

**Pakkemasinate ohutus. Osa 1: Pakkemasinate ja nende  
tarvikute terminoloogia ja klassifikatsioon**

**Safety of packaging machines - Part 1: Terminology and  
classification of packaging machines and associated  
equipment**

## EESTI STANDARDI EESSÕNA

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See Eesti standard EVS-EN 415-1:2014 sisaldab Euroopa standardi EN 415-1:2014 inglisekeelset teksti.	This Estonian standard EVS-EN 415-1:2014 consists of the English text of the European standard EN 415-1:2014.
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English Version

## Safety of packaging machines - Part 1: Terminology and classification of packaging machines and associated equipment

Sécurité des machines d'emballage - Partie 1: Terminologie et classification des machines d'emballage et de l'équipement associé

Sicherheit von Verpackungsmaschinen - Teil 1: Terminologie und Klassifikation von Verpackungsmaschinen und zugehörigen Ausrüstungen

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## Foreword

This document (EN 415-1:2014) 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of an identical text or by endorsement, at the latest by January 2015 and conflicting national standards shall be withdrawn at the latest by January 2015.

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 supersedes EN 415-1:2000+A1:2009.

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 Directives, see informative Annex ZA, which is an integral part of this document.

This part 1 of EN 415, *Safety of packaging machines* belongs to a series of documents, the other parts of which are the following:

- *Part 2: Pre-formed rigid container packaging machines*
- *Part 3: Form, fill and seal machines*
- *Part 4: Palletisers and depalletisers*
- *Part 5: Wrapping machines*
- *Part 6: Pallet wrapping machines*
- *Part 7: Group and secondary packaging machines*
- *Part 8: Strapping machines*
- *Part 9: Noise measurement methods for packaging machines, packaging lines and associated equipment, grade of accuracy 2 and 3*
- *Part 10: General requirements*

### Standards for packaging machines

The appropriate standard to find safety requirements for a particular packaging machine defined in Clause 3, is indicated in Annex A of this standard.

**NOTE** In most cases the safety requirements will be found in another part of EN 415, however for a few machines the safety requirements will be found in another type of standard.

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 many hazards and have the potential to cause serious injury.

There are an enormous variety of packaging machines, but hitherto there has been no internationally agreed nomenclature. This has led to confusion when reporting accidents and interpreting accident and trade statistics. The purpose of this standard is to name and define each group of packaging machines uniquely. In most cases, these names will already be in common use, however in some cases the commonly used name is ambiguous, a trade name, or used to describe more than one significantly different type of machine. In these cases, a less familiar name will be defined. The identification of specific types of packaging machines and their definition assists in the correct application of the EN 415 series of standards and other standards that may be relevant for packaging machines. Machine designers, manufacturers, suppliers, importers, users, enforcing authorities and other interested bodies are encouraged to use the nomenclature in this type “C” standard to improve communication and to avoid confusion, particularly when reporting accidents and preparing the documentation required by EU Directives.

## 1 Scope

This European Standard defines the field of packaging machines. The machines defined fall within the following general groups:

- filling machines;
- closing machines;
- labelling, decorating and coding machines;
- cleaning, sterilizing, cooling and drying machines;
- fill and seal machines;
- inspection machines;
- container and packaging component handling machines;
- form, fill and seal machines;
- carton erecting, carton closing and cartoning machines;
- wrapping machines;
- group or secondary packaging machines;
- palletizers, depalletizers and ancillary equipment;
- pallet wrapping machines;
- strapping machines.

This part of EN 415 indicates the relevant machine specific part of EN 415, or another relevant standard, where safety requirements for dealing with the hazards associated with these machines can be found.

## 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 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: Palletisers and depalletisers*

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 415-10, *Safety of packaging machines — Part 10: General requirements*

EN 422, *Plastics and rubber machines — Blow moulding machines — Safety requirements*

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

EN ISO 10821, *Industrial sewing machines — Safety requirements for sewing machines, units and systems (ISO 10821)*

EN ISO 11553-1, *Safety of machinery — Laser processing machines — Part 1: General safety requirements (ISO 11553-1)*

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

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

#### 3.0

##### **packaging machine**

machine used to package a product

#### 3.1 Filling machines

This group of packaging machines measures out a product from bulk by some predetermined value, e.g. volume, level in a container, mass or count. The terms listed below describe the method of measuring out or dosing the product. The filling machine may comprise one or a number of dosing devices which may be arranged with or without a mechanism to control containers or packages as they are filled.

Filling machines of all kinds are typically supplied in three main forms:

- a) single head machines;
- b) in-line machines - with several filling heads arranged side by side;
- c) rotary machines - with several filling heads arranged on a rotating carousel.

**NOTE** The term filling machine will generally be used when the product is being dispensed into a package, however the identical machine may also be termed a dosing machine or depositor when the product is dispensed into something other than a package, e.g. onto a tray to form part of a ready meal.

##### 3.1.1 Volumetric filling machines

This group of filling machines measures out the product using a means of measuring volume which does not relate to the volume of the container in which they are placed e.g. measuring the volume in a cup, a piston or with a flowmeter.

###### 3.1.1.1

##### **volumetric cup filling machine**

filling machine which measures out a product, usually free-flowing solids or powder, in a cup of predetermined volume