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Food processing machinery - Mincing machines - Safety and hygiene requirements CONSOLIDATED TEXT

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 12331:2004+A2:2010 sisaldab Euroopa standardi EN 12331:2003+A2:2010 ingliskeelset teksti.

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English Version

Food processing machinery - Mincing machines - Safety and hygiene requirements

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

Nahrungsmittelmaschinen - Wölfe - Sicherheits- und
Hygieneanforderungen

This European Standard was approved by CEN on 1 September 2003 and includes Amendment 1 approved by CEN on 12 December 2004 and Amendment 2 approved by CEN on 20 May 2010.

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Foreword

This document (EN 12331:2003+A2:2010) has been prepared by Technical Committee CEN/TC 153 "Food processing machinery – Safety and hygiene specifications", the secretariat of which is held by DIN.

~~A2~~ deleted text ~~A2~~

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of an identical text or by endorsement, at the latest by December 2010, and conflicting national standards shall be withdrawn at the latest by December 2010.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 2004-12-12 and Amendment 2, approved by CEN on 2010-05-20.

This document supersedes EN 12331:2003.

The start and finish of text introduced or altered by amendment is indicated in the text by tags ~~A1~~ ~~A1~~ and ~~A2~~ ~~A2~~.

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 ~~A2~~ EU Directive(s) ~~A2~~.

~~A2~~ For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document. ~~A2~~

~~A2~~ deleted text ~~A2~~

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0 Introduction

A2 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 hazardous events are covered are indicated in the scope of this document.

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. **A2**

1 Scope

1.1 This European Standard specifies requirements for the design and manufacture of mincing machines (see Figures 1 and 2) used in a stationary position.

The machines covered by this standard are used for size reduction of fresh or frozen meat, meat products and fish by cutting in a set of cutting tools.

Mincing machines for domestic uses are not included in this standard. Filling mincers are covered by **A2** EN 12463 **A2** "Food processing machinery - Filling machines and auxiliary machines - Safety and hygiene requirements".

This standard applies only to machines that are manufactured after the date of issue of this standard.

Mincing machines in connection with using a hold to run foot switch are not covered by this standard.

A2 This European Standard covers:

- mincing machines used in shops and preparation rooms;
- mincing machines used in kitchens where sausages are prepared;
- mincing machines used industrially;
- accessories.

The extent to which hazards are covered, is indicated in this European Standard. For other hazards which are not covered by this European Standard, machinery should comply with EN ISO 12100 where applicable.

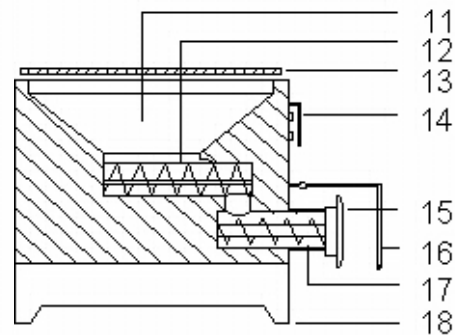
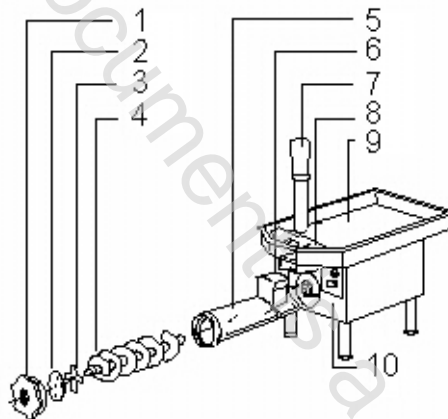
This European Standard is not dealing with specific requirements for the control of mincing machines with foot switch. **A2**

1.2 This standard covers the following types:

- Mincing machine with tray, feed intake and pusher, diameter ≤ 52 mm on feed intake (see Figure 5)
- Mincing machine with tray, feed intake, restrictor plate and pusher, diameter > 52 mm on feed intake (see Figure 6)
- Mincing machine with feed intake hopper and cover, screw conveyor, with¹⁾ or without mixing screw in feed intake hopper (see Figure 7)

- Mincing machine with feed intake hopper, with or without cover, screw conveyor, with¹⁾ or without mixing screw in feed intake hopper, with loading device (continuously or discontinuously)

Mincing machines comprise a machine base, a worm casing with a worm, a feed intake tray or hopper, a screw conveyor (and sometimes an additional mixing screw in the feed intake hopper), a set of cutting tools, a lock nut, a loading device, a drive motor and, depending on machine type, electrical, hydraulic and pneumatic components. They will also have various safeguarding devices as examples in clause 5.



