



SLOVENSKI STANDARD
oSIST prEN 16888:2015
01-september-2015

Stroji za predelavo hrane - Razpršilniki kreme - Varnostne in higienske zahteve

Food processing machinery - Cream whippers - Safety and hygiene requirements

Nahrungsmittelmaschinen - Sahneaufschlagmaschinen - Sicherheits- und Hygieneanforderungen

Machines pour les produits alimentaires - Machines à crème fouettée - 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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Food processing machinery - Cream whippers - Safety and hygiene requirements

Nahrungsmittelmaschinen - Sahneaufschlagmaschinen - Sicherheits- und Hygieneanforderungen

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Foreword

This document (prEN 16888:2015) 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 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.

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Introduction

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

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.

Complementary to the hygiene requirements common to all food processing machines, specific requirements for cleanability and sanitation of the machines in the scope are formulated.

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1 Scope

This European Standard applies to machines for the preparation of whipped cream, mousse and aerated dessert, as described in Clause 3. The standard applies to machinery with suction of the product from internal or external tank.

This European Standard deals with all significant hazards, hazardous situations and events relevant to the machinery, when they are used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer (see Clause 4). This European Standard deals with the hazards which can arise during transport, assembly, commissioning, operation, cleaning, use, maintenance, decommissioning, dismantling, disabling and scrapping of the machine.

This European Standard does not apply to equipment feeding and dosing, equipment, supply of inert gas and heating and cooling equipment and any extraction (container, extraction belt etc.).

This European Standard is not applicable to machines which are manufactured before the date of publication of this European Standard by CEN.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 349:1993+A1:2008, *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, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards*

EN 1040, *Chemical disinfectants and antiseptics — Quantitative suspension test for the evaluation of basic bactericidal activity of chemical disinfectants and antiseptics — Test method and requirements (phase 1)*

EN 1275, *Chemical disinfectants and antiseptics — Quantitative suspension test for the evaluation of basic fungicidal or basic yeasticidal activity of chemical disinfectants and antiseptics — Test method and requirements (phase 1)*

EN 1276, *Chemical disinfectants and antiseptics — Quantitative suspension test for the evaluation of bactericidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas — Test method and requirements (phase 2, step 1)*

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 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 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)*

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EN ISO 11201, *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)*

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 13849-1:2008, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2006)*

EN ISO 13850, *Safety of machinery — Emergency stop — Principles for design (ISO 13850)*

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)*

3 Terms and definitions and description of machines**3.1 Terms and definitions**

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

3.1.1**tank lid**

mobile guard used for the tank which contains the product to be whipped

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3.1.2**tank**

tank used to contain the product to be whipped

Note 1 to entry: For the storage of the cream a removable tank or the possibility of direct charge with bag-in-box systems is to be included.

