# SLOVENSKI STANDARD
# SIST EN 1974:2021

**01-februar-2021**

**Nadomešča:**
**SIST EN 1974:2000+A1:2010**

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**Stroji za predelavo hrane - Stroji za rezanje na rezine - Varnostne in higienske zahteve**

Food processing machinery - Slicing machines - Safety and hygiene requirements

Nahrungsmittelmaschinen- Aufschnittschneidemaschinen - Sicherheits- und Hygieneanforderungen



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



**Ta slovenski standard je istoveten z:** **EN 1974:2020**

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**ICS:**

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

**SIST EN 1974:2021** **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN 1974

November 2020

ICS 67.260

Supersedes EN 1974:1998+A1:2009

English Version

# Food processing machinery - Slicing machines - Safety and hygiene requirements

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

Nahrungsmittelmaschinen- Aufschnittschneidemaschinen - Sicherheits- und Hygieneanforderungen

This European Standard was approved by CEN on 18 October 2020.

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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 CEN-CENELEC Management Centre has the same status as the official versions.



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

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



Ref. No. EN 1974:2020 E

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## European foreword

This document (EN 1974:2020) 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of an identical text or by endorsement, at the latest by May 2021, and conflicting national standards shall be withdrawn at the latest by May 2021.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 1974:1998+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.

In comparison with the previous edition, the following major technical modifications have been made:

— the Scope and Terms and definitions have been updated;

— general redraft of the list of significant hazards;

— safety and/or protective measure cross reference added;

— improvement on blade protection requirements (blade guard, gauge plate, integrated blade sharpener, product support, stacker unit and control system);

— improvement on the hygiene section;

— general redraft on the verification of safety requirements and/or measures;

— updating on the instruction handbook section, new requirements added.



According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

# 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 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.

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



When requirements of this type-C standard are different from those which are stated in type-A- or type-B-standards, the requirements of this type-C-standard take precedence over the requirements of the other standards for machines that have been designed and built according to the requirements of this type-C-standard.

# 1 Scope

This document specifies the safety and hygiene requirements for the design and manufacture, installation, training, use, cleaning and maintenance of slicing machines which are fitted with a motor-driven blade of more than 150 mm in diameter, provided with a product support. These types of slicing machines are intended to be used in shops, restaurants, supermarkets, canteens, etc. to slice foodstuffs.

This document deals with all significant hazards, hazardous situations and events relevant to slicing machines, when they are used as intended by the manufacturer (see Clause 4).

This document applies to the hazards arising during all the phases of the life of the machine as described in EN ISO 12100:2010, 5.4.

Automatic industrial slicing machines covered by EN 16743:2016 are excluded from the scope of this document.

This document covers the following types of slicing machines:

— horizontal feed slicing machine (see Figure 1);

— gravity feed slicing machine (see Figure 2).

Both types can have an either hand-operated or power-operated carriage to move the product towards the blade. They both can be fitted with manual or automatic devices to receive and convey the slices away from the machine. All these types can also be provided with a scale.

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



# 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 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[1], *Safety of machinery - Electrical equipment of machines - Part 1: General requirements (IEC 60204-1:2005, modified)*

EN 60529:1991[2], *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)*

EN ISO 4287:1998[3],*Geometrical product specifications (GPS) - Surface texture: Profile method - Terms, definitions and surface texture parameters (ISO 4287:1997)*

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

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1 As impacted by EN 60204-1:2006/A1:2009 and EN 60204-1:2006/corrigendum Feb. 2010.

2 As impacted by EN 60529:1991/corrigendum May 1993, EN 60529:1991/A1:2000, EN 60529:1991/A2:2013, EN 60529:1991/AC:2016-12 and EN 60529:1991/A2:2013/AC:2019-02.

3 As impacted by EN ISO 4287:1998/AC:2008 and EN ISO 4287:1998/A1:2009.

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

EN ISO 21469:2006, *Safety of machinery - Lubricants with incidental product contact - Hygiene requirements (ISO 21469:2006)*

## 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:

- ISO Online browsing platform: available at https://www.iso.org/obp
- IEC Electropedia: available at http://www.electropedia.org/

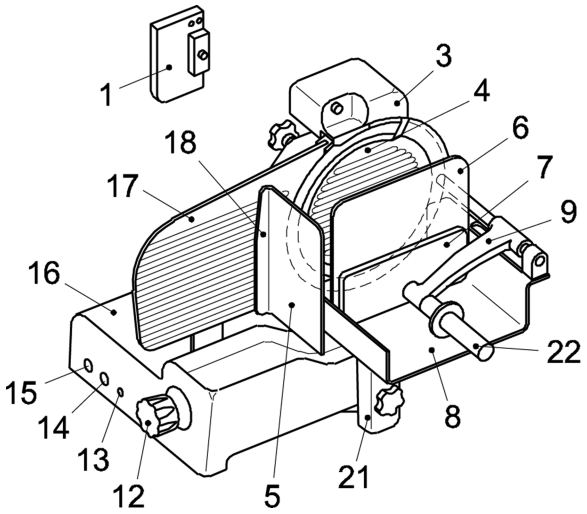
**3.1**
**slicing machine**
machine with a blade used to cut food products into slices of varying thickness

