

Toidutöötlemismasinad. Taignasegistid. Ohutus- ja hügieeninõuded

Food processing machinery - Dough mixers - Safety and hygiene requirements

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 453:2000+A1:2010 sisaldab Euroopa standardi EN 453:2000+A1:2009 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 28.02.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 23.12.2009.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 453:2000+A1:2010 consists of the English text of the European standard EN 453:2000+A1:2009.

This standard is ratified with the order of Estonian Centre for Standardisation dated 28.02.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 23.12.2009.

The standard is available from Estonian standardisation organisation.

ICS 67.260

Standardite reprodutseerimis- ja levitamiseõigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:
Aru 10 Tallinn 10317 Eesti; www.evs.ee; Telefon: 605 5050; E-post: info@evs.ee

Right to reproduce and distribute Estonian Standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without permission in writing from Estonian Centre for Standardisation.

If you have any questions about standards copyright, please contact Estonian Centre for Standardisation:
Aru str 10 Tallinn 10317 Estonia; www.evs.ee; Phone: +372 605 5050; E-mail: info@evs.ee

English Version

Food processing machinery - Dough mixers - Safety and hygiene requirements

Machines pour les produits alimentaires - Pétrins -
Prescriptions relatives à la sécurité et l'hygiène

Nahrungsmittelmaschinen - Teigknetmaschinen -
Sicherheits- und Hygieneanforderungen

This European Standard was approved by CEN on 2 January 2000 and includes Amendment 1 approved by CEN on 24 October 2009.

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 CEN Management Centre or to any CEN member.

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 CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

| | |
|---|----|
| Foreword..... | 4 |
| Introduction | 5 |
| 1 Scope | 5 |
| 2 Normative references | 6 |
| 3 Description | 7 |
| 4 List of hazards..... | 7 |
| 4.1 Mechanical hazards | 7 |
| 4.2 Electrical hazards | 9 |
| 4.3 Hazards generated by noise | 9 |
| 4.4 Hazards resulting from inhalation of dust | 9 |
| 4.5 Hygiene | 9 |
| 4.6 Hazards generated by neglecting ergonomic principles..... | 9 |
| 5 Safety and hygiene requirements and/or measures | 10 |
| 5.1 Mechanical hazards | 10 |
| 5.2 Electrical hazards | 13 |
| 5.3 Noise reduction..... | 13 |
| 5.4 Protection against dust emission | 14 |
| 5.5 Hygiene requirements | 14 |
| 5.6 Hazards generated by neglecting ergonomic principles..... | 16 |
| 6 Verification of safety and hygiene requirements and/or measures | 17 |
| 7 Information for use | 17 |
| 7.1 Marking | 19 |
| 7.2 Noise declaration | 19 |
| Annex A (normative) Principles of design to ensure the cleanability of dough mixers | 20 |
| A.1 Definitions | 20 |
| A.2 Materials of construction | 20 |
| A.3 Design | 22 |
| Annex B (informative) Method of measuring dust | 38 |
| B.1 Purpose of the test | 38 |
| B.2 Principle of the tests | 38 |
| B.3 Operating conditions..... | 38 |
| Annex C (normative) Noise test code - Grade 2 of accuracy..... | 39 |
| C.1 Definitions | 39 |
| C.2 Installation and mounting conditions..... | 40 |
| C.3 Operating conditions..... | 40 |
| C.4 Measurements..... | 41 |
| C.5 Emission sound pressure level determination..... | 41 |
| C.6 Sound power level determination | 41 |
| C.7 Measurement uncertainties | 41 |
| C.8 Information to be recorded | 41 |
| C.9 Information to be reported..... | 42 |
| C.10 Declaration and verification of noise emission values..... | 42 |
| Annex D (informative) Bibliography | 43 |
| Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 98/37EC Annex A | 44 |

| | |
|--|-----------|
| Annex ZB (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC | 45 |
|--|-----------|

This document is a preview generated by EVS

Foreword

This document (EN 453:2000+A1:2009) has been prepared by Technical Committee CEN/TC 153 "Machinery intended for use with foodstuffs and feed", the secretariat of which is held by DIN.

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 2010, and conflicting national standards shall be withdrawn at the latest by June 2010.

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 includes Amendment 1 approved by CEN on 24 October 2009.

This document supersedes EN 453:2000.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** **A1**.

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).

A1 For relationship with EU Directive(s), see informative Annexes ZA and ZB, which are integral parts of this document. **A1**

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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 safety and hygiene requirements for the design and manufacture of dough mixers with rotating bowls of capacity greater than or equal to 5 l ¹⁾ and less than or equal to 500 l.

These dough mixers are used to process various ingredients e.g. flour, sugar, fat, salt, water and other ingredients in food manufacturers and shops. These machines are sometimes used in other industries (e.g. pharmaceutical industry, chemical industry, printing), but hazards related to these uses are not considered in this standard.

The following machines are excluded:

- planetary mixers (EN 454);
- continuously fed machines;
- mixers with stationary vertical bowls;
- experimental and testing machines under development by the manufacturer;
- domestic appliances;
- automatic loading and unloading devices.

The intended use of the machine, as defined in 3.12 of EN 292-1:1991 and as given in the manufacturer's instruction handbook, is the loading of various ingredients, processing them by means of a kneading tool, unloading and cleaning. The operation is usually carried out in cycles of variable duration. Manual operations are sometimes necessary to take samples, to scrape the bowl or add ingredients.

The significant hazards covered by the standard are mechanical (crushing, shearing, trapping, impact and loss of stability), electrical, ergonomic and also those resulting from noise, inhalation of flour dust and lack of hygiene.

A1 *deleted text* **A1**

It applies only to machines manufactured after the date of issue of this standard.

1) Below 5 l, EN 60335-1 and 60335-2 are applicable.

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 + A1:1995, *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 614-1:1995, *Safety of machinery - Ergonomic design principles - Part 1: Terminology and general principles*

EN 954-1:1996, *Safety of machinery - Safety related parts of control systems - Part 1: General principles for design*

EN 1050:1996, *Safety of machinery - Principles for risk assessment*

EN 1088:1995, *Safety of machinery - Interlocking devices associated with guards - Principles for design and selection*

EN 1672-2:1997, *Food processing machinery - Common requirements - Part 2: Hygiene requirements*

EN 60204-1:1997, *Safety of machinery - Electrical equipment of machines - Part 1: General requirements*

EN 60529:1991, *Degrees of protection provided by enclosures*

EN 60651:1994, *Sound level meters*

EN ISO 3743-1:1995, *Acoustics - Determination of sound levels of noise sources - Engineering methods for small movable sources in reverberant fields - Part 1: Comparison method*

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*

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

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

EN ISO 11688-1:1998, *Acoustics - Recommended practice for the design of low-noise machinery and equipment - Part 1: Planning*

EN ISO 12001:1996, *Acoustics - Noise emitted by machinery and equipment - Rules for the drafting and presentation of a noise test code*

ISO 468:1982, *Surface roughness - Parameters values and general rules for specifying requirements*