



SLOVENSKI STANDARD
oSIST prEN 17677:2021
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Stroji za predelavo hrane - Dodajalni stroji za pekarstvo in pecivo - Varnostne in higienske zahteve

Food processing machinery - Craft bakery and pastry depositors - Safety and hygiene requirements

Nahrungsmittelmaschinen - Dressiermaschinen - Sicherheits- und Hygieneanforderungen

Machines pour les produits alimentaires - Doseuses de boulangerie et de pâtisserie - Prescriptions relatives à la sécurité et l'hygiène

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ICS:

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

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

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prEN 17677

June 2021

ICS 67.260

English Version

Food processing machinery - Craft bakery and pastry depositors - Safety and hygiene requirements

Machines pour les produits alimentaires - Doseuses de
boulangerie et de pâtisserie - Prescriptions relatives à
la sécurité et l'hygiène

Nahrungsmittelmaschinen - Dressiermaschinen -
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.

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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.

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

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European foreword

This document (prEN 17677:2021) 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 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.

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Introduction

This document is a type-C-standard as stated in EN ISO 12100:2010.

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 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).

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.

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1 Scope

1.1 This document specifies safety and hygiene requirements for the design and manufacture of craft bakery and pastry depositors which:

- a) are intended to be used:
 - to deposit only pasty food (i.e.: cream, dough, batter etc.);
 - to deposit only on trays;
 - as standalone machines;
 - with manual loading of the dough in the hopper;
- b) are intended to be used with manual loading and unloading of the tray/s on/from the conveyor;
- c) can carry out only the following movements and relevant directions (see Figure 1a)):
 - Z: Vertical movement of the table and/or the deposit unit;
 - X: Horizontal movement of the conveyor;
 - Y: possible horizontal component of the movement only of the nozzles themselves inside the deposit unit;
- d) are fitted with one or more hoppers whose capacity is $\leq 60 \text{ dm}^3$ each; and
- e) have a total length of the tray conveyor $\leq 1\,600 \text{ mm}$;
- f) have a vertical movement between nozzles and conveyor $\leq 200 \text{ mm}$;
- g) have a maximum deposit performance:
 - ≤ 60 cycles/minute with up/down movement of the table or the deposit unit;
 - ≤ 100 cycles/minute without up/down movement of the table or the deposit unit;
- h) have a maximum trays performance ≤ 4 trays/minute.

These machines are intended only for professional use.

NOTE The machine is provided for being used by one operator at a time.

The loading of the dough in the hopper can be done by means of a separate automatic loading system, but in that case the hazards arising from the use of the automatic hopper loading system are not covered by this document.

This document deals with all significant hazards, hazardous situations and events relevant to adjustment, operation and cleaning of craft bakery and pastry depositors, when they are used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer.

This document covers requirements for the safe operation of the machine, including loading, depositing, unloading, cleaning and maintenance.

prEN 17677:2021 (E)**1.2** The following hazards are not covered by this document:

- hazards arising from the use of an automatic hopper loading system;
- hazards due to packaging, handling or transport;
- hazards arising from electromagnetic compatibility issues;
- hazards due to dismantling and disassembling;
- hazards due to the noise emitted by the machine;
- hazards due to control devices;
- hazards due to operational stop;
- hazards due to selection of control or operating modes;
- hazards due to failure of the power supply;
- hazards due to surfaces, edges or angles;
- hazards due to combined machinery;
- hazards due to variations in operating conditions;
- hazards due to uncontrolled movements;
- hazards due to adjustable guards restricting access;
- hazards due to errors of fitting;
- hazards due to radiation;
- hazards due to laser radiation;
- hazards due to isolation of energy sources;
- hazards due to information and warnings on the machinery;
- hazards due to information and information devices.

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The significant hazards covered by this document are described in Annex A.

1.3 The following machines are excluded from the scope of this document:

- a) machines which deposit pasty food by means of needles (injection);
- b) machines where the trays are put onto and/or removed from the conveyor automatically;
- c) machines which require a blade for the cutting system;
- d) domestic appliances;
- e) machines for industrial production;
- f) machines to deposit other products than food for bakery and pastry products.

1.4 In drafting this document, it has been assumed that the depositors falling within the scope are operated only by trained personnel. This document is not applicable to machines which are manufactured before the date of publication of this European Standard.

