

**Pakkemasinate ohutus. Osa 4:
Kaubaaluste pakkimis- ja
lahtipakkimismasinad**

Safety of packaging machines - Part 4: Palletisers
and depalletisers

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 415-4:1999 sisaldab Euroopa standardi EN 415-4:1997+AC:2002 ingliskeelset teksti. Käesolev dokument on jõustatud 23.11.1999 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 415-4:1999 consists of the English text of the European standard EN 415-4:1997+AC:2002. This document is endorsed on 23.11.1999 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.
--	---

Käsitlusala: Standard määrab kindlaks tühjade kaubaaluste pakkimis- või lahtipakkimismasinade konstruktsiooni kuuluvate või mittekuuluvate, punktis 3.1 määratletud pakkimis-, lahtipakkimis- ning virnastamis- ja lahtivõtmisseadmete konstruktsioonile ja valmistamisele esitatavad ohutusnõuded ning teabe nende ohutu kasutamise kohta. Pakkimismasinad ja lahtipakkimismasinad on mitmes suhtes võrdselt ohtlikud. Selles tekstis käsitletakse neid koos kui (lahti)pakkimismasinaid. Need ohutusnõuded kehtivad automaatsete ja poolautomaatsete (lahti)pakkimismasinade kohta. On võetud arvesse ohud, mis võivad tekkida seadme häälestamisel, kasutusse andmisel ja kasutuselt kõrvaldamisel, reguleerimisel, tootjafirma antud juhendile vastaval kasutamisel, hooldamisel (nii korrashoiul kui ka remontimisel) ja puhastamisel.	Scope:
--	----------------------

ICS 55.200

Võtmesõnad: kaitse mehaaniliste ohtude eest, konstruktsioon, kontroll, lahtipakkimismasinad, ohtlikud alad, ohtlikud seadmed, ohud, ohutusmeetmed, pakkimine, pakkimismasinad, seadmeohutus, teave, tehnilised hoiatused, õnnetuste vältimine

ICS 55.200

Descriptors: Palletisers.

English version

Safety of packaging machines

Part 4: Palletisers and depalletisers

Sécurité des machines d'emballage –
Partie 4: Palettiseurs et dépalettiseurs

Sicherheit von Verpackungsmaschinen –
Teil 4: Palettierer und Depalettierer

This European Standard was approved by CEN on 1996-02-24.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist 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.

CEN members are the national standards bodies of Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Contents

	PAGE
Foreword	3
0 Introduction.....	3
1 Scope.....	3
2 Normative references	4
3 Definitions and functional grouping of (de)palletisers	5
3.1 Definitions.....	5
3.2 Functional grouping of (de)palletisers.....	8
3.3 Terms used for infeed transfer devices	14
4 List of hazards.....	14
5 Safety requirements and safety measures.....	18
5.1 Hazards not covered by this standard	18
5.2 General safety measures	18
5.3 Access of personnel	18
5.4 Semi-automatic machines with manual intervention.....	19
5.5 Loss of stability of displaced loads, ejection.....	20
5.6 Maintenance and lubrication.....	20
5.7 Failure of power.....	20
5.8 Location of emergency stop devices	20
5.9 Access to operating position and routine maintenance	21
5.10 Control systems	21
6 Verification of the safety requirements and/or measures.....	23
6.1 Visual inspection.....	23
6.2 Measurement.....	23
6.3 Verification on commissioning	23
6.4 Tests.....	24
7 Information for use	24
7.1 Marking.....	24
7.2 Instruction handbook	25
Annex A (normative)	26
Examples of ways of protecting access through pallet entry and exit points.....	26
Annex ZA (informative).....	29
Clauses of this European Standard addressing essential requirements or other provisions of EU Directives	29

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 September 1997, and conflicting national standards shall be withdrawn at the latest by September 1997.

EN 415 consists of the following parts under the general title "Safety of packaging machines" :

- Part 1 Terminology and classification of packaging machines and associated equipment
- Part 2 Preformed rigid container packaging machines
- Part 3 Form, fill and seal machines
- Part 4 Palletisers and depalletisers

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).

The annex A is normative.

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

0 Introduction

The extent to which hazards are covered is indicated in the scope of this standard. In addition, machinery shall comply as appropriate with EN 292 for hazards which are not covered by this standard.

1 Scope

This standard specifies the safety requirements for the design, manufacture and information for safe use of palletisers, depalletisers, and stackers/unstackers of empty pallets integrated or not into a (de)palletiser as defined in 3.1. In many respects palletisers and depalletisers present the same risks. In this text they are referred to together as (de)palletisers.

For manipulating industrial robots used in (de)palletiser applications this standard and EN 775 apply.

These safety requirements apply to automatic and semi-automatic (de)palletisers. They take into account the hazards which may occur during setting, commissioning and decommissioning, adjustment, use according to the information given by the manufacturer, maintenance (both preventive and repair) and cleaning.

This standard does not cover the following hazards which can occur on (de)palletisers in certain circumstances :

- Heat;
- Noise;
- Radiation;
- Fumes, gas, dust;
- Vibration;
- Ergonomics (see EN 614-1:1995).

Furthermore this standard does not cover hazards arising from contents of the load (e.g. toxic or flammable materials).

Linked equipment, before and after the (de)palletiser, which is not an integral part of (de)palletising machinery, (for example pallet load securing) is not covered by this standard. This standard applies primarily to the machines which are manufactured after the date of issue of the 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	Safety of machinery - Minimum gaps to avoid crushing of parts of the human body
EN 418	Safety of machinery - Emergency stop equipment, functional aspects - Principles for design
EN 614-1:1995	Safety of machinery - Ergonomic design principles - Part 1 : Terminology and general principles
prEN 619:1991	Continuous handling equipment and systems - Equipment for mechanical handling of unit loads only - Special safety requirements for design, manufacturing, erections and commissioning stages
EN 775:1992	Manipulating industrial robots - Safety (ISO 10218:1992, modified)
prEN 953:1992	Safety of machinery - General requirements for the design and construction of guards (fixed, movable)
prEN 954-1:1992	Safety of machinery - Safety related parts of control systems - Part 1 : General principles for design
EN 982:1996	Safety requirements for fluid power systems and components - hydraulics
EN 983:1996	Safety requirements for fluid power systems and components - pneumatics
prEN 999:1993	Safety of machinery - Hand/arm speed - Approach speed of parts of the body for the positioning of safety devices
EN 1037	Safety of machinery - Prevention of unexpected start-up
EN 1050:1996	Safety of machinery - Risk assessment
ENV 1070	Safety of machinery - Terminology
EN 1088:1995	Safety of machinery - Interlocking devices associated with guards - Principles for design and selection
prEN 50100-1:1994	Safety of machinery - Electrosensitive protective equipment - Part 1 : General requirements and tests
EN 60204-1:1992	Safety of machinery - Electrical equipment of machines - Part 1 : General requirements (IEC 204-1:1992, modified)