3.1.3**dispenser**

device to allow the dispense of the whipped product

3.1.4**labyrinth**

suitable device to incorporate air into the product

3.1.5**pump**

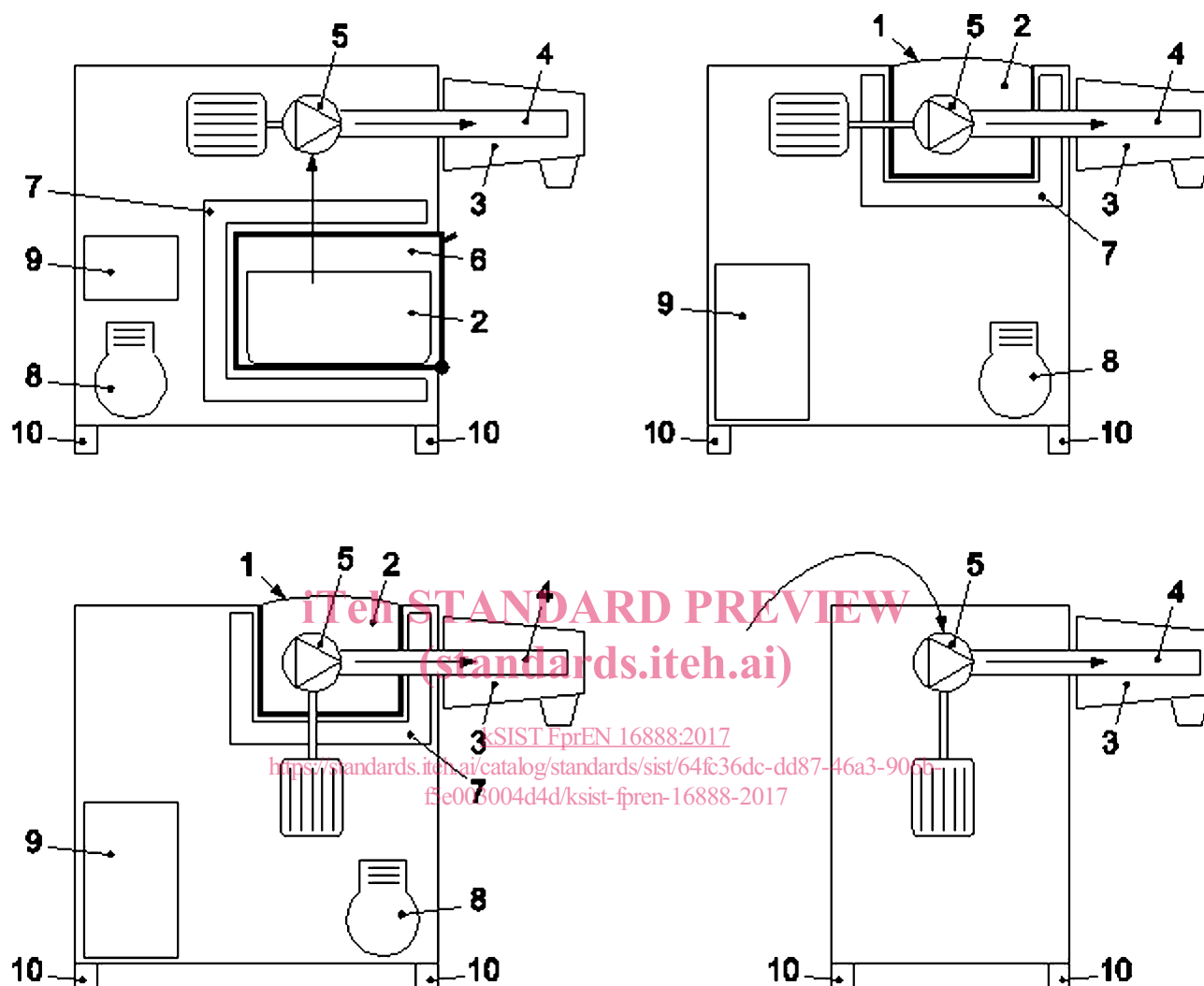
suitable device to transfer the product and the sucked air in the labyrinth

3.1.6**refrigerated compartment**

cooled compartment of the tank which contains the product

3.2 Description of cream whipping machines

Cream whipping machines are used to keep the liquid product cool and to add air to the product for the whipping process. Figure 1 shows typical whipping cream machine layouts and their main elements.



Key

- 1 tank lid
- 2 tank
- 3 dispenser
- 4 labyrinth
- 5 pump
- 6 refrigerated compartment
- 7 cooling device
- 8 compressor
- 9 condensing unit
- 10 feet

Figure 1 — Typical layouts of machines for cream whippers, mousse, cream cakes and desserts