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 894-4:2010, *Safety of machinery — Ergonomics requirements for the design of displays and control actuators — Part 4: Location and arrangement of displays and control actuators*

EN 1672-2:2020, *Food processing machinery — Basic concepts — Part 2: Hygiene and cleanability requirements*

EN 60204-1:2018, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2016, modified)*

EN 60529:1991¹⁾, *Degrees of protection provided by enclosures (IP code) (IEC 60529:1989)*

EN 61496-1:2013, *Safety of machinery — Electro-sensitive protective equipment — Part 1: General requirements and tests (IEC 61496-1:2012)*

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 13849-2:2012, *Safety of machinery — Safety-related parts of control systems — Part 2: Validation (ISO 13849-2:2012)*

EN ISO 13854:2019, *Safety of machinery — Minimum gaps to avoid crushing of parts of the human body (ISO 13854:2017)*

EN ISO 13856-2:2013, *Safety of machinery — Pressure-sensitive protective devices — Part 2: General principles for the design and testing of pressure-sensitive edges and pressure-sensitive bars (ISO 13856-2:2013)*

EN ISO 13857:2019, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857:2019)*

EN ISO 14118:2018, *Safety of machinery — Prevention of unexpected start-up (ISO 14118:2017)*

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)*

1) As impacted by EN 60529:1991/A1:2000 and EN 60529:1991/A2:2013.

3 Terms and 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.

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

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

3.1.1

deposit unit

device which consists of at least one hopper, apertures or shaped spouts, which can rotate around a vertical axis through which the dough passes for being deposited on the tray, and of counter-rotating grooved or shaped rollers (metering rollers; see 3.1.2) which press (compact dough) and/or let pass (fluid dough) the right amount of dough through the openings/spouts; the unit can be static or mobile according to the X-axis, Z-axis or both axes

Note 1 to entry: If only the metering rollers and/or the rotating spouts move/s, but its support parts and the hopper do not move, the deposit unit has to be considered as static.

3.1.2

metering rollers

a couple of counter-rotating shaped (for instance, grooved) rollers whose function is to press (compact dough) and/or to let pass (fluid dough) the desired quantity of dough through the openings/spouts

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3.1.3

working cycle

sequence of the operational phases that are carried out by the machine between two subsequent dough deposits of products independent of the number of pieces which are produced, including the displacement of the tray

3.1.4

deposit performance

number of working cycles per minute

3.1.5

trays performance

number of trays per minute which can be loaded/unloaded in/from the machine, empty or with products, independently of the deposit performance

3.1.6

wire cutting system

system consisting of a thin steel wire fixed at the ends of a series of metal arms with a driven back and forth movement; the metal wire passing very close to the lower part of the outlet opening/spouts of the deposit unit effects the portioning of the products

3.1.7

table

unit consisting of a table frame, a tray conveyor and, if provided, table extension (optional)

3.1.8**table frame**

structure supporting the tray conveyor; it can be static or driven moving according to the X-axis, Z-axis or both axes (see Figure 1)

3.1.9**tray conveyor**

part of the table, which consists of one or more driven conveying device/s (belt, chain, etc.) which move the tray back and forth only in the X-direction (see Figure 1) to prepare receiving the products made with the next work cycle

3.1.10**table extension (optional)**

part of the table beyond the ends of the tray conveyor, which only serves to support the tray before it is taken and moved towards the deposit zone or after it has been left free (even if they can be pushed by the other trays advancing) by the tray conveyor (see Figure 1); the length of an extension is at most 100 mm greater than half the length of the longest tray that can be used with the machine, as stated by the manufacturer in the instructions (see 6.1), and in any case ≤ 500 mm

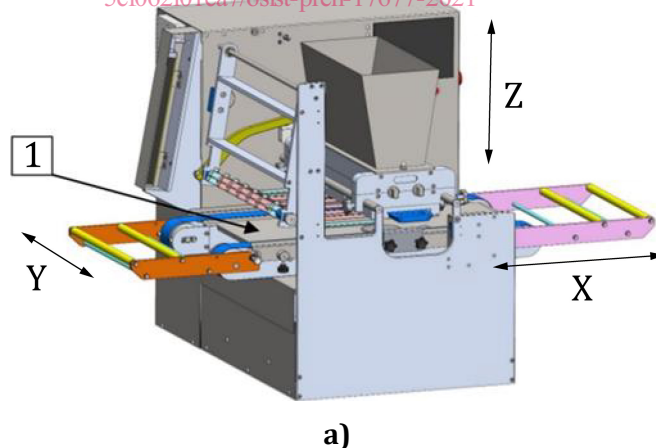
3.1.11**length of the tray conveyor****L**

length of the part of the conveyor that acts directly on a tray to move it, without taking into account the table extension (optional) (see 3.1.10) and the table frame (see Figure 1)

