

**TOIDUTÖÖTLEMISMASINAD. PLANETAARSEGISTID.  
OHUTUS- JA HÜGIEENINÕUDED**

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

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

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English Version

## Food processing machinery - Planetary mixers - Safety and hygiene requirements

Machines pour les produits - Batteurs-mélangeurs -  
Prescriptions relatives à la sécurité et l'hygiène

Nahrungsmittelmaschinen - Planetenrühr- und -  
knetmaschinen - Sicherheits- und Hygieneanforderungen

This European Standard was approved by CEN on 6 September 2014.

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## Foreword

This document (EN 454:2014) 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of an identical text or by endorsement, at the latest by May 2015 and conflicting national standards shall be withdrawn at the latest by May 2015.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 454:2000+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 454:2000+A1:2009 are listed below:

- modification of the numbers of classes of machines (2 instead of 3);
- solid guard to protect against dust emission was added;
- safety dimensions for the guard was précised;
- control of the position of the bowl in working position for the Class 1;
- 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 fixed bowl planetary mixers with a tool having a planetary movement by using two parallel axes. The capacity of the bowl is greater than or equal to 5 L<sup>1)</sup> and less than or equal to 200 L.

These planetary mixers are used separately in the food industry and shops (catering, bakery, pizza, pastry and confectionary industry) for mixing, kneading and emulsifying/whipping food products (e.g. cocoa, flour, sugar, oils and fat, eggs, and other ingredients). These machines are fed by hand and sometimes during operation without stopping the machine.

Processing is carried out in cycles of variable duration. It can be either manually or automatically controlled, in individual cycles or on a cycle repeat basis, etc.

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 planetary 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:

- catering attachment for planetary mixers (see EN 12851);
- continuously fed machines;
- dough mixers (see EN 453);
- whipping mixers which contain no parallel axes;
- stirring machines;
- experimental and testing machines under development by the manufacturers;
- machines used in other industry, for example: meat industry, candy industry, pharmaceutical industry, chemical industry;
- domestic appliances.

**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*

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



- EN 1672-2:2005+A1:2009, *Food processing machinery — Basic concepts — Part 2: Hygiene requirements*
- EN 12851, *Food processing machinery — Catering attachments for machines having an auxiliary drive hub — Safety and hygiene requirements*
- EN 60204-1:2006, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204:2005, modified)*
- EN 60529, *Degrees of protection provided by enclosures (IP Code)*
- EN 61000-6-1, *Electromagnetic compatibility (EMC) — Part 6-1: Generic standards — Immunity for residential, commercial and light-industrial environments*
- 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, *Acoustics — Declaration and verification of noise emission values of machinery and equipment (ISO 4871)*
- 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 13732-1, *Ergonomics of the thermal environment - Methods for the assessment of human responses to contact with surfaces - Part 1: Hot surfaces (ISO 13732-1)*
- EN ISO 13849-1, *Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design (ISO 13849-1)*
- EN ISO 14119:2013, *Safety of machinery - Interlocking devices associated with guards - Principles for design and selection (ISO 14119:2013)*

### **3 Terms, definitions, description and classification**

#### **3.1 Terms and definitions**

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

##### **3.1.1**

##### **tool**

mobile and removable equipment having a planetary movement which is used for mixing, kneading and emulsifying

Note 1 to entry: The tool can have different shapes.