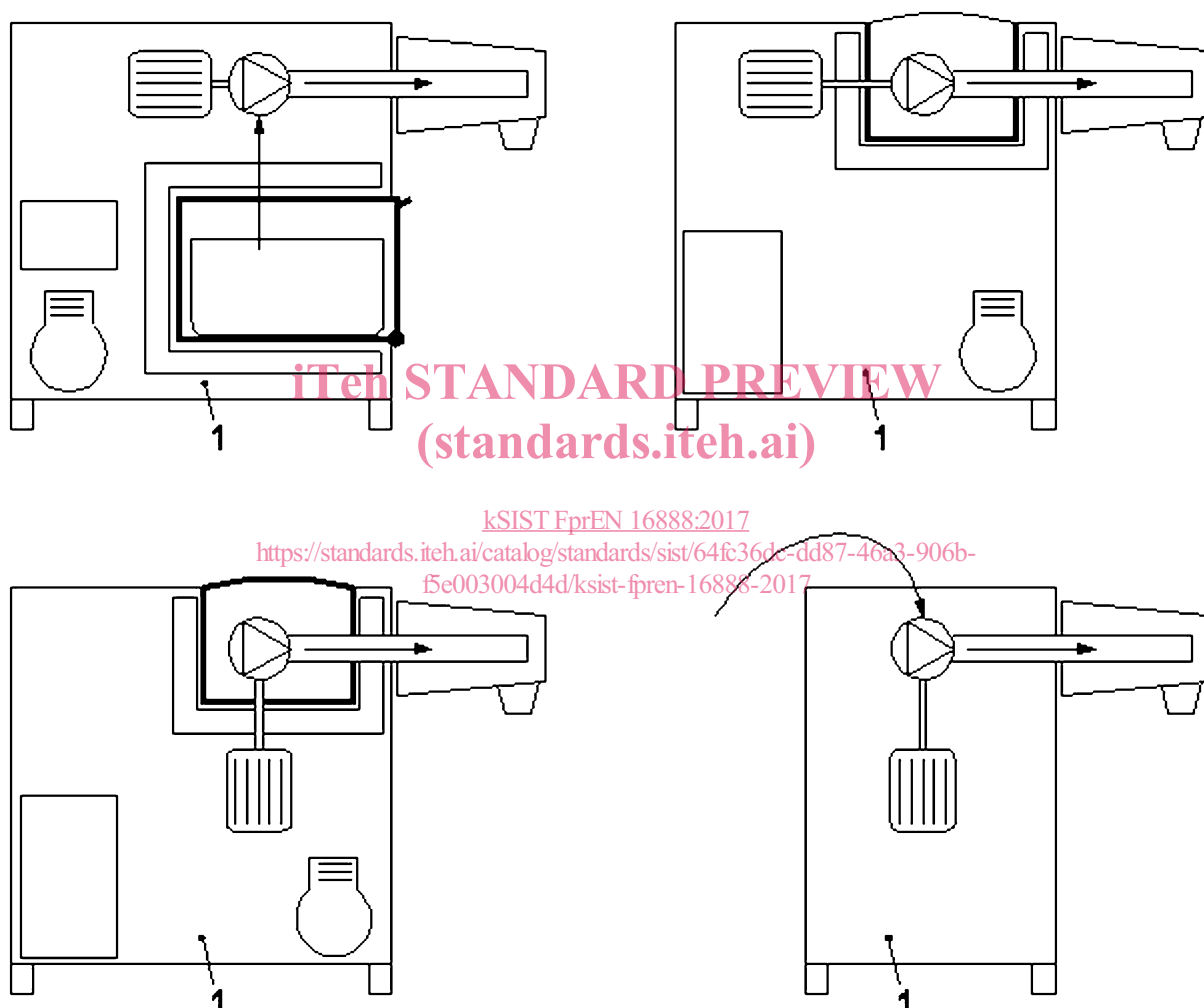
4 List of significant hazards

4.1 General

This clause contains all the significant hazards, hazardous situations and events, as far as they are dealt with in this European Standard, identified by risk assessment as significant for this type of machinery and which require action to eliminate or reduce the risk.

4.2 Mechanical hazards

The example shown in Figure 2 illustrates the position of danger zones associated with mechanical hazards for each type of machinery:



Key

1 zone 1

Figure 2 — Danger zone of machinery for cream whippers, mousse, cream cakes and desserts

Zone 1: Loss of stability of machine – access to areas adjacent to the machine;

— hazard of trapping and crushing of whole or part of body if machine overturns

4.3 Electrical hazards

Hazard of electric shock from direct or indirect contact with live components.

Hazard of external influences on electrical equipment (e.g. cleaning with water).

If liquid as spilled products or cleaning agents such as water come into contact with the electrical conductors, there is a danger of electric shock.

4.4 Hazards generated by noise

Machinery can generate an airborne noise being able to involve a deterioration of hearing or accidents due to the interferences with the oral communication and the perception of the acoustical signals.

The noise can produce:

- ringing in the ears;
- tiredness, stress, etc.;
- other effects as loss of balance, loss of perception;
- interference with speech communication;
- inability to hear acoustic warning signals.

4.5 Hazard generated by neglecting ergonomic principles

During operation, cleaning and maintenance, there could be the risk for safety and health resulting from awkward body postures or from an excessive effort.

Movement or filling of the storage liquid cream's tank especially at heights can create a risk of injury to the body from lifting, pushing and pulling of heavy loads.

4.6 Hazard generated by neglecting hygienic design principles

The neglect of hygienic principles can create unacceptable contamination of foodstuff and therefore a risk to human health of the operator and consumer, i.e. through physical, chemical or microbial pollution.

4.7 Hazards generated by loss of stability or tipping

Risk of impact or crushing the body, in particular resulting from machinery with castors.

5 Safety and hygiene requirements and/or protective measures

5.1 General

Machinery shall be designed according to the principles of EN ISO 12100:2010 for hazards relevant but not significant, which are not dealt with by this standard (e.g. sharp edges).

This specific risk assessment shall be part of the general risk assessment of the machine.

When fixed guard, or parts of the machine acting as such, are not permanently fixed e.g. by welding, their fixing systems shall remain attached to the guards or to the machinery when the guards are removed.