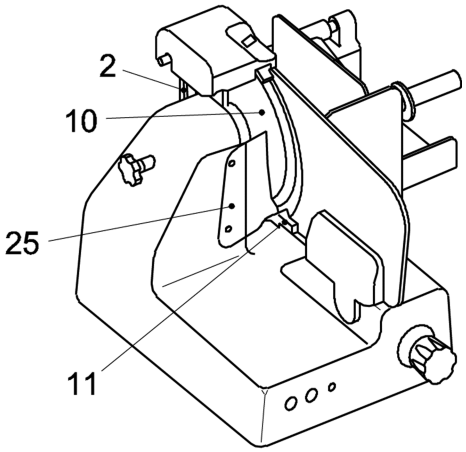
Note 1 to entry: A slicing machine consists of a base, a blade, a blade cover, a blade guard, a blade sharpener, a gauge plate, a product support, a carriage, a product pusher and electrical components.



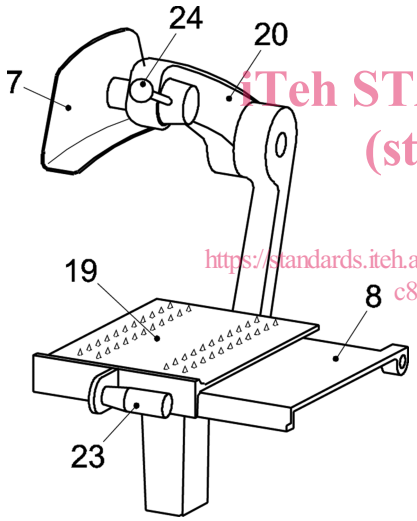
**3.2**
**blade**
circular rotating disk provided with a sharp cutting edge

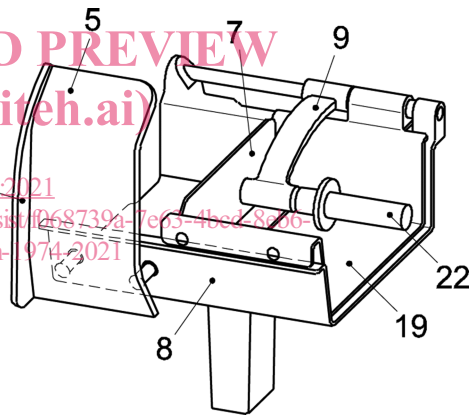
**3.3**
**horizontal feed slicing machine**
machine in which the product is fed horizontally to the blade




