SLOVENSKI STANDARD
SIST EN 12853:2002

01-september-2002

Stroji za predelavo hrane - Roļ no vodeni meġalniki in stepalniki - Varnostne in higienske zahteve

Food processing machinery - Hand-held blenders and whisks - Safety and hygiene requirements

Nahrungsmittelmaschinen - Handmixer und Handrührer - Sicherheits- und Hygieneanforderungen

Machines pour les produits alimentaires - Batteurs et fouets portatifs - Prescriptions relatives a la sécurité et a l'hygiene

Ta slovenski standard je istoveten z: **EN 12853:2001**

ICS:

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

SIST EN 12853:2002 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 12853

May 2001

ICS 67.260

English version

Food processing machinery - Hand-held blenders and whisks - Safety and hygiene requirements

Machines pour les produits alimentaires - Batteurs et fouets portatifs - Prescriptions relatives à la sécurité et à l'hygiène

Nahrungsmittelmaschinen - Handmixer und Handrührer - Sicherheits- und Hygieneanforderungen

This European Standard was approved by CEN on 20 April 2001.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Ref. No. EN 12853:2001 E

Contents

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 153 "Food processing machinery - Safety and hygiene specifications", 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 November 2001, and conflicting national standards shall be withdrawn at the latest by November 2001.

It is one of a series of standards on the design and construction of machines used in catering:

— vegetable cutting machines;

— catering attachments for machines having an auxiliary drive hub;

— food processors and blenders;

— hand-held blenders and whisks;

— beam mixers;

— salad dryers;

— vegetable peelers;

— cooking kettles equipped with stirrer and/or mixer.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EC Directive(s).

For relationship with EC Directive(s), see informative Annex ZA, which is an integral part of this standard.

The annexes A and B are normative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

The use of hand-held blenders and whisks generates various mechanical or other hazards.

Their extensive use justifies the need for a standard covering both safety and the hazards to food hygiene arising from machine design, complementary to prEN 1672-1:1994 and EN 1672-2:1997, which state common requirements for food processing machines.

This European standard has been prepared t to be a harmonised standard to provide one means of conformity with the essential safety and hygiene requirements of the Machinery Directive and associated EFTA Regulations.

This European standard is a type C standard as stated in EN 1070:1998.

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

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 o the provisions of this type C standard.

1 Scope

1.1 This European standard specifies the safety and hygiene requirements for the design and manufacture of hand-held blenders and whisks used in the commercial and institutional catering, and in food shops.

The term "hand-held blenders" is used to refer to the equipment covered by this standard.

The machines covered by this standard are hand-held appliances whose tool is intended to process a foodstuff in a container. Tools are designed to crush, mix, mash, emulsify, etc. foodstuffs such as vegetables into soups, mashes, purees, sauces, mayonnaise, cream, dairy products and more generally to process all solid, liquid, pasty or powdery foodstuffs to obtain a homogeneous fluid.

These appliances are designed to process up to 100 l of food in one operation.

This standard applies to the following machines, according to their weight and to the operating modes required by their intended use:

— manually operated machines, using one or both hands, actuated throughout the whole operation (see figure 1);

— machines operating resting on the bottom of the container (see figure 2);

— machines fixed to or placed on a special support which can be fitted to the container (see figure 3). The support acts as a substitute for the operator for operations that take a long time or for food processing which may present risks of burns (steam or splashes).

