

**Pakkemasinate ohutus. Osa 2:
Eelvormitud jäigad
konteinerpakkemasinad**

Packaging machines safety - Part 2: Pre-formed
rigid container packaging machines

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 415-2:2000 sisaldab Euroopa standardi EN 415-2:1999 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 16.06.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 415-2:2000 consists of the English text of the European standard EN 415-2:1999.</p> <p>This document is endorsed on 16.06.2000 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala: This standard specifies the safety requirements for the design and manufacture of pre-formed rigid container packaging machinery and the information that should be made available to the user of these machines.</p>	<p>Scope: This standard specifies the safety requirements for the design and manufacture of pre-formed rigid container packaging machinery and the information that should be made available to the user of these machines.</p>
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ICS 55.200

Võtmesõnad:

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English version

Packaging machines safety - Part 2: Pre-formed rigid container packaging machines

Sécurité des machines d'emballages - Partie 2: Machines d'emballage pour contenants rigides préformés

Sicherheit von Verpackungsmaschinen - Teil 2: Verpackungsmaschinen für vorgefertigte formstabile Packmittel

This European Standard was approved by CEN on 14 November 1998.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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FOREWORD

This European Standard 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 June 2000, and conflicting national standards shall be withdrawn at the latest by June 2000.

This European Standard 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 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

0. INTRODUCTION

This European Standard is a type 'C' standard as stated in EN1070: 1998. The machinery concerned and the extent to which hazards are covered are indicated in the scope of this standard.

It is the intention of this standard to allow innovative safety systems which can provide the equivalent or a greater degree of protection.

This standard is one of a series of 'C' standards relating to the safety of packaging machines. These standards include:

- EN 415-1: Packaging machines safety - Terminology and classification of packaging machines and associated equipment
- EN 415-3: Packaging machines safety - Form, fill and seal machines
- EN 415-4: Packaging machines safety - Palletisers and depalletisers

1. SCOPE

This standard specifies the safety requirements for the design and manufacture of pre-formed rigid container packaging machinery and the information that should be made available to the user of these machines.

All the significant hazards (see clause 4) arising from the machines included in this part of the standard are covered except for hazards associated with ancillary equipment for evacuating gases, cooling/refrigeration equipment associated with packaging machines, steam services supplying packaging machines, substances being filled (see annex C for guidance), hygiene principles (see annex D for guidance) and substances for cleaning/sterilising (see annex E for guidance).

The following machines are included:

- Filling machines (other than cask, keg and barrel filling machines)
- Capping, closing and sealing/seaming machines
- Container cleaning machines (other than cask, keg and barrel cleaning machines)
- In-line and rotary rinsing and air cleaning machines
- Labelling, decorating, coding and marking machines
- Decapping/unscrewing machines
- Inspection and ejection machines
- Machines that apply wiring to secure stoppers in bottles
- Machines which rinse, inspect, fill, seal and label containers
- Keg and cask turning, pushing, cleaning and filling machines (but not multi-lane plants)
- Packing, unpacking and unscrambling machines
- Unpressurised pasteurisers and back-cooling machines
- Vertical and horizontal sterilising machines

For information, schematic drawings showing typical combinations of rigid container packaging machines for beverages are included (see Figures 1, 2 and 3).

The following machines are not included:

- Aerosol Filling and Sealing
- Multi-lane Kegging plants
- Conveyor systems which link packaging machines (they are dealt with by prEN 617, prEN 618, prEN 619, prEN 620 and prEN 741)

Before this standard is used a hazard identification and risk assessment shall be carried out to check that the hazards for the machine to be designed are the same as those identified in this standard.

This standard applies to machines which are manufactured after the date of issue of this standard.

2. NORMATIVE REFERENCES

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references subsequent amendments to, or revisions of, any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- EN 292-1: 1991 Safety of machinery
Basic concepts, general principles for design
Part 1: Basic terminology, methodology
- EN 292-2: 1991 Safety of machinery
Basic concepts, general principles for design
Part 2: Technical principles and specifications
- EN 294: 1992 Safety of machinery
Safety distances 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 415-1: 1999 Packaging machines safety
Part 1: Terminology and classification of packaging machines and associated equipment
- EN 418: 1992 Safety of machinery
Emergency stop equipment; functional aspects - Principles for design
- EN 457: 1992 Safety of machinery
Auditory danger signals - General requirements, design and testing
- EN 563: 1994 Safety of machinery
Temperature of touchable surfaces - Ergonomic data to establish temperature limit values for hot surfaces
- EN 574: 1996 Safety of machinery
Two hand control devices – Functional aspects – Principles for design
- EN 614-1: 1995 Safety of machinery
Ergonomic design principles.
Part 1: Terminology and general principles.
- EN 626-1: 1994 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: 1996 Safety of machinery
Reduction of risks to health from hazardous substances emitted by machinery -
Part 2: Methodology leading to verification procedures
- EN 811: 1996 Safety of machinery
Safety distances to prevent danger zones being reached by the lower limbs
- EN 842: 1996 Safety of machinery
Visual danger signals - General requirements, design and testing

