SLOVENSKI STANDARD
oSIST prEN 12331:2018

01-oktober-2018

Stroji za predelavo hrane - Stroji za mletje mesa - Varnostne in higienske zahteve

Food processing machinery - Mincing machines - Safety and hygiene requirements

Nahrungsmittelmashinen - Wölfe - Sicherheits- und Hygieneanforderungen

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

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Ta slovenski standard je istoveten z: **prEN 12331**

kSIST FprEN 12331:2021
https://standards.iteh.ai/catalog/standards/sist/5bde3d39-852f-435c-9b89-07076b808b05/ksist-fpren-12331-2021

ICS:

67.260	Tovarne in oprema za živilsko industrijo	Plants and equipment for the food industry

oSIST prEN 12331:2018 **en,fr,de**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

oSIST prEN 12331:2018

iTeh STANDARD PREVIEW
(standards.iteh.ai)

kSIST FprEN 12331:2021
https://standards.iteh.ai/catalog/standards/sist/5bde3d39-852f-435c-9b89-07076b808b05/ksist-fpren-12331-2021

oSIST prEN 12331:2018

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 12331

August 2018

ICS 67.260

Will supersede EN 12331:2015

English Version

Food processing machinery - Mincing machines - Safety and hygiene requirements

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

Nahrungsmittelmaschinen - Wölfe - Sicherheits- und Hygieneanforderungen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 153.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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-CENELEC Management Centre has the same status as the official versions.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

CEN members are the national standards bodies of 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

ksist-fprEN 12331:2021
https://standards.iteh.ai/catalog/standards/sist/5bde3d39-852f-435c-9b89-07076b808b05/ksist-fpren-12331-2021

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

© 2018 CEN All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.

Ref. No. prEN 12331:2018 E

oSIST prEN 12331:2018

Contents

Page

iTeh STANDARD PREVIEW
(standards.iteh.ai)
KSIST FprEN 12331:2021
https://standards.iteh.ai/catalog/standards/sist/5bde3d39-852f-435c-9b89-07076b808b05/ksist-fpren-12331-2021

oSIST prEN 12331:2018

iTeh STANDARD PREVIEW
(standards.iteh.ai)
kSIST FprEN 12331:2021
https://standards.iteh.ai/catalog/standards/sist/...-9b89-
07076b808b05/ksist-fpren-12331-2021

oSIST prEN 12331:2018

European foreword

This document (prEN 12331:2018) 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 document is currently submitted to the CEN Enquiry.

This document will supersede EN 12331:2015.

This document has been prepared under a standardization request 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 12331:2015 are listed below:

— for better distinction, two types of machines are defined: professional and industrial;

— the requirements have been specified and revised with regard to the two types of machine (professional and industrial).

iTeh STANDARD PREVIEW
(standards.iteh.ai)
kSIST FprEN 12331:2021
https://standards.iteh.ai/catalog/standards/sist/5bde3d39-852f-435c-9b89-07076b808b05/ksist-fpren-12331-2021

oSIST prEN 12331:2018

Introduction

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

This document is of relevance, in particular for the following stakeholder groups representing the market players with regard to machinery safety:

— machine manufacturers (small, medium and large enterprises);

— health and safety bodies (regulators, accident prevention organizations, market surveillance, etc.).

Others can be affected by the level of machinery safety achieved with the means of the document by the above-mentioned stakeholder groups:

— machine users/employers (small, medium and large enterprises);

— machine users/employees (e.g. trade unions, organizations for people with special needs);

— service providers, e.g. for maintenance (small, medium and large enterprises);

— consumers (in the case of machinery intended for use by consumers).

The above-mentioned stakeholder groups have been given the possibility to participate at the drafting process of this document.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

The machinery concerned and the extent to which hazards, hazardous situations and hazardous events are covered are indicated in the scope of this document.

kSIST FprEN 12331:2021
https://standards.iteh.ai/catalog/standards/sist/5bde3d39-853f-435a-9b89-07076b808b05/ksist-fpren-12331-2021

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.

oSIST prEN 12331:2018

1 Scope

1.1 This documentd specifies requirements for the design and manufacture of mincing machines (see Figures 1 a and 1 b).

The mincing machines (hereinafter referred to as machine) covered by this document are used for size reduction of fresh or frozen meat, meat products and fish (hereinafter referred to as product) by cutting in a set of cutting tools.