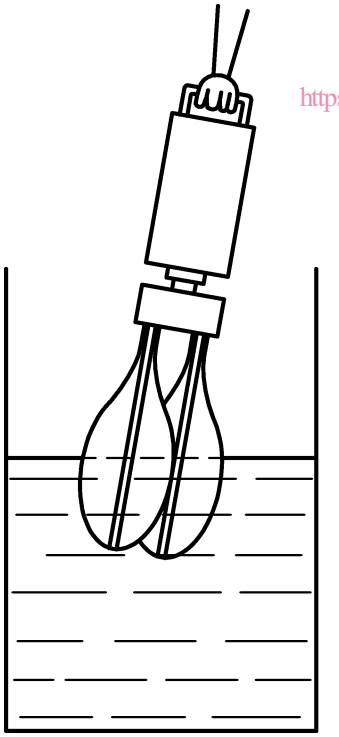


Figure 1 — Manually operated machine

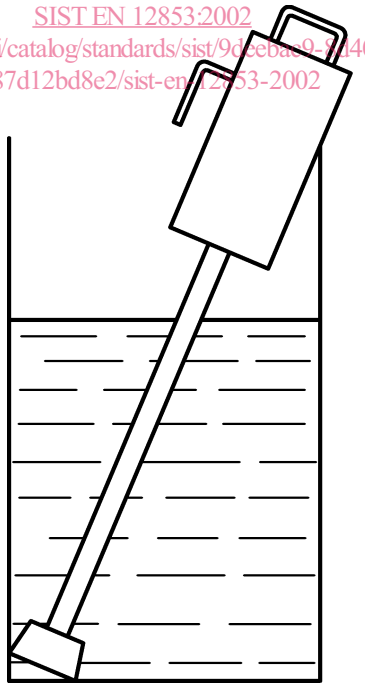


Figure 2 — Free-standing machine

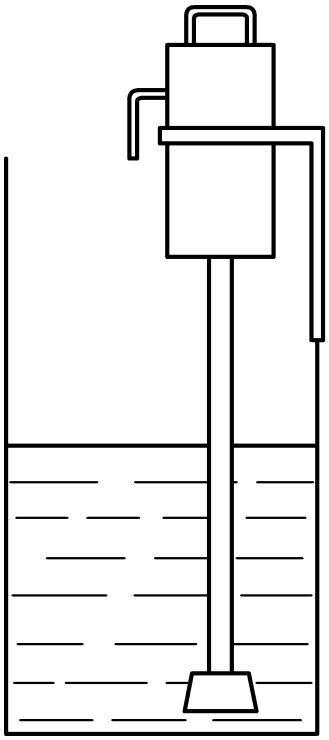


Figure 3 — Fixed machine

It applies when such machines are operated under the intended conditions of use as defined in 3.12 of EN 292-1:1991 and stated in the instruction handbook (see 7.1), including cleaning, removal of jammed food, feeding and changing the cutting device.

1.2 This standard does not apply to:

— domestic machines;

— vertical crushers, sieves mounted on trolleys and beam mixers (beam mixers are covered by prEN 12854:1997).

1.3 This standard covers significant hazards at such machines, as identified by risk assessment (see EN 1050:1996), which are listed in clause 4 of this standard. In addition machinery shall comply as appropriate which EN 292 and prEN 1672-1:1994 for hazards which are not covered by this standard.

1.4 Noise is not considered to be a significant hazard for hand-held blenders and whisks. This does not mean that the manufacturer of these machines is absolved from reducing noise and making a noise declaration. Therefore a noise test code is proposed in Annex A.

Vibrations are not considered to be a significant hazard for these machines and no test method is given.

1.5 This standard applies primarily to machines which are manufactured after its date of issue.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 292-1:1991, *Safety of machinery : Basic concepts, general principles for design - Part 1 : Basic terminology, methodology.*

EN 292-2:1991, *Safety of machinery : Basic concepts, general principles for design - Part 2 : Technical principles and specifications*.

EN 292-2:1991/A1:1995, *Safety of machinery : Basic concepts , general principles for design - Part 2 : Technical principles and specifications.*

EN 294:1992, *Safety of machinery - Safety distances to prevent danger zones being reached by the upper limbs.*

EN 563:1994, *Safety of machinery - Temperatures of touchable surfaces - Ergonomics data to establish temperature limit values for hot surfaces.*

EN 614-1:1995, *Safety of machinery - Ergonomic design principles - Part 1 : Terminology and general principles.*

EN 953:1997, *Safety of machinery - General requirements for the design and construction of fixed and movable guards.*

EN 1070:1998, *Safety of machinery – Terminology*.

prEN 1672-1:1994, *Food processing machinery - Basic concepts - Part 1 : Safety requirements.*

EN 1672-2:1997, *Food processing machinery - Basic concepts - Part 2 : Hygiene requirements.*

EN 50081-1:1992, *Electromagnetic compatibility - Generic emission standard - Part 1 : Residential, commercial and light industry.*

EN 50081-2:1993, *Electromagnetic compatibility - Generic emission standard - Part 2 : Industrial environment.*

EN 50082-1:1992, *Electromagnetic compatibility - Generic immunity - Part 1 : Residential, commercial and light industry.*

EN 61000-6-2:1999, *Electromagnetic compatibility (EMC) - Part 6-2: Generic standards-Immunity for industrial environment (IEC 61000-6-2:1999).*

