

**TOIDUTÖÖTLEMISMASINAD. TAIGNASEGAJAD.
OHUTUS- JA HÜGIEENINÕUDED**

**Food processing machinery - Dough mixers - Safety and
hygiene requirements**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 453:2014 sisaldab Euroopa standardi EN 453:2014 ingliskeelset teksti.	This Estonian standard EVS-EN 453:2014 consists of the English text of the European standard EN 453:2014.
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ICS 67.260

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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 6 September 2014.

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-CENELEC Management Centre or to any CEN member.

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Foreword

This document (EN 453:2014) 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of an identical text or by endorsement, at the latest by April 2015 and conflicting national standards shall be withdrawn at the latest by April 2015.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 453:2000+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 2006/42/EC.

For relationship with EU Directive 2006/42/EC, see informative Annex ZA, which is an integral part of this document.

Significant changes:

The significant changes with respect to the previous edition EN 453:2000+A1:2009 are listed below:

- solid guard to protect against dust emission was added;
- table of verification of safety and hygiene requirements was completely revised.

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

This document is a type C standard as stated in EN ISO 12100.

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

1.1 This European 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 L¹⁾ and less than or equal to 500 L.

These dough mixers are used separately or in a line in the food industry and shops (pastry-making, bakeries, confectionery, etc.) for manufacturing of dough by mixing flour, water and other ingredients. These machines can be fed by hand or mechanically.

These machines are sometimes used in other industries (e.g. pharmaceutical industry, chemical industry, printing), but hazards related to these uses are not dealt with in this standard.

This European Standard deals with all significant hazards, hazardous situations and events relevant to the transport, installation, adjustment, operation, cleaning, maintenance, dismantling, disassembling and scrapping of dough mixers, when they are used as intended and under the conditions of misuse which are reasonably foreseeable by the manufacturer (see Clause 4).

1.2 This European Standard does not deal with the following machines:

- planetary mixers (see 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.

1.3 This European Standard is not applicable to machines which are manufactured before its date of publication as a European Standard.

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 614-1:2006+A1:2009, *Safety of machinery — Ergonomic design principles — Part 1: Terminology and general principles*

EN 1672-2:2005+A1:2009, *Food processing machinery — Basic concepts — Part 2: Hygiene requirements*

EN 60204-1:2006, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2005, modified)*

EN 60529, *Degrees of protection provided by enclosures (IP Code) (IEC 60529)*

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

EN 61000-6-1, *Electromagnetic compatibility (EMC) — Part 6-1: Generic standards — Immunity for residential, commercial and light-industrial environments (IEC 61000-6-1)*

EN ISO 3743-1, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering methods for small movable sources in reverberant fields — Part 1: Comparison method for a hard-walled test room (ISO 3743-1)*

EN ISO 3744:2010, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering methods for an essentially free field over a reflecting plane (ISO 3744:2010)*

EN ISO 4287, *Geometrical product specifications (GPS) — Surface texture: Profile method — Terms, definitions and surface texture parameters (ISO 4287)*

EN ISO 4871:2009, *Acoustics — Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)*

EN ISO 11201:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions in an essentially free field over a reflecting plane with negligible environmental corrections (ISO 11201:2010)*

EN ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction (ISO 12100:2010)*

EN ISO 13849-1:2008, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2006)*

EN ISO 13857:2008, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857:2008)*

EN ISO 14119:2013, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection (ISO 14119:2013)*

3 Terms, definitions and description

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100:2010 apply.

3.2 Description

A dough mixer usually consists of:

- a frame, supporting or containing the drive mechanism and control devices;
- a bowl to contain the ingredients to be mixed. This bowl is driven either mechanically or through the action of the kneading tool on the dough, may be removable, and may tilt;
- one or more kneading tools on a vertical or inclined fixed axis or two special arms mixing the dough. In some cases these devices can be raised to allow bowl or food removal.