Packaging machines - Safety”, 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of an identical text or by endorsement, at the latest by July 2014, and conflicting national standards shall be withdrawn at the latest by July 2014.

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.

This standard is part of a series of standards comprising the following parts:

- EN 415-1, *Packaging machines safety — Part 1: Terminology and classification of packaging machines and associated equipment*;
- EN 415-2, *Packaging machines safety — Part 2: Pre-formed rigid container packaging machines*;
- EN 415-3, *Safety of packaging machines — Part 3: Form, fill and seal machines*;
- EN 415-4, *Safety of packaging machines — Part 4: Palletizers and depalletizers*;
- EN 415-5, *Safety of packaging machines — Part 5: Wrapping machines*;
- EN 415-6, *Safety of packaging machines — Part 6: Pallet wrapping machines*;
- EN 415-7, *Safety of packaging machines — Part 7: Group and secondary packaging machines*;
- EN 415-8, *Safety of packaging machines — Part 8: Strapping machines*;
- EN 415-9, *Safety of packaging machines — Part 9: Noise measurement methods for packaging machines, packaging lines and associated equipment, grade of accuracy 2 and 3*;
- EN 415-10, *Safety of packaging machines — Part 10: General requirements* (the present 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, 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

Packaging machines are used extensively in Europe in an increasingly wide range of industries. They contain several significant hazards that have the potential to cause serious injury.

This document is a Type C standard as defined in the Introduction of EN ISO 12100:2010.

The requirements of the machine specific parts of EN 415 take precedence over the requirements of EN 415-10. The requirements of the machine specific parts of EN 415 may supplement or modify the corresponding clauses of EN 415-10.

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

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.



## 1 Scope

This European Standard gives general requirements for packaging machines which are defined in the scope of EN 415-1 or are in the scope of another relevant machine specific part of EN 415. When used together with a relevant machine specific part of EN 415, it gives the requirements for that specific type of machine.

This document deals with safety requirements and their verification for design, construction, installation, commissioning, operation, adjustment, maintenance and cleaning of packaging machines when used as intended and under the conditions of misuse foreseeable by a manufacturer.

The extent to which hazards, hazardous situations and events are covered is indicated in Clause 4.

The hazards on a specific machine can vary depending on its working principle; the type, size and mass of the product; the packaging material; auxiliary equipment attached to the machine and the environment in which the machine is used. If the machine presents hazards that are not dealt with in this standard, the manufacturer should assess these hazards by using the principles detailed in EN ISO 12100:2010. Such deviations or additions are outside the scope of this standard.

### Exclusions

This European Standard is not applicable to the following:

- machines that were manufactured before the date of publication of this document by CEN.

This standard does not consider the following:

- the risk resulting from the use of machines in public accessed areas.

NOTE For machines used in public accessed areas different or additional requirements can apply. It is the responsibility of the manufacturer to identify such additional risks, which are outside the scope of this standard or such deviating risks which arise from this specific use, and provide suitable protective measures in accordance with EN ISO 12100.

- the use of packaging machines in potentially explosive atmospheres;
- specific health, safety or hygiene hazards associated with the products that may be handled by the machines, but does include general advice on this subject;
- hazards that may be associated with decommissioning packaging machines.

## 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, *Safety of machinery - Minimum gaps to avoid crushing of parts of the human body*

EN 415-1, *Packaging machines safety - Part 1: Terminology and classification of packaging machines and associated equipment*

EN 415-9, *Safety of packaging machines - Part 9: Noise measurement methods for packaging machines, packaging lines and associated equipment, grade of accuracy 2 and 3*

EN 614-1, *Safety of machinery - Ergonomic design principles - Part 1: Terminology and general principles*

EN 614-2, *Safety of machinery - Ergonomic design principles - Part 2: Interactions between the design of machinery and work tasks*

EN 618, *Continuous handling equipment and systems - Safety and EMC requirements for equipment for mechanical handling of bulk materials except fixed belt conveyors*

EN 619, *Continuous handling equipment and systems - Safety and EMC requirements for equipment for mechanical handling of unit loads*

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

EN 953, *Safety of machinery - Guards - General requirements for the design and construction of fixed and movable guards*

EN 1005-2, *Safety of machinery - Human physical performance - Part 2: Manual handling of machinery and component parts of machinery*

EN 1005-3, *Safety of machinery - Human physical performance - Part 3: Recommended force limits for machinery operation*

EN 1005-4, *Safety of machinery - Human physical performance - Part 4: Evaluation of working postures and movements in relation to machinery*

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

EN 1672-2:2005+A1:2009, *Food processing machinery - Basic concepts - Part 2: Hygiene requirements*

EN 1837, *Safety of machinery - Integral lighting of machines*

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

EN 12198-2, *Safety of machinery - Assessment and reduction of risks arising from radiation emitted by machinery - Part 2: Radiation emission measurement procedure*