Machines for domestic uses are not included in this document. Filling mincers are covered by EN 12463 “Food processing machinery — Filling machines and auxiliary machines — Safety and hygiene requirements”.

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

This document covers:

— professional machines used for on-demand preparation in shops characterized by:

  — designed as a table top machine;

  — and having a feed tray;

  — and the product is only feed manually;

  — and is only operated from the ground;

  — and is operated by no more than one operator;

  — and with full visibility and full accessibility of the entire machine from the operator workstation;

  — and having hole plate diameter ≤ 106 mm;

  — and a worm casing set which is removable without using any tools;

  — and the weight of the worm casing set ≤ 15 kg;

NOTE The table top machine can be equipped with a frame or base, so no separate table is needed.

— industrial machines used for industrial mass production, and which cannot be characterized as a professional machine.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
kSIST FprEN 12331:2021
https://standards.iteh.ai/catalog/standards/sist/5bde3d39-852f-435c-9b89-
0707088086b5/ksist-fpren-12331-2021

The extent to which hazards are covered, is indicated in this document. For other hazards which are not covered by this document, machinery should comply with EN ISO 12100:2010 where applicable.

This document does not describe the specific requirements for the control of machines with foot switch.

This document does not describe the specific requirements for additional mixing screws in the feed intake hopper which are covered by EN 13570 “Food processing machinery — Mixing machines — Safety and hygiene requirements”.

1.2 This document covers the following types of machines:

— machine with feed tray, feed intake and pusher (see Figure 3);

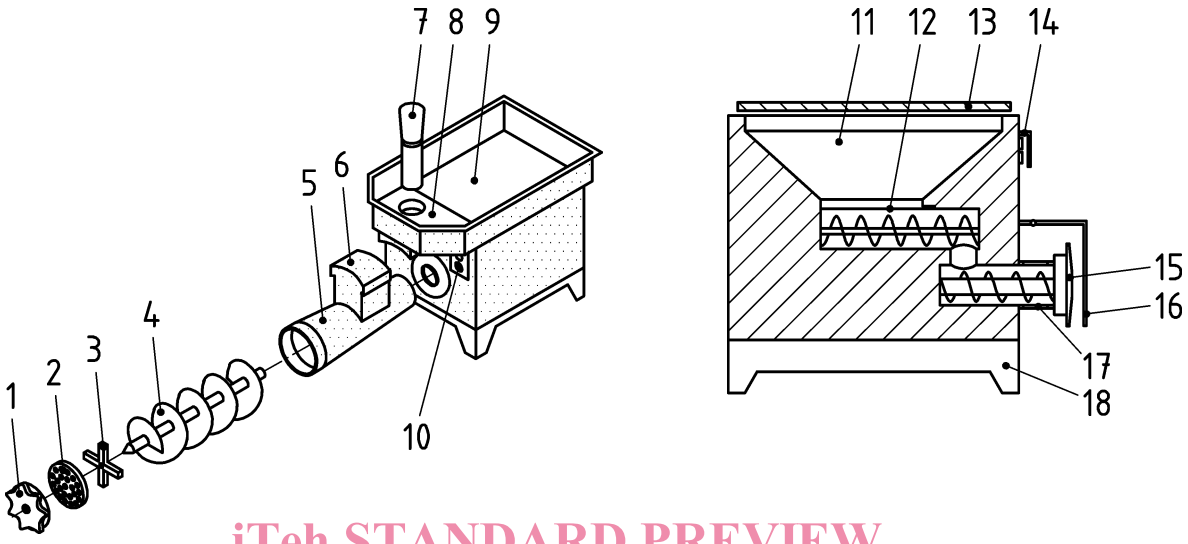
— machine with feed tray, feed intake, restrictor plate and pusher (see Figure 4);

— machine with feed intake hopper, cover and screw conveyor (see Figure 5);

oSIST prEN 12331:2018

— machine with feed intake hopper, with or without cover, screw conveyor, with loading device (continuously or discontinuously).