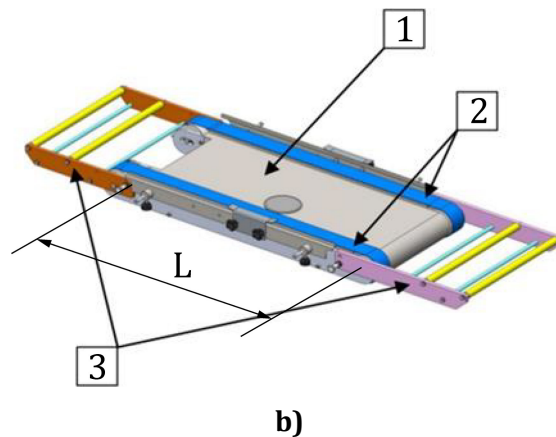
3.1.12**removable interlocking guard**

interlocking guard which can be taken away without the use of tools

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**Key**

- 1 table frame
- 2 tray conveyor
- 3 table extension (optional)
- L length of the tray conveyor
- X axis parallel to the direction of the horizontal movement back and forth of the tray conveyor
- Y horizontal axis perpendicular to X
- Z vertical axis perpendicular to X and Y and parallel to the direction of the table up and down movement, if provided

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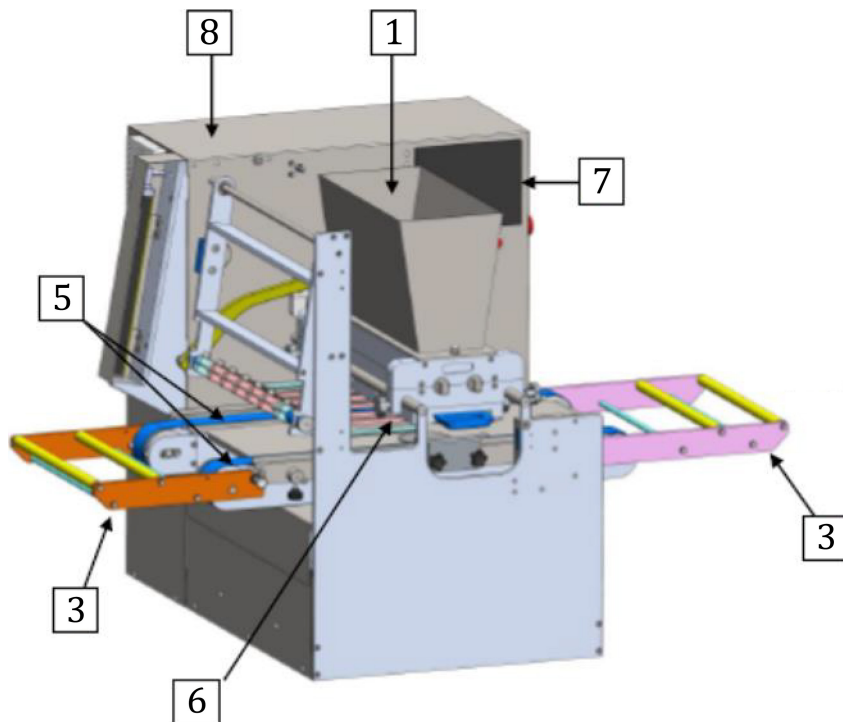
Figure 1 — Example of a craft bakery and pastry depositor

3.2 Description

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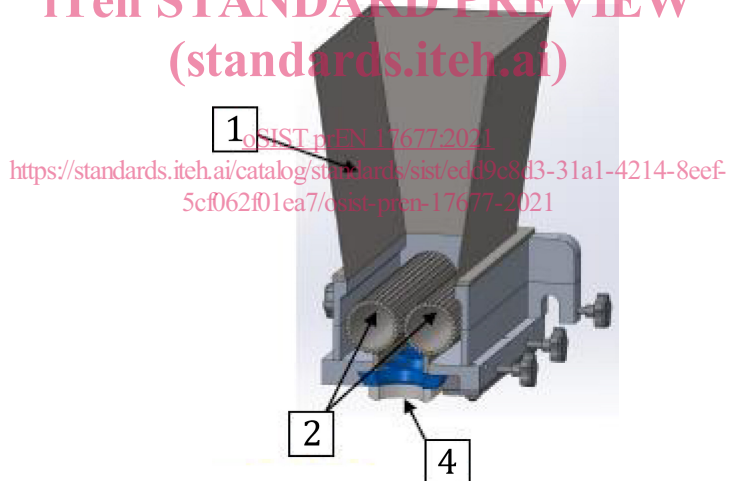
[https://standards.iteh.ai/catalog/standards/sist/edd9c8d3-31a1-4214-8eef-](https://standards.iteh.ai/catalog/standards/sist/edd9c8d3-31a1-4214-8eef-5cf062f01ea7/osist-pren-17677-2021)**3.2.1 Description of the machine**[5cf062f01ea7/osist-pren-17677-2021](https://standards.iteh.ai/catalog/standards/sist/edd9c8d3-31a1-4214-8eef-5cf062f01ea7/osist-pren-17677-2021)

A craft bakery and pastry depositor usually consists of a frame supporting the following main elements (see example in Figure 2).



a) Complete machine

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b) Hopper with metering rollers