EN 12198-3, *Safety of machinery - Assessment and reduction of risks arising from radiation emitted by machinery - Part 3: Reduction of radiation by attenuation or screening*

EN 13478, *Safety of machinery - Fire prevention and protection*

EN 60204-1:2006,<sup>1)</sup> *Safety of machinery - Electrical equipment of machines - Part 1: General requirements (IEC 60204-1:2005, mod.)*

EN 60529:1991,<sup>2)</sup> *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)*

EN 60825-1:2007, *Safety of laser products - Part 1: Equipment classification and requirements (IEC 60825-1:2007)*

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1) This standard is impacted by the stand-alone amendment EN 60204-1:2006/A1:2009, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (EN 60204-1:2005/A1:2008)*

2) This standard is impacted by the stand-alone amendment EN 60529:1991/A1:2000, *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989/A1:1999)* and EN 60529:1991/A2:2013, *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989/A2:2013)*.

- EN 60947-5-5, *Low voltage switchgear and controlgear - Part 5-5: Control circuit devices and switching elements - Electrical emergency stop device with mechanical latching function (IEC 60947-5-5)*
- EN 61310-3, *Safety of machinery - Indication, marking and actuation - Part 3: Requirements for the location and operation of actuators (IEC 61310-3:2007)*
- EN 61496-1:2004+A1:2008, *Safety of machinery - Electro-sensitive protective equipment - Part 1: General requirements and tests (IEC 61496-1:2004, mod.)*
- EN 61800-5-2:2007, *Adjustable speed electrical power drive systems - Part 5-2: Safety requirements - Functional (IEC 61800-5-2:2007)*
- 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 7010, *Graphical symbols - Safety colours and safety signs - Registered safety signs (ISO 7010)*
- EN ISO 11553-1:2008, *Safety of machinery - Laser processing machines - Part 1: General safety requirements (ISO 11553-1:2005)*
- 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 13732-3:2008, *Ergonomics of the thermal environment - Methods for the assessment of human responses to contact with surfaces - Part 3: Cold surfaces (ISO 13732-3:2005)*
- 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 13850, *Safety of machinery - Emergency stop - Principles for design (ISO 13850)*
- 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 13856-1, *Safety of machinery – Pressure-sensitive protective devices – Part 1: General principles for design and testing of pressure-sensitive mats and pressure-sensitive floors (ISO 13856-1)*
- EN ISO 13856-2, *Safety of machinery – Pressure-sensitive protective devices – Part 2: General principles for design and testing of pressure-sensitive edges and pressure-sensitive bars (ISO 13856-2)*
- 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 14119:2013, *Safety of machinery – Interlocking devices associated with guards – Principles for design and selection (ISO 14119:2013)*

EN ISO 14122-1:2001,<sup>3)</sup> *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, *Safety of machinery - Permanent means of access to machinery - Part 2: Working platforms and walkways (ISO 14122-2)*

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

CLC/TS 61496-2, *Safety of machinery - Electro-sensitive protective equipment - Part 2: Particular requirements for equipment using active opto-electronic protective devices (AOPDs) (IEC/TS 61496-2)*

CLC/TS 61496-3, *Safety of machinery - Electro-sensitive protective equipment - Part 3: Particular requirements for Active Opto-electronic Protective Devices responsive to Diffuse Reflection (AOPDDR) (IEC/TS 61496-3)*

ISO 3864-1, *Graphical symbols - Safety colours and safety signs - Part 1: Design principles for safety signs and safety markings*

ISO 3864-2, *Graphical symbols - Safety colours and safety signs - Part 2: Design principles for product safety labels*

ISO 3864-3, *Graphical symbols - Safety colours and safety signs - Part 3: Design principles for graphical symbols for use in safety signs*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100:2010, EN 60204-1:2006, EN 415-1 and the following apply.

#### 3.1 change parts

machine parts designed to handle a specific product, packaging material or pack size that are changed when the machine is set up to handle a different product, packaging material or pack size

#### 3.2 film compensator

device which maintains a constant film tension

#### 3.3 film reel mandrel

device which may be fixed to the machine or which is loose and which supports a reel of film

#### 3.4 hot melt adhesive

adhesive that is solid at room temperature and which can be applied at elevated temperature

#### 3.5 minimum distance

calculated distance between the safeguard and the hazard zone necessary to prevent a person or part of a person reaching the hazard zone before the termination of the hazardous machine function

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3) This standard is impacted by the stand-alone amendment EN ISO 14122-1:2001/A1:2010, *Safety of machinery — Permanent means of access to machinery — Part 1: Choice of fixed means of access between two levels — Amendment 1 (ISO 14122-1:2001/Amd 1:2010)*.