Key

1 LOCK NUT	6 FEED INTAKE	11 FEED INTAKE	15 LOCK NUT
2 HOLE PLATE	7 PUSHER	12 HOPPER	16 PROTECTIVE HOOD
3- BLADE	8 RESTRICTOR PLATE	13 SCREW CONVEYOR	17 WORM
4 WORM	9 TRAY	14 COVER	18 MACHINE RACK
5 WORM CASING	10 ON/OFF SWITCH PROTECTIVE HOOD	ON/OFF SWITCH PROTECTIVE HOOD	

Figure 1 — Arrangement of a mincing machine with tray and restrictor plate

Figure 2 — Arrangement of a mincing machine with feed intake hopper, cover and screw conveyor

Mincing machines may be equipped e.g. with

- an extraction claw,
- an ejector or extractor,
- a protective hood over the discharge outlet,
- a cover over the inlet opening of the feed intake hopper,
- a transport carriage for the lock nut, the set of cutting tools, the worm and the screw conveyor,
- a lifting device for the lock nut, the set of cutting tools, the worm and the screw conveyor,
- a loading device.

¹⁾ \square_{A2} In this case, EN 13570 should be taken into consideration. \square_{A2}

1.3 Intended use

The fresh or frozen meat, meat product or the fish is fed manually or by means of the loading device into the mincing machine. The product is fed to the worm either by means of a pusher or a screw conveyor and size reduced in the set of cutting tools.

It is not intended that mincing machines are cleaned with pressurized water. However, it is to be foreseen that it is difficult to guarantee that this method will never be used in practice. In order to deal with this eventuality, the requirements of 5.3.3.2 should apply.

A₂ This European Standard specifies all significant hazards, hazardous situations and events relevant to mincing machines, when they are used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer (see Clause 4).

This European Standard specifies the hazards which can arise during commissioning, operation, cleaning, use, maintenance and decommissioning of the machine. **A₂**

2 Normative references

^{A2} The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies. ^{A2}

^{A2} EN 349, *Safety of machinery — Minimum gaps to avoid crushing of parts of the human body*

EN 614-1, *Safety of machinery — Ergonomic design principles — Part 1: Terminology and general principles*

EN 953:1997, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards*

EN 1005-1, *Safety of machinery — Human physical performance — Part 1: Terms and definitions*

EN 1005-2, *Safety of machinery — Human physical performance — Part 2: Manual handling of machinery and component parts of machinery*

EN 1005-3, *Safety of machinery — Human physical performance — Part 3: Recommended force limits for machinery operation*

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

EN 1672-2:2005, *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 60529:1989)*

EN 61496-1:2004, *Safety of machinery — Electro-sensitive protective equipment — Part 1: General requirements and tests (IEC 61496-1:2004, modified)*

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 11204:1995, *Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at a work station and at other specified positions — Method requiring environmental corrections (ISO 11204:1995)*

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 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 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 distance to prevent danger zones being reached by the upper limbs (ISO 13857:2008)* ^{A2}

3 Terms and definitions

^{A2} For the purposes of this document, the terms and definitions given in EN ISO 12100-1:2003 and the following apply. ^{A2}

3.1

platform

accessible standing area

3.2

worm

rotating screw-shaped component in the worm casing for meat transport to the set of cutting tools

3.3

step

interlocked standing area

3.4

ejector/extractor

device for detaching the set of cutting tools and the worm

3.5

extraction claw

tool for detaching the set of cutting tools and the worm

3.6

loading device

lift tilt device for the lifting and tilting of transport cars and containers

3.7

container

device for holding products to be processed

3.8

cover

movable device with safety function

3.9

feed intake

housing between the tray and the worm casing

3.10

feed intake hopper

container for holding the products to be processed with safety function

3.11

locking device

device for locking the trolley or container in the load bearing device

3.12

trolley

movable device for holding the products to be processed