



SLOVENSKI STANDARD
oSIST prEN 16876:2015
01-september-2015

Stroji za predelavo hrane - Stroji za izdelavo sladoleda - Varnostne in higienske zahteve

Food processing machinery - Soft ice cream machines - Safety and hygiene requirements

Nahrungsmittelmaschinen - Maschinen zur Herstellung von Softeis - Sicherheits- und Hygieneanforderungen

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

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ICS:

67.100.40	Sladoled in ledene slaščice	Ice cream and ice confectionery
67.260	Tovarne in oprema za živilsko industrijo	Plants and equipment for the food industry

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EUROPEAN STANDARD
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Food processing machinery - Soft ice cream machines - Safety and hygiene requirements

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

Nahrungsmittelmaschinen - Maschinen zur Herstellung von Softeis - 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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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (prEN 16876:2015) 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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prEN 16876:2015 (E)**1 Scope**

This European Standard applies to machines of handling and delivery of soft ice cream, frozen yogurt, milk shake machinery and other food products as chocolate and pastry, as described in Clause 3.

The European Standard applies to fixed and movable machinery (not designed to be moved during operation), with a rated capacity of not more than 150 kg/h.

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 covers the following types of machines:

- soft ice cream, frozen yogurt and milk shake machinery;

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.

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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 953:1997+A1:2009, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards*

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 60204:2005, 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)*

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 13732-1, *Ergonomics of the thermal environment — Methods for the assessment of human responses to contact with surfaces — Part 1: Hot surfaces (ISO 13732-1)*

EN ISO 13732-3, *Ergonomics of the thermal environment — Methods for the assessment of human responses to contact with surfaces — Part 3: Cold surfaces (ISO 13732-3)*

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

closure of storage liquid soft ice cream's tank

mobile guard used for the tank which contains the liquid soft ice cream

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3.1.2

storage liquid soft ice cream's tank

tank with direct or indirect cooling used to contain, preserve or heat-treating the liquid soft ice cream

3.1.3

cylinder

part of machinery suitable for the treatment of the liquid soft ice cream

3.1.4

mixing device

suitable device for mixing the liquid soft ice cream

3.1.5

dispenser

suitable device to dispense the finished product

3.1.6

feed opening device

suitable device to transfer the product from the liquid soft ice cream to the tank

prEN 16876:2015 (E)**3.2 Description of machines****Combined machines**

The machines covered by this standard are designed to prepare soft ice cream machinery (soft ice cream, frozen yogurt and milk shake, whose main ingredients are generally milk and its derivatives. When the tub is in the load position, the machine receives the ingredients are weighed or measured. This operation is controlled by the operator of the machine.

The machine works the ingredients over a period of time defined by a user cycle.

At the end of the processing cycle, the product is downloaded into a mobile container through a regulator controlled by the tap.

The machine can be operated manually or fully automatically.

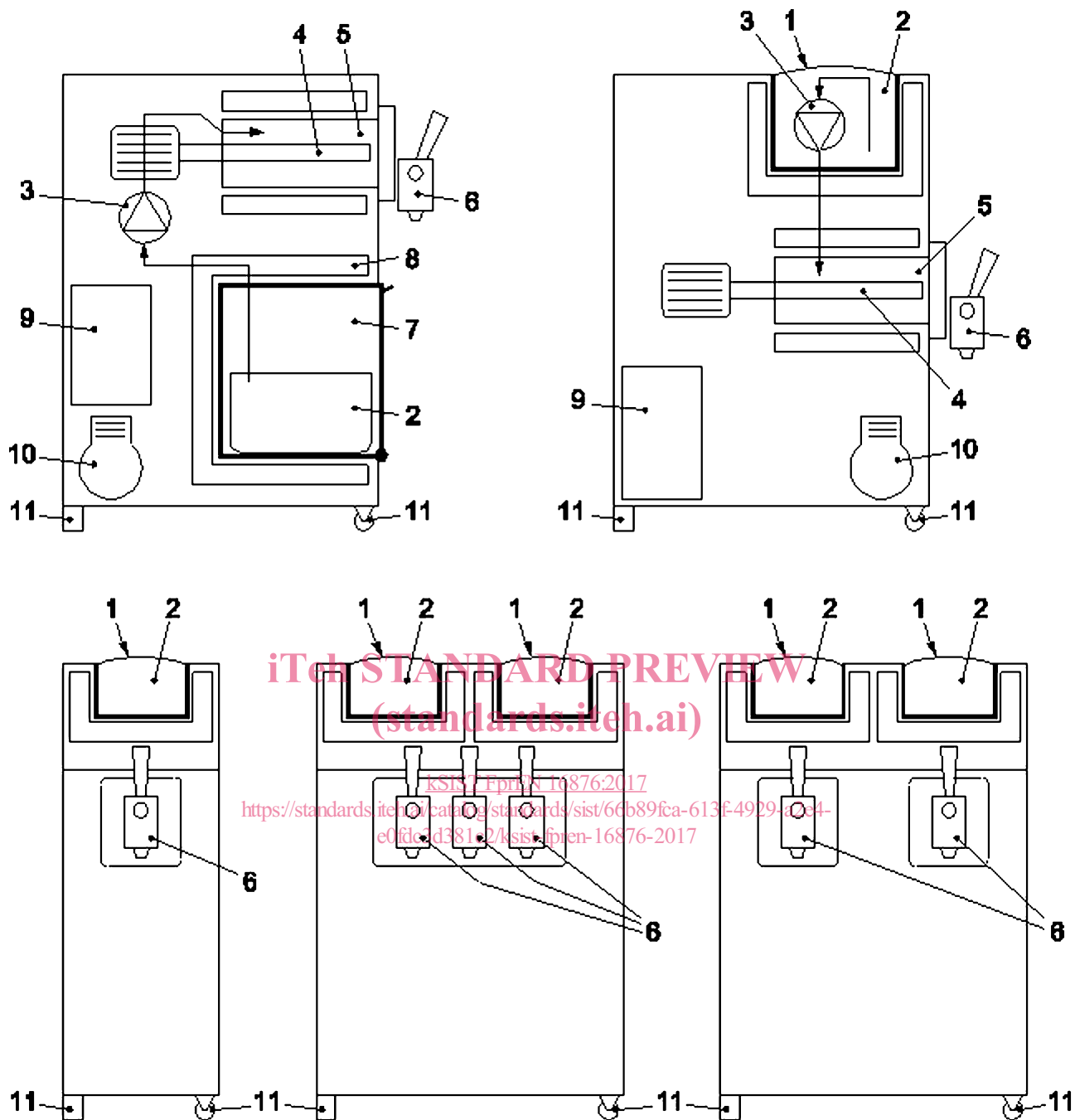
In Figure 1 is shown a machine for ice cream expressed typical single tank with the following main elements:

- closure of storage liquid soft ice cream's tank;
- storage liquid soft ice cream's tank;
- feed opening device;
- mixing device;
- cylinder;
- dispenser;
- condensing unit;
- wheels or feet.

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Key

- | | | | |
|---|---------------------------------------------|----|-----------------|
| 1 | lid of storage liquid soft ice cream's tank | 8 | cooling device |
| 2 | storage liquid soft ice cream's tank | 9 | condensing unit |
| 3 | pump | 10 | compressor |
| 4 | mixing device | 11 | wheels or feet |
| 5 | cylinder | | |
| 6 | dispenser | | |
| 7 | refrigerated compartment | | |

Figure 1 — Typical layout of soft ice cream machinery

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.

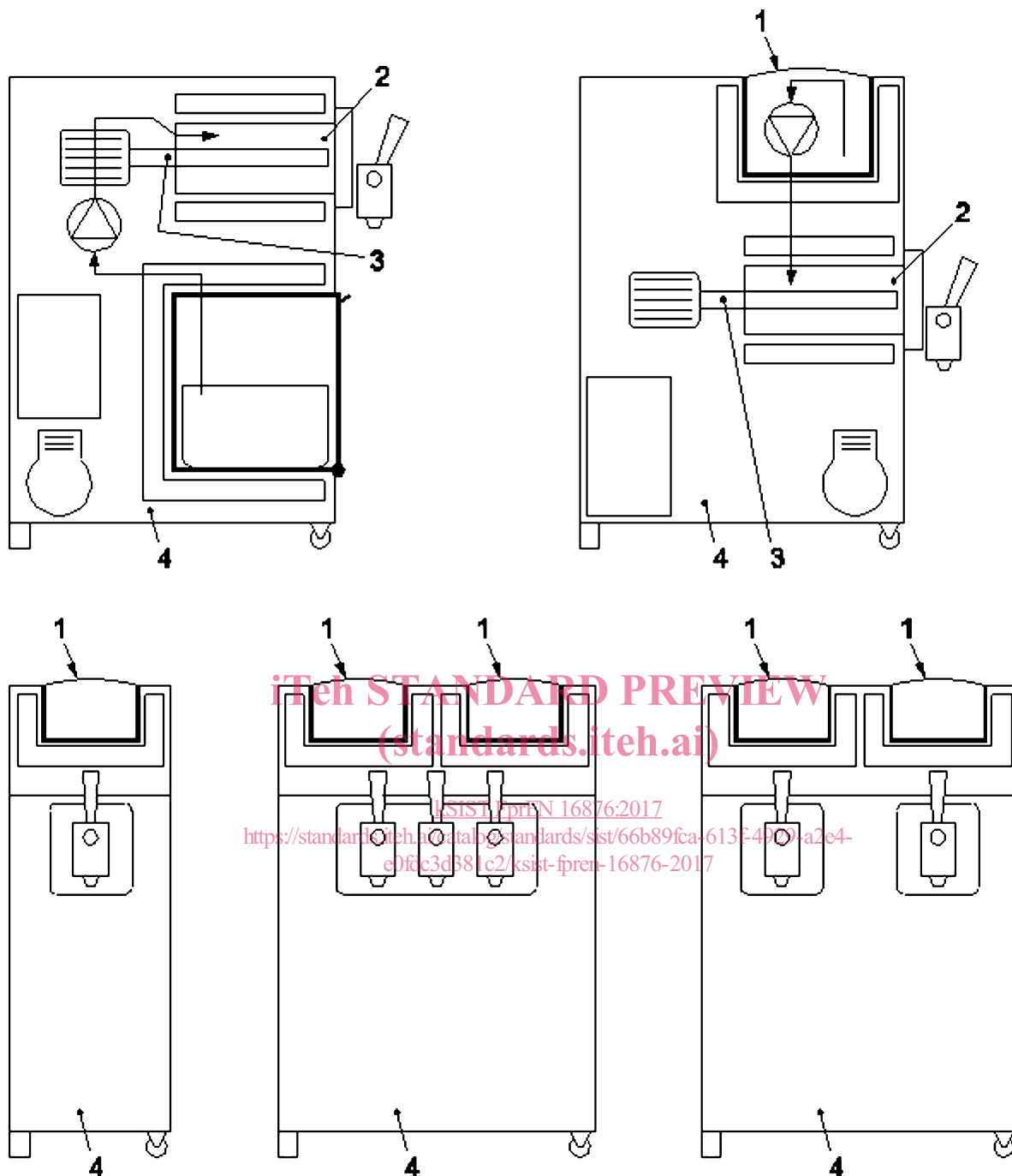
4.2 Mechanical hazards

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

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Key

- 1 zone 1
- 2 zone 2
- 3 zone 3
- 4 zone 4

Figure 2 — Danger zones of soft ice cream machinery