**a) design with product support**





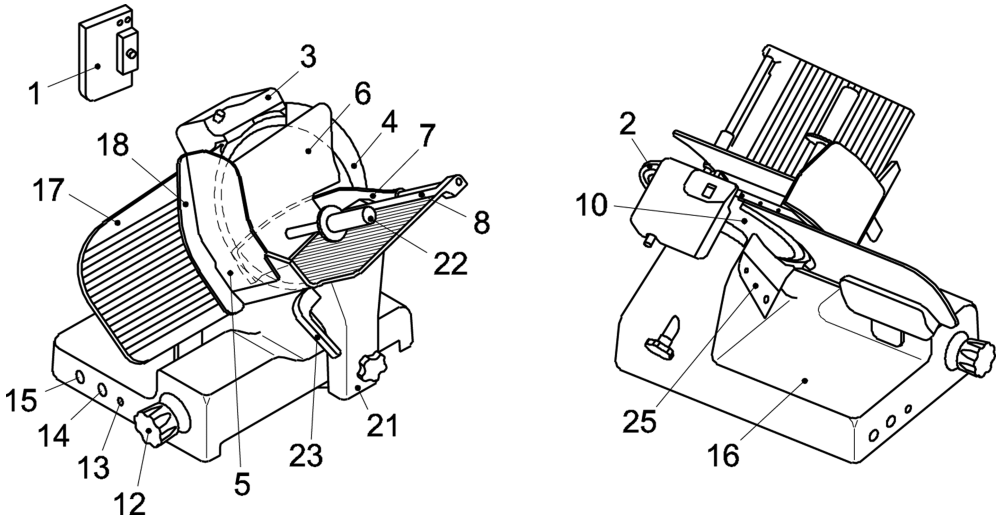

**b) design with sliding plate and clamping device** **c) design with sliding plate and pusher**

**Key**

| | | | | | |
|---|---|---|---|---|---|
| 1 | separated blade sharpener | 9 | pusher arm | 17 | gauge plate |
| 2 | blade guard | 10 | blade | 18 | thumb guard |
| 3 | integrated blade sharpener | 11 | slice support | 19 | sliding plate |
| 4 | blade cover | 12 | slice thickness control | 20 | clamping device |
| 5 | finger guard | 13 | indicator light | 21 | carriage |
| 6 | pusher guard | 14 | ON-switch | 22 | pusher handle |
| 7 | pusher | 15 | OFF-switch | 23 | carriage handle |
| 8 | product support | 16 | slice receiving surface | 24 | clamping handle |
| | | | | 25 | deflector |

**Figure 1 — Horizontal feed slicing machine (examples)**

**3.4**
**gravity feed slicing machine**
machine in which the product to be cut is fed to the blade by gravity, where the product support is inclined to the horizontal plane




**Key**

| | | | | | |
|---|---|---|---|---|---|
| 1 | separated blade sharpener | 8 | product support | 17 | gauge plate |
| 2 | blade guard | 10 | blade | 18 | thumb guard |
| 3 | integrated blade sharpener | 12 | slice thickness control | 21 | carriage |
| 4 | blade cover | 13 | indicator light | 22 | pusher handle |
| 5 | finger guard | 14 | ON-switch | 23 | carriage handle |
| 6 | pusher guard | 15 | OFF-switch | 25 | deflector |
| 7 | pusher | 16 | slice receiving surface | | |



**Figure 2 — Gravity feed slicing machine (example)**

**3.5**
**blade guard**
fixed annular ring mounted around the edge of that part of the blade which is not used for the cutting operation

**3.6**
**blade cover**
removable cover for the blade which covers the blade on the product support side

**3.7**
**gauge plate**
plate parallel to the blade, extending from the cutting edge of the blade and covering the stroke of the product support

Note 1 to entry: In most cases the gauge plate is used to adjust the slice thickness.

**3.8**
**slice thickness control**
control device by which the position of the gauge plate can be set in order to give the desired slice thickness

**3.9**
**blade sharpener**
device provided with the slicing machine, equipped with abrasive wheels used to sharpen the blade edge

**3.10**
**product support**
support for the product to be sliced

Note 1 to entry: Some different kinds of support are used for sausages, ham, fresh meat, etc. The product support is equipped with a pusher or a sliding plate and/or a clamping device.

**3.11**
**carriage**
device for the product support which allows the longitudinal movement of the product support

**3.12**
**carriage handle**
handle to move the carriage and feed the product against the gauge plate, either fitted on the carriage or the product support and sliding plate

**3.13**
**sliding plate**
plate on which the product is placed and which slides on top of the product support to facilitate the feeding of the product towards the blade



**3.14**
**pusher**
device used to hold and/or move the product along the product support against the gauge plate



**3.15**
**automatic carriage**
power driven carriage which allows the longitudinal movement of the product support

**3.16**
**pusher guard**
plate attached to the pusher to prevent access to the cutting edge of the blade

**3.17**
**finger guard**
plate mounted on (or part of) the product support which keeps the fingers of the operator's hand away from the cutting edge of the blade

**3.18**
**thumb guard**
plate mounted on the product support parallel to the blade and extending from the finger guard, covering the blade when the product support is in the backward position

**3.19**
**clamping device**
device which keeps the product positioned in the intended place on the sliding plate during the slicing operation

**3.20**
**slice support**
device to support the product until it is fully cut

**3.21**
**slice receiving surface**
area on which the slices are laid after the cutting operation

**3.22**
**stacker unit**
device which removes slices cut by the blade and places them on a slice receiving surface

Note 1 to entry: The stacker unit consists of, for example, a depositing arm and transport device.

**3.23**
**depositing arm**
component of the stacker unit which removes the slices from the transport device to the slice receiving surface

**3.24**
**transport device**
device which moves the slices from the blade to the depositing arm.

**3.25**
**deflector**
device that leads the slice away from the blade



**3.26**
**automatic product feeding device**
power driven device to move the product along the product support against the gauge plate.



**3.27**
**power supply cord**
electrical cord that supplies current to control devices and electrical equipment of the machine

**3.28**
**stopping time**
time from triggering the stop command to when the machine comes to an absolute stop

**3.29**
**end stop position**
non-cutting position where the gauge plate is closed and overlaps the blade

**3.30**
**discharge conveyor**
the discharge conveyor transports the slices away from the slice receiving surface

## 4 List of significant hazards

### 4.1 General

This clause contains all the significant hazards, hazardous situations and events in this document, identified by risk assessment as significant for this type of machinery and which require action to eliminate or reduce the risk.