

**Food processing machinery - Mixers with horizontal shafts - Safety and hygiene requirements**

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## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 13389:2005 sisaldab Euroopa standardi EN 13389:2005 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 28.12.2005 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 13389:2005 consists of the English text of the European standard EN 13389:2005.</p> <p>This document is endorsed on 28.12.2005 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><b>Käsitlusala:</b> This European Standard specifies requirements for the design, installation, operation and maintenance of batch production fixed or tilting horizontal bowl type mixers with one or two rotating shafts with or without movable blades. These mixers are used to mix, knead and homogenise food for animal or human consumption in powder, paste or liquid form. The mixers can be floor mounted or transportable (with or without castors). They are intended to be used when stationary.</p>	<p><b>Scope:</b> This European Standard specifies requirements for the design, installation, operation and maintenance of batch production fixed or tilting horizontal bowl type mixers with one or two rotating shafts with or without movable blades. These mixers are used to mix, knead and homogenise food for animal or human consumption in powder, paste or liquid form. The mixers can be floor mounted or transportable (with or without castors). They are intended to be used when stationary.</p>
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English Version

## Food processing machinery - Mixers with horizontal shafts - Safety and hygiene requirements

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

Nahrungsmittelmaschinen - Mischmaschinen mit  
waagerechten Wellen - Anforderungen an die Sicherheit  
und Hygiene

This European Standard was approved by CEN on 1 August 2005.

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.

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.

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



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## Contents

Page

Foreword .....	3
Introduction .....	4
1 Scope .....	5
2 Normative references .....	5
3 Terms, definitions, mode of operation and description .....	6
4 List of significant hazards .....	8
5 Safety and hygiene requirements and/or protective measures .....	11
6 Verification of safety and hygiene requirements and/or protective measures .....	18
7 Information for use .....	20
Annex A (normative) Noise test code for mixers with horizontal shafts (Grade 2 of accuracy) .....	22
Annex B (normative) Principle of design to ensure the cleanability of mixers with horizontal shafts .....	24
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive Machinery 98/37/EC, amended by 98/79/EC .....	40
Bibliography .....	41

## Foreword

This European Standard (EN 13389:2005) has been prepared by Technical Committee CEN/TC 153 "Food processing machinery — Safety and hygiene specifications", 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 April 2006, and conflicting national standards shall be withdrawn at the latest by April 2006.

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

## Introduction

This European Standard is a type C standard as stated in EN ISO 12100-1.

The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this European 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 over the provisions of the other standards, for machines that have been designed and built according to the provisions of this type C standard.

## 1 Scope

This European Standard specifies requirements for the design, installation, operation and maintenance of batch production fixed or tilting horizontal bowl type mixers with one or two rotating shafts with or without movable blades. These mixers are used to mix, knead and homogenise food for animal or human consumption in powder, paste or liquid form. The mixers can be floor mounted or transportable (with or without castors). They are intended to be used when stationary.

These machines are used in feed mills and factories which produce, work on or process foodstuff, for example biscuits, bread, chocolate, cereal products.

This European Standard does not deal with the use of the machine in potentially explosive atmospheres.

This European Standard deals with the significant hazards, hazardous situations and events relevant to mixers with horizontal shafts, when used as intended and under the conditions foreseen by the manufacturer.

This European Standard also specifies food hygiene requirements.

The feeding equipment, the dosing equipment, and the requirements of equipment for the supply of inert gases, and for heating and cooling, are excluded from the scope of this European Standard.

The hazards due to the unloading equipment (container, discharge belt, etc.) are not dealt with in this European Standard.

When drafting this European Standard, it has been assumed that the machines are not intended to be cleaned with a water jet.

This European Standard is not applicable to mixers with horizontal shafts which are manufactured before the date of publication of this European Standard by CEN.

## 2 Normative references

The following referenced documents are indispensable for the application of this European Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 294:1992, *Safety of machinery — Safety distance to prevent danger zones being reached by the upper limbs.*

EN 418:1992, *Safety of machinery — Emergency stop equipment, functional aspects, principles for design.*

EN 563:1994, *Safety of machinery — Temperatures of touchable surfaces — Ergonomics 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 953, *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 999, *Safety of machinery — The positioning of protective equipment in respect of approach speeds of parts of the human body.*

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

## EN 13389:2005 (E)

EN 1127-1, *Explosive atmospheres — Explosion prevention and protection — Part 1: Basic concepts and methodology.*

EN 1672-2:2005, *Food processing machinery — Basic concepts — Part 2: Hygiene requirements.*

EN 13478, *Safety of machinery — Fire prevention and protection.*

EN 60204-1:1997, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:1997).*

EN 60529, *Degrees of protection provided by enclosures (IP code) (IEC 60529:1989).*

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 (ISO 3744:1994).*

EN ISO 4287, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Terms, definitions and surface texture parameters (ISO 4287:1997).*

EN ISO 4871, *Acoustics — Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996).*

EN ISO 11201, *Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at a work station and at other specified positions — Engineering method in an essentially free field over a reflecting plane (ISO 11201/AC1:1995).*

EN ISO 11688-1, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 1: Planning (ISO/TR 11688-1:1995).*

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

EN ISO 12100-1:2003, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology (ISO 12100-1:2003).*

EN ISO 12100-2:2003, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles (ISO 12100-2:2003).*

EN ISO 13732-3, *Ergonomics of the thermal environment - Touching of cold surfaces - Part 3: Ergonomics data and guidance for application (ISO/DIS 13732-3:2002).*

## 3 Terms, definitions, mode of operation and description

### 3.1 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN ISO 12100-1:2003 and the following apply.

#### 3.1.1

##### **fixed bowl mixer**

mixer with a bowl which is fixed during filling, mixing and discharge

#### 3.1.2

##### **tilting bowl mixer**

mixer with a bowl that tilts to allow filling and/or discharging of the mixer

#### 3.1.3

##### **mixing element**

blade, plough, Z blade or other device attached to the main horizontal shafts used to mix the product