EN 60204-1:1997, *Safety of machinery - Electrical equipment of machines - Part 1 : General requirements (IEC 60204-1:1997).*

EN 60529:1991, *Degrees of protection provided by enclosures (IP code) (IEC 60529:1989).*

EN 60947-2:1995, *Low-voltage switchgear and controlgear - Part 2 : Circuit – breakers (IEC 60947-2:1995).*

EN ISO 3744:1995, *Acoustics - Determination of sound power levels of noise sources using sound pressure – Engineering method in an essentially free field over a reflecting plane (ISO 3744:1994).*

EN ISO 4871:1996, *Acoustics - Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996).*

EN ISO 11201:1995, *Acoustics - Noise emitted by machinery and equipment – Measurement of emission sound pressure levels at the work station and at other specified positions - Engineering method in an essentially free field over a reflecting plane (ISO 11201:1995).*

ISO 468:1982, *Surface roughness - Parameters, their values and general rules for specifying requirements.*

3 Terms and definitions – Description

3.1 Terms and definitions

For the purposes of this standard, the terms and definitions given in EN 1070:1998 and the following terms and definitions apply.

3.1.1
blender
machine for crushing and pulverizing, equipped with a cutting tool composed of highspeed rotating blades which may be sharp and/or perforated

The rotating tool is located at the end of a shaft immersed in the processed food for progressively blending the food bulk.

3.1.2
whisk
machine for beating and emulsifying, equipped with tool composed of flexible and long wires gathered together around one or several rotating shaft(s). The tool operates with a large part of its length immersed in the processed food.

3.2 Description

Depending on the type of processing, the usual length of the operation may vary from a few seconds to more than ten minutes. Operation is designed to be discontinuous.

The rated power of hand-held blenders is usually less than 500 W.

The weight of these appliances is usually less than 10 kg.

Hand-held blenders usually consist of (see figure 4):

a) a body (1) which contains or supports:

- a motor and its transmission (2);
- one or several control devices, e.g : on/off control, variable speed drive, selector (3);

— one or several handles (4);

— one or several food processing tools/attachments which can be either fixed or removable (5).

b) where applicable, a support which can be fitted to a range of containers (6).

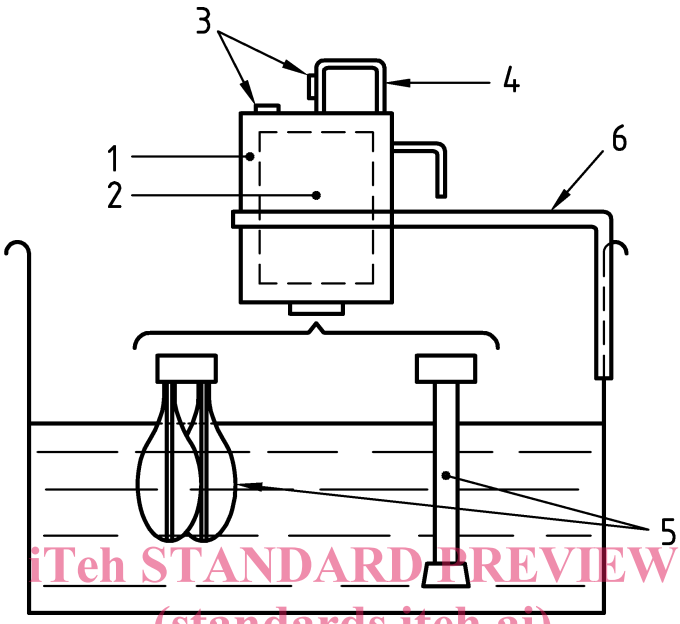


Figure 4 — Description of a hand-held blender

4 List of hazards

This standard covers the significant hazards related to intended conditions of use.

NOTE If the machine is not used as above, the manufacturer should, when he is informed of such situation, check on the basis of a new risk analysis that the preventive measures remain valid and sufficient.

4.1 Mechanical hazards

The mechanical hazards of impact, cutting, trapping, crushing are due to contact of the hands with the rotating parts. They may arise from the following :

— unintended starting;

— ejection of parts due to bursting or breaking during operation, or disconnection of parts;

— falling of parts and ejection of tools;

— falling of the machine.

NOTE As it would take a too long time to develop a test for checking the relevant requirement this last item will be dealt with at the stage of the revision of this standard.

4.2 Electrical hazards

Electrical shocks hazards may arise due to the ingress of moisture and liquids into the appliance caused by :

— the appliance falling into liquid; or

— liquids being splashed or hosed onto the appliance; or

— the appliance being used in a high humidity environment such as a steam-filled kitchen; or

— the appliance being handled by a person with wet hands.

4.3 Thermal hazards

Thermal hazards of burning hands and arms may arise from:

— contact with splashed processed hot food, steam or thermal radiations;

— contact with the hot handgrip.

4.4 Hazards generated by neglecting hygiene principles in machine design

4.4.1 Hazards to the operator

Hazards from the food being processed, e.g. inhalation of flour, sugar, … and from the cleaning agents used to disinfect the machine.

NOTE See also prEN 1672-1:1994 which deals with the hygiene risk to the operator.

4.4.2 Hazards to the consumer

Inability to clean food and splash areas effectively and thoroughly.

Contamination of the food by undesirable materials including residues of food, microbiological organisms as well as residues of cleaning and disinfecting fluids.

4.5 Hazards generated by neglecting ergonomic principles in machine design

Neglecting ergonomic principles can cause incorrect operation of controls and damage due to over-reaching, heavy loads, akward posture.

Poor design of grips and manual control.

5 Safety and hygiene requirements and/or measures

5.1 Mechanical hazards

5.1.1 Unintended starting

Due to the weight of the appliance and the need to operate it manually, in most cases with both hands, and for up to ten minutes, the resulting physical fatigue that would affect the operator precludes the systematic use of hold-to-run controls.

The switch shall be so designed and located that any unintended actuation of it is prevented during foreseeable handling of the machine (operational use, cleaning, storage, etc.).

5.1.2 Bursting of tool

Rotary food processing attachments and tools shall be designed and dimensioned to avoid the hazard of bursting during rotation under the effect of kinetic energy.

5.1.3 Disconnection of parts

All machine parts shall be designed and manufactured to prevent them from being unintentionally separated from the machine body during operation.

5.1.4 Moving parts : tools and transmission

5.1.4.1 Tools for food processing

5.1.4.1.1 Blender

For functional reasons the openings in the housing of the blade cannot comply with EN 294:1992 and may allow a cutting injury. There shall be at least a fixed guard on the drive side overlapping the cutting blades by a minimum of 10 mm in the radial and 5 mm in the axial dimensions (see figure 5).

The grip zone and the grips shall be designed and constructed in such a way that the operator's hands are kept away from the danger zone formed by the tool movement. The distance between these two zones shall be greater than or at least equal to 300 mm (see figure 6).

5.1.4.1.2 Whisk

For functional reasons the whisk area cannot be guarded to comply with EN 294:1992 and may allow crushing injury.

A guard shall be provided to avoid accidental slipping of the hand into the tool. Its dimensions shall be at least 30 mm greater than the dimensions of the handgrip zone in all directions, and it shall be located between the handgrip zone and the tool (see figure 7).

The risk of injury shall be brought to the attention of the user in the instruction manual.

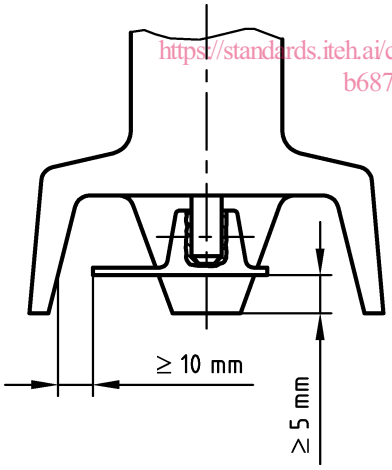
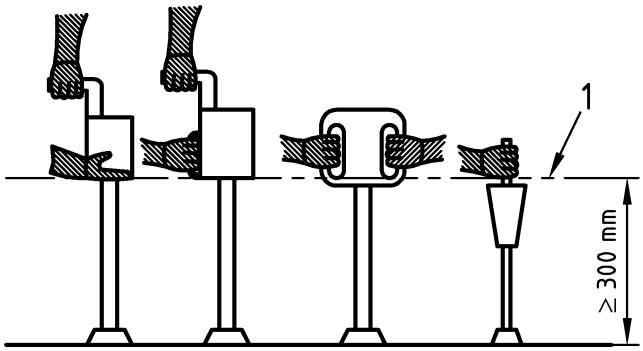


Figure 5 — Fixed guard on the drive side



Key
1 Lower limit of the grip zone

Figure 6 — Safety distance between the grip zone and the tool