SLOVENSKI STANDARD

SIST EN 1674:2015

01-november-2015

Nadomešča:

SIST EN 1674:2002+A1:2010

Stroji za predelavo hrane - Stroji za valjanje testa - Varnostne in higienske zahteve

Food processing machinery - Dough sheeters - Safety and hygiene requirements

Nahrungsmittelmaschinen - Teigausrollmaschinen - Sicherheits- und Hygieneanforderungen

Machines pour les produits alimentaires - Laminoirs à pâte - Prescriptions relative à la sécurité et l'hygiène

Ta slovenski standard je istoveten z: EN 1674:2015

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ICS:

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

SIST EN 1674:2015 **en,fr,de**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 1674

September 2015

ICS 67.260

Supersedes EN 1674:2000+A1:2009

English Version

Food processing machinery - Dough sheeters - Safety and hygiene requirements

Machines pour les produits alimentaires - Laminoirs à pâte - Prescriptions relative à la sécurité et à l'hygiène

Nahrungsmittelmaschinen - Teigausrollmaschinen - Sicherheits- und Hygieneanforderungen

This European Standard was approved by CEN on 1 August 2015.

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 CEN-CENELEC 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 CEN-CENELEC Management Centre has the same status as the official versions.

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

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Ref. No. EN 1674:2015 E

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European foreword

This document (EN 1674:2015) 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 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 March 2016, and conflicting national standards shall be withdrawn at the latest by March 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 1674:2000+A1:2009.

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.

Significant changes:

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The significant changes with respect to the previous edition EN 1674:2000+A1:2009 are listed below:

— normative references were updated;

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— list of significant hazards and dangers zones for mechanical hazards were specified more detailed;

— new sub-clauses: 5.3.5 (Unexpected start-up) and 5.4 (flour duster).

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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Introduction

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

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

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1 Scope

This European Standard specifies safety and hygiene requirements for the design and manufacture of dough sheeters, as described in Clause 3, used in the food industry and craft activities (bread-making, pastry-making, sweet industries, bakeries, confectioners, delicatessens, catering facilities, etc.) for reducing the thickness of a solid mass of dough or pastry by rolling it out.

This European Standard deals with all significant hazards, hazardous situations and events relevant to the transport, installation, adjustment, operation, cleaning, maintenance, dismantling, disassembling and scrapping of dough mixers, when they are used as intended and under the conditions of misuse which are reasonably foreseeable by the manufacturer (see Clause 4).

This European Standard deals with all significant hazards, hazardous situations and events relevant to dough sheeters, when they are used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer (see Clause 5).

Noise is not considered to be a significant hazard. This does not mean that the manufacturer is absolved from reducing noise and making a noise declaration. Therefore a noise test code is given in Annex B.

The following machines are excluded:

— experimental and testing machines under development by the manufacturer;

— dough sheeters where the dough is fed to the rollers by gravity (e.g. pizzabase dough sheeters);

— domestic appliances[1)].

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This European Standard is not applicable to dough sheeters which are manufactured before the date of its publication as EN.

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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 614-1:2006+A1:2009, *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 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 3743-1, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering methods for small movable sources in reverberant fields — Part 1: Comparison method for a hard-walled test room (ISO 3743-1)*

1) EN 60335-1 and EN 60335-2-64 are applicable

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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 12001, *Acoustics — Noise emitted by machinery and equipment — Rules for the drafting and presentation of a noise test code (ISO 12001)*

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 13857:2008, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857:2008)*

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EN ISO 14119:2013, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection (ISO 14119:2013)*

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3 Terms, definitions and description

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.

3.1.1
manual operation
the rollers and conveyor belts are driven by electric motor and the rollers' gap is adjusted by hand control

3.1.2
automatic operation
the machine is normally automatically controlled and the rollers' gap is adjusted by an electric motor

3.2 Description

A dough sheeter usually consists of a machine frame mounted on a mobile or fixed base or placed on a table or a support. The operation is carried out by passing the dough back and forth between the rollers whose distance apart is reduced progressively either by manual adjustment or automatically.

The frame supports the following components (see Figure 1):

1) the electric motor which drives the rollers;

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2) two superimposed rollers. The height of the lower one is fixed, the height of the upper one can be adjusted to obtain dough of the desired thickness. The two rollers rotate in opposite directions;

3) scraping devices to remove dough residues from the rollers;

4) a table or conveyor on one sides or both sides of the rollers;

5) the control system which may include an on/off switch, a device for reversing the direction of rotation, and a rollers' gap adjustment control;

6) an optional attachment to spread flour;

7) optional devices to cut dough and to roll dough. The cutting device is used at the end of the rolling phase to cut predetermined forms from the dough. The system is often composed of a roller fitted with circular knives for making bands, and of a roller fitted with imprints to make special forms such as croissants, chocolate filled pastry tartlets, etc. Rolling up the dough can be done by using a winding net to make special rolled forms such as croissant etc.

The capacity of the machine is defined by the width of the in-feed table (or conveyors).

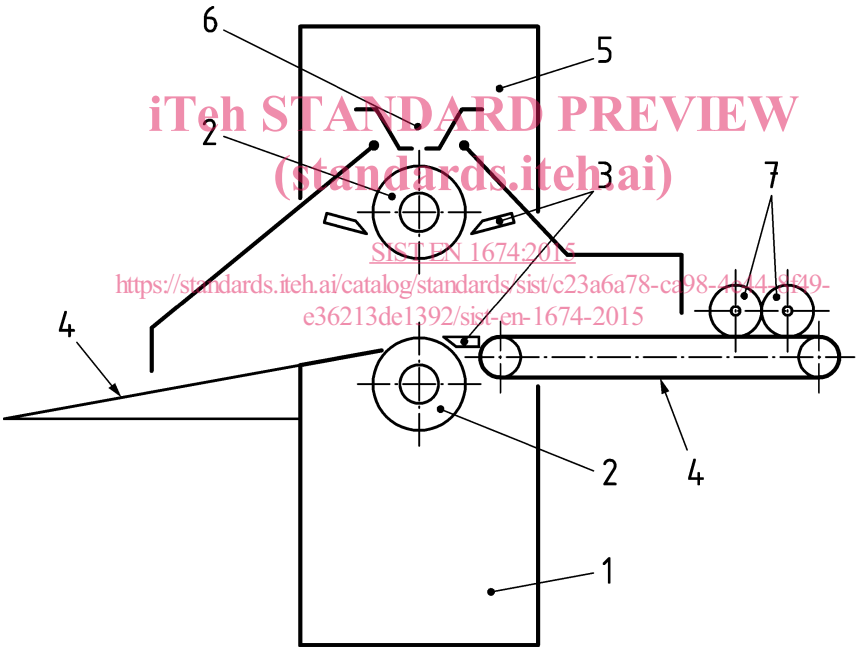

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Figure 1 — Main parts of a dough sheeter

4 List of significant hazards

This clause contains all the significant hazards, hazardous situations and events identified by risk assessment as significant for this type of machinery and which require action to eliminate or reduce the risk (see Table 1).

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Table 1 — List of significant hazards

Danger zones	Mechanical hazards (see Figure 2)	Clause/subclause in this European Standard
Zone 1: gap between the two rollers on the in-running side	— drawing-in and crushing	5.2.1.1
Zone 2: gap between the fixed support for the dough and the lower roller	— drawing-in and crushing	5.2.1.2
Zone 3: gap between the rollers and the side guards	— scraping	5.2.1.1
Zone 4: drive mechanism	— shearing — entanglement	5.2.1.3
Zone 5: input and output devices: gap between conveyor belts and their drive or guide rollers	— drawing-in and crushing	5.2.1.4
Zone 6 (optional): dough cutting/rolling devices, either power driven or driven by friction between the blades and the belt	— cutting	5.2.1.5
Zone 7 (optional): removable attachment to spread flour	— drawing-in and crushing	5.2.1.6
Zone 8: space between the roller and the scraping device	— drawing-in and crushing	5.2.1.7
	Loss of stability	5.2.2
	Electrical hazards	5.3
	Hazards generated by unexpected start-up	5.3.5
	Hazards generated by materials and substances (e.g. inhalation of dust)	5.4
	Hazards generated by neglecting hygienic design principles	5.5
	Hazards generated by neglecting ergonomic principles	5.6

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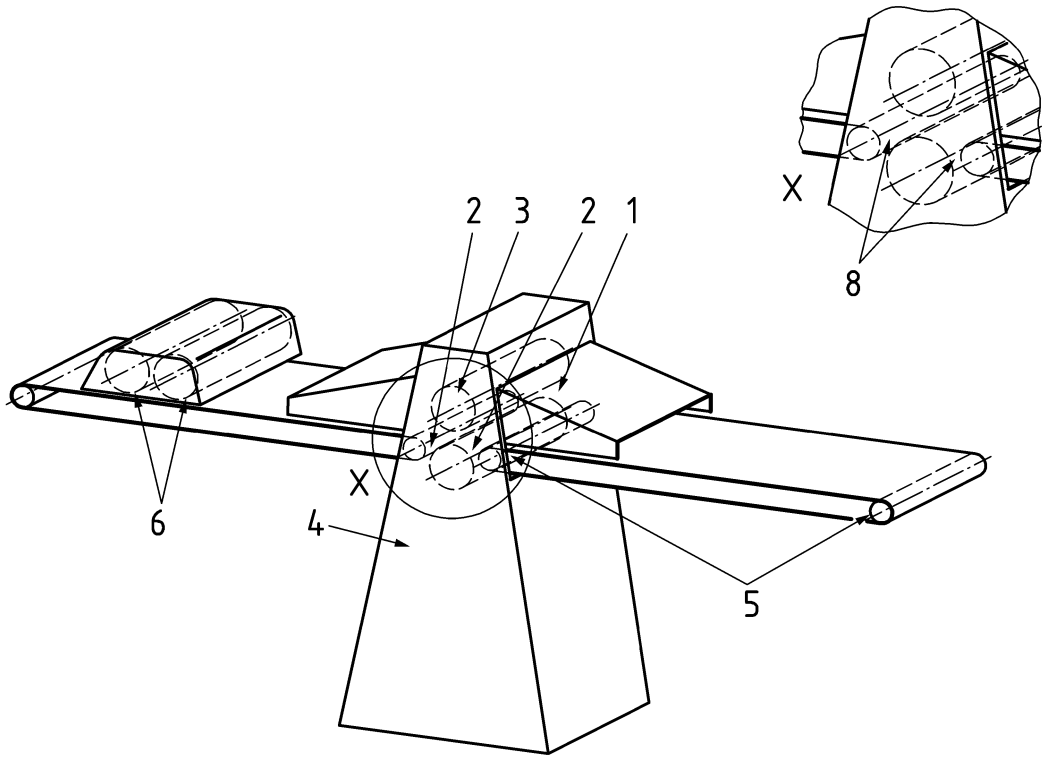

Key

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1 Zone 1: gap between the two rollers on the in-running side;

2 Zone 2: gap between the fixed support for the dough and the lower roller;

3 Zone 3: gap between the rollers and the side guards;

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4 Zone 4: drive mechanism;

5 Zone 5: input and output devices: gap between conveyor belts and their drive or guide rollers;

6 Zone 6: (optional) dough cutting/rolling devices, either power driven or driven by friction between the blades and the belt;

7 Zone 7: (optional) removable attachment to spread flour;

8 Zone 8: space between the roller and the scraping device.

NOTE to Zone 1 The outrunning side can become the in-running side due to the reversal function.

Figure 2 — Danger zones of a dough sheeter

5 Safety and hygiene requirements and/or protective measures

5.1 General

Machinery shall comply with the safety requirements and/or protective measures of this clause.

In addition, the machine shall be designed according to the principles of EN ISO 12100:2010 for relevant, but not significant hazards, which are not dealt with by this document.

Interlocking guards shall be at least interlocking without guard locking as defined in EN ISO 14119:2013, 4.1, and they shall comply with EN ISO 14119:2013, Clause 5 and 8.7.1.

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The safety-related parts of the control systems shall present at least a performance level “c” defined in accordance with EN ISO 13849-1:2008.

When fixed guards, 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.

In general no emergency stop is required for dough sheeters. In this case particular attention shall be given to the accessibility of the normal OFF-switch from the operator position.

5.2 Mechanical hazards

5.2.1 General

The danger zones, as described in Clause 4, shall be safeguarded according to 5.2.1.1 to 5.2.1.7.

5.2.1.1 Zone 1 and zone 3

Each in-running side of the rollers shall be protected with guards which are:

