SLOVENSKI STANDARD
oSIST prEN 12463:2018

01-oktober-2018

Stroji za predelavo hrane - Polnilniki in zamenjljiva oprema - Varnostne in higienske zahteve

Food processing machinery - Filling machines and interchangeable equipment - Safety and hygiene requirements

Nahrungsmittelmaschinen - Füllmaschinen und auswechselbare Ausrüstung - Sicherheits- und Hygieneanforderungen

Machines pour les produits alimentaires - Machines à pousser et équipements interchangeables - Prescriptions relatives à la sécurité et l'hygiène

Ta slovenski standard je istoveten z: **prEN 12463**

ICS:

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

oSIST prEN 12463:2018 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 12463

August 2018

ICS 67.260

Will supersede EN 12463:2014

English Version

Food processing machinery - Filling machines and interchangeable equipment - Safety and hygiene requirements

Machines pour les produits alimentaires - Machines à pousser et équipements interchangeables - Prescriptions relatives à la sécurité et l'hygiène

Nahrungsmittelmaschinen - Füllmaschinen und auswechselbare Ausrüstung - 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.

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.

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

Ref. No. prEN 12463:2018 E

Contents

Page

European foreword

This document (prEN 12463:2018) 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 12463:2014.

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 12463:2014 are listed below:

— Clause 1: clarified for filling machines and interchangeable equipment;

— Clause 2: normative references updated;

— Clause 3: terms revised and supplemented; consistent use throughout the standard;

— Clause 4: table updated;

— Clause 5: structure improved and clearer;

— Subclause 5.3.4: structure and contend improved and clearer;

— Clause 6: verification list updated;

— Clause 7: supplemented;

— Figures partly renewed, keys supplemented and clarified.

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 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.

1 Scope

1.1 General

This document applies to:

— filling machines with cylinder and piston;

— filling machines with feed intake hopper;

— filling machines with vacuum hopper;

hereafter referred to as filling machines which process e.g. meat, cheese and other pasty substances, excluding dry or frozen materials. They pump foodstuff into casings or bring it to a following process.

This document applies also to the interchangeable equipment for filling machines with which a wide range of additional functions can be implemented. For example: portioning, depositing, mincing, co-extruding, dividing and forming.

This document deals with all significant hazards, hazardous situations and events relevant to filling machines and interchangeable equipment (hereafter referred to as machines), when they are used as intended and under the conditions foreseen by the manufacturer and also the reasonable foreseeable misuse (see Clause 4).

These significant hazards, hazardous situations and events can arise during all the life phases including transportation, assembly, dismantling, disabling and scrapping of the machines.

This document is not applicable to machines which were manufactured before the date of publication of this document by CEN.

Filling machines described in this document are no forming, filling and sealing machines as described in EN 415-3:1999+A1:2009. Clipping machines as described in EN 13885:2005+A1:2010 are not covered by this document.

1.2 Types of filling machines and interchangeable equipment covered by this standard

1.2.1 Filling machines with cylinder and piston

Filling machines with cylinder and piston consist of piston, closing cover, machine frame, accessory drive mechanism and electrical and hydraulic components (see Figure 1).

The material being processed will be fed by hand into the cylinder.

Filling machines with cylinder and piston can be fitted with a dividing device.

1.2.2 Filling machines with feed intake hopper

Filling machines with feed intake hopper (with or without infeed auger, see Figure 2) consist of feeder on the discharge side of the feed intake hopper, machine frame, drive mechanism for interchangeable equipment and electric, electronic or pneumatic components, depending on machine type.

The material being processed will be fed by hand (or optionally a loading device) into the feeding hopper of the filling machine.

Filling machines with feed intake hopper can be equipped with:

— dividing device;

— cover or photoelectric guard at the mouth of the feed intake hopper;

— pressure-sensitive protective device at the hopper edge;

— divided hopper;

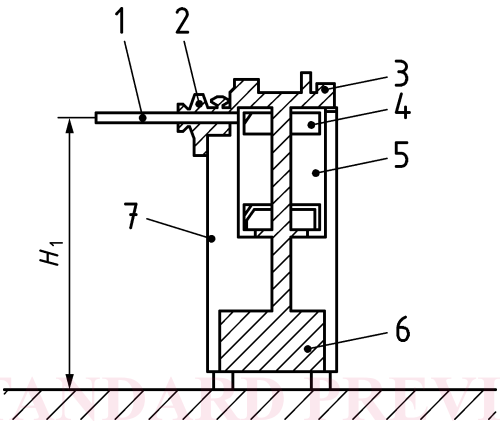
— infeed auger;

— counter auger;

— step or ladder;

— two-hand control device at the mouth of the feed intake hopper;

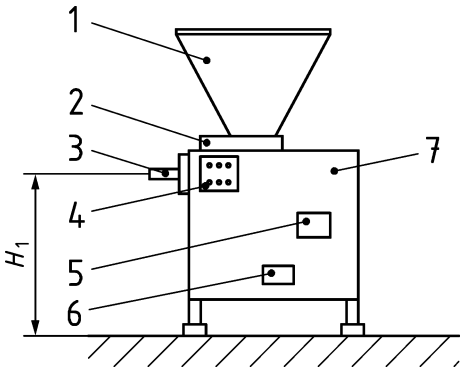
— knee-operated lever switches or hand operated switches.