Machines comprise a machine base, a worm casing with a worm, a feed tray (with feed intake) or a feed intake hopper, a screw conveyor, 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.



a) Machine with feed tray and restrictor plate **b) Machine with feed intake hopper, cover andscrew conveyor**

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Key

1	lock nut	6	feed intake	11	feed intake hopper	15	lock nut
2	hole plate	7	pusher	12	screw conveyor	16	protective hood
3	blade	8	restrictor plate	13	cover	17	worm
4	worm	9	feed tray	14	on-/off-switch with protective hood	18	machine rack
5	worm casing	10	on-/off-switch				

SIST FprEN 12331:2021
https://standards.iteh.ai/catalog/standards/sist/5bde3d39-852f-435c-9b89-07076b808b05/ksist-fpren-12331-2021

Figure 1 — Arrangement of a mincing machine

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.

oSIST prEN 12331:2018

1.3 Intended use

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

It is foreseeable that industrial machines will be cleaned with pressurized water, so the requirements of 5.3.4 shall apply to all industrial machines in the scope of this standard. This is not applicable to professional machines.

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

This document specifies the hazards which can arise during commissioning, operation, cleaning, use, maintenance and decommissioning of the machine.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

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

iTeh STANDARD PREVIEW
(standards.iteh.ai)

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

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

SIST prEN 12331:2021
https://standards.iteh.ai/catalog/standards/sist/5bde3d39-852f-435c-9b89-
SIST prEN 12331:2021

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 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)*

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

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 11204:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions applying accurate environmental corrections (ISO 11204:2010)*

oSIST prEN 12331:2018

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

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

EN ISO 13849-1:2015, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2015)*

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)*

EN ISO 14120:2015, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards (ISO 14120:2015)*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

iTeh STANDARD PREVIEW
(standards.iteh.ai)

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

kSIST FprEN 12331:2021
https://standards.iteh.ai/catalog/standards/sist/5bde3d39-852f-435c-9b89-07076b808b05/ksist-fpren-12331-2021

3.1
platform
accessible workstation

3.2
worm
rotating screw-shaped component in the worm casing for product transport to the set of cutting tools

3.3
step
interlocked workstation

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
device for the lifting and tilting of transport cars and containers

oSIST prEN 12331:2018

3.7
container
device for holding processed and/or unprocessed product

3.8
cover
movable device with safety function

3.9
feed intake
housing between the feed tray and the worm casing

3.10
feed intake hopper
device for holding the unprocessed product

3.11
locking device
device for locking the trolley or container in the load bearing device

3.12
trolley
movable container

iTeh STANDARD PREVIEW
(standards.iteh.ai)

3.13
design dimension
sum of dimensions measured from the workstation (floor, steps, intermediate steps or platforms) to the hopper edge and from the hopper edge to the first danger point in the feed intake hopper (see Figure 6 and Figure 7)

SIST EN 12331:2021
https://standards.iteh.ai/catalog/standards/sist/5bde3d39-852f-435c-9b89-07076b808b05/ksist-fpren-12331-2021

3.14
cooling mincer
machine with a cooling device for the feed intake and the worm casing

3.15
workstation
every location at the machine from which the operator interacts with the machine

3.16
hole plate
plate with bores

3.17
end hole plate
last hole plate towards the outlet

3.18
blade
element for cutting the product

3.19
feed tray
device for receiving the product to be processed to feed the feed intake by hand

oSIST prEN 12331:2018

3.20
mechanical trip bar
movable device with a safety function

3.21
worm casing
element for holding the worm and the set of cutting tools

3.22
worm casing set
arrangement consisting of a worm casing, a worm, a set of cutting tools and a lock nut

3.23
set of cutting tools
arrangement of blades and hole plates for size reduction of product

Note 1 to entry: The number and type of cutting tools used is selected depending on the desired quality of the minced product.

3.24
protective grid
movable device on the feed intake hopper mouth

3.25
protective hood
movable device on the discharge outlet

iTeh STANDARD PREVIEW
(standards.iteh.ai)

3.26
restrictor plate
stationary non-detachable device above the feed intake

kSIST FprEN 12331:2021
https://standards.iteh.ai/catalog/standards/sist/5bde3d39-852f-435c-9b89-
SIST prEN 12331:2021

3.27
pusher
device used to push the product further in the feed intake

3.28
screw conveyor
rotating screw-shaped component in the feed intake hopper for product transport to the worm

3.29
transport carriage
movable device for holding the lock nut, set of cutting tools, worm and screw conveyor

3.30
lock nut
device for locking the set of cutting tools in the worm casing

3.31
professional machine
machine used for on-demand preparation in shops or restaurants

Note 1 to entry: A professional machine shows at least all of the following features:

— is a table top machine;