EN 894-1: 1997	Safety of machinery Ergonomics 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	Safety of machinery Ergonomics requirements for the design of displays and control actuators Part 2: Displays
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 982: 1996	Safety of machinery Safety requirements for fluid power systems and their components Hydraulics
EN 983: 1996	Safety of machinery Safety requirements for fluid power systems and their components Pneumatics
EN 999: 1998	Safety of machinery – The positioning of protective equipment in respect of approach speed of parts of the human body
prEN 1005-1:1993	Safety of machinery Human physical performance Part 1: Terms and definitions
prEN 1005-2:1993	Safety of machinery Human physical performance Part 2: Manual handling of machinery and component parts of machinery
EN 1037: 1995	Safety of machinery Prevention of unexpected start-up
EN 1050: 1996	Safety of machinery Principles for risk assessment
EN 1070:1998	Safety of machinery Terminology
EN 1088: 1995	Safety of machinery Interlocking devices associated with guards - Principles for design and selection
EN 1093-1:1998	Safety of machinery Evaluation of the emission of airborne hazardous substances Part 1: Selection of test methods
EN 1127-1: 1997	Explosive atmospheres – Explosion prevention and protection Part 1: Basic concepts and methodology
EN 1672-2: 1997	Food processing machinery Basic concepts Part 2: Hygiene requirements

- 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
- prEN 1760-2:1996 Safety of machinery
Pressure sensitive protective devices
Part 2: General principles for the design and testing of pressure sensing edges
and pressure sensitive bars
- EN ISO 3746:1995 Acoustics
Determination of sound power levels of noise sources using sound pressure.
Survey method using an enveloping surface over a reflecting plane
(ISO 3746: 1995)
- EN ISO 4871:1996 Acoustics: Declaration and verification of noise emission values of machinery
and equipment (ISO 4871: 1996)
- EN ISO 11200:1995 Acoustics
Noise emitted by machinery and equipment - Guidelines for the
use of basic standards for the determination of emission sound
pressure level at the work station and at other specified positions (ISO
11200:1995)
- EN ISO 11204:1995 Acoustics
Noise emitted by machinery and equipment, measurement of
emission sound pressure levels at the work station and at other
specified positions – Method requiring environmental corrections (ISO
11204:1995)
- EN ISO 11688-1:1998 Acoustics
Recommended practice for the design of low noise machinery and
equipment
Part 1: Planning (ISO TR 11688-1: 1995)
- ISO EN 11689: 1996 Acoustics
Procedure for the comparison of noise emission data for machinery and
equipment (ISO 11689: 1996)
- ISO EN 11690-1: 1996 Acoustics
Recommended practice for the design of low noise workplaces containing
machinery
Part 1: Noise control strategies (ISO 11690-1: 1996)
- ISO EN 11690-2: 1996 Acoustics
Recommended practice for the design of low noise workplaces containing
machinery
Part 2: Noise control measures (ISO 11690-2: 1996)
- prEN 12198-1: 1995 Safety of machinery
Assessment and reduction of risks arising from radiation emitted by
machinery
Part 1: General principles
- prEN 12437-1: 1996 Safety of machinery
Safety by means of permanent means of access to machines and industrial
plant
Part 1: Choice of a fixed means of access between two levels

prEN 12437-2: 1996	Safety of machinery Safety by means of permanent means of access to machines and industrial plant Part 2: Fixed ladders with or without safety cages and means of barring access to such
prEN 12437-3: 1996	Safety of machinery Safety by means of permanent means of access to machines and industrial plant Part 3: Stairways, stepladders and guard rails
prEN 12437-4: 1996	Safety of machinery Safety by means of permanent means of access to machines and industrial plant Part 4: Working platforms and gangways
EN 50014: 1998	Electrical apparatus for potentially explosive atmospheres General requirements
EN 61310-1: 1995	Safety of machinery Indication, marking and actuation Part 1: Requirements for visual, auditory and tactile signals
EN 61310-2: 1995	Safety of machinery Indication, marking and actuation Part 2: Requirements for marking
EN 60079-10: 1996	Electrical apparatus for explosive gas atmospheres: Part 10: Classification for hazardous areas
EN 60204-1: 1992	Safety of machinery – Electrical equipment of machines – Specification for general requirements
EN 60529:1992	Specification for degrees of protection provided by enclosures (IP code)
EN 60825-1: 1994	Safety of laser products Part 1: Equipment classification, requirements and user's guide
EN 61496-1:1996	Safety of machinery Electro-sensitive protective equipment Part 1: General requirements and test
prEN 61496-2:1996	Safety of machinery Electro-sensitive protection equipment Part 2: Opto-electronic devices