Key

1 filling horn
2 dividing device
3 closing cover
4 piston
5 cylinder
6 drive mechanism
7 ON-/OFF-switch

Figure 1 — Filling machine with cylinder and piston



Key

1 feed intake hopper
2 feeder
3 filling horn
4 ON-/OFF-switch
5 step
6 intermediate step
7 drive mechanism

Figure 2 — Filling machine with feed intake hopper

1.2.3 Filling machines with vacuum hopper

Filling machines with vacuum hopper (with or without infeed auger, see Figure 3) consist of suction pipe with storage container, feeder, vacuum hopper with locking device on the intake side, machine frame, drives for interchangeable equipment and electrical, electronic or pneumatic components, depending on the machinery category.

Filling machines with vacuum hoppers can be loaded by one or more of the following:

— manual loading;

— vacuum suction;

— feeder.

Filling machines with vacuum hoppers are to be switched on and off by lever switches operated by knee or hand and/or by remote control signals.

Filling machines with vacuum hoppers can be equipped with:

— dividing device;

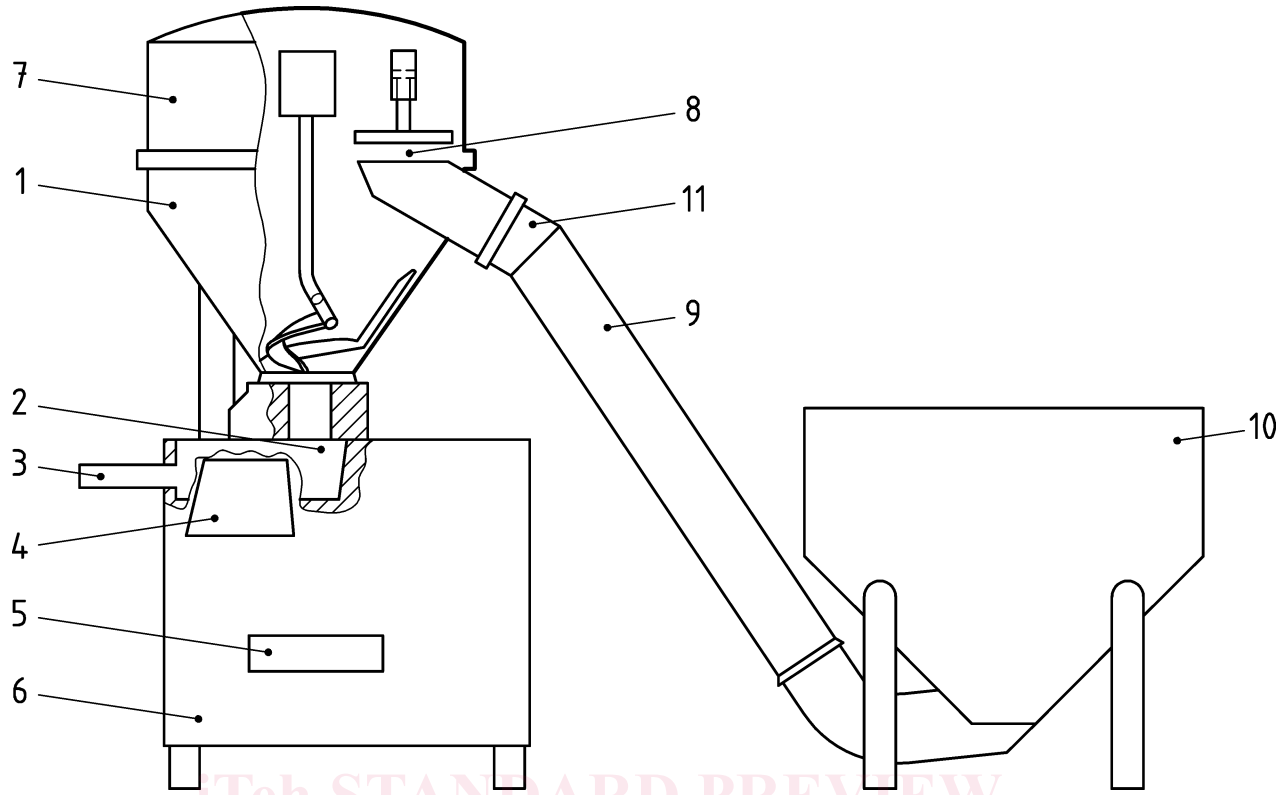
— cover on vacuum hopper;

— infeed auger;

— counter auger;

— foot board or ladder;

— suction pipe and storage container.



Key

1	vacuum hopper	7	lid on vacuum hopper
2	feeder	8	inlet valve
3	outlet	9	suction pipe
4	ON-/OFF-switch	10	storage container
5	step	11	pipe connection inlet
6	drive mechanism		

Figure 3 — Filling machine with vacuum hopper

1.2.4 Interchangeable equipment for filling machines

Interchangeable equipment are devices which can be assembled to filling machinery by the operator in order to attribute one or more new functions such as: portioning, twisting, voiding, forming, mincing. Interchangeable equipment does not operate independently. The interchangeable equipment will be actuated directly or by filling machines.

Interchangeable equipment dealt with in this document (see 5.3.4) are:

— cutting device (see Figure 13);

— forming device (see Figure 14);

— twisting device (see Figure 15);

— linking gear box (see Figure 16);

— portioning device (see Figure 17);

— holding device (see Figure 18);

— mincing device (see Figure 19);

— sausage production device (see Figure 20);

— filling stream divider device (see Figure 21);

— casing spooling device (see Figure 22);

— co-extrusion device (see Figure 23);

— loading device (see Figure 24).

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 574:1996+A1:2008, *Safety of machinery — Two-hand control devices — Functional aspects — Principles for design*

EN 614-1:2006+A1:2009, *Safety of machinery — Ergonomic design principles — Part 1: Terminology and general principles*

EN 619:2002+A1:2010, *Continuous handling equipment and systems — Safety and EMC requirements for equipment for mechanical handling of unit loads*

EN 1005-1:2001+A1:2008, *Safety of machinery — Human physical performance — Part 1: Terms and definitions*

EN 1005-2:2003+A1:2008, *Safety of machinery — Human physical performance — Part 2: Manual handling of machinery and component parts of machinery*

EN 1005-3:2002+A1:2008, *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 60529:1991, *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)*

EN 60529:1991/A1:2000, *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989/A1:1999)*

EN 60529:1991:A2:2013, *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989/A2:2013)*

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

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 4871:2009, *Acoustics — Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)*

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 11688-1:2009, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 1: Planning (ISO/TR 11688-1:1995)*

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 13855:2010, *Safety of machinery — Positioning of safeguards with respect to the approach speeds of parts of the human body (ISO 13855:2010)*

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)*

EN ISO 14122-3:2016, *Safety of machinery — Permanent means of access to machinery — Part 3: Stairs, stepladders and guard-rails (ISO 14122-3:2016)*

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:

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

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

3.1
twisting device
device to separate one portion from the next by twisting

3.2
dividing device
device to divide the product into portions

Note 1 to entry: Mainly used types in fillers with cylinder and piston are rotary slide or valve plate.

3.3
hanging device
device to suspend the product from a hook or to transport it

3.4
linking gear box
device to rotate the filling nozzle

3.5
ejector/extractor
device for detaching the set of cutting tools

3.6
extraction claw
tool for detaching the set of cutting tools

3.7
loading device
device for lifting and tilting of transport cars

3.8
holding device
device for retaining and braking the product casing on the filling horn or filling nozzle

3.9
casing clamp
device for centring and clamping the shirred product casing

3.10
feed intake hopper
container for receiving products to be processed

3.11
fixing device
device for locking the transport car in the loading device to prevent falling off

3.12
feeder
unit for product transport

3.13
plough
device to reduce the turning of the product with the infeed auger

3.14
divided hopper
feed intake hopper with a disconnecting point in the upper hopper part

3.15
piston
moving part for pressing out the product

3.16
blade
cutting tool with one or several blades

3.17
rotating head
hinged installation with one or more filling nozzles

3.18
grinder housing
casing for holding the set of cutting tools

3.19
set of cutting tools
arrangement of blades and hole plates for size reduction of product

3.20
counter auger
fixed counterpart to the infeed auger

3.21
transport car
movable container for holding the processed or unprocessed product

3.22
cutting device
device for the cutting of portions

3.23
closing cover
closing plate at the opening of the cylinder

3.24
infeed auger
rotating conveying element in the feed intake hopper

3.25
vacuum suction
suction of the product through the suction pipe into the vacuum hopper by means of negative pressure

3.26
interchangeable equipment
device which, after the putting into service of machinery, is assembled with that machinery by the operator himself in order to change its function or attribute a new function

3.27
sausage production device
device which produce products in a cylindrical form

Note 1 to entry: Usually, a sausage is formed in a casing made from intestine, but sometimes from synthetic materials. The filling is not limited to ground meat.

3.28
design dimension
sum of dimensions measured from the floor, in the case of steps, intermediate steps or platforms from the standing area to the hopper edge and from the hopper edge to the first danger point in the feed intake hopper

3.29
filling horn
tube for filling the product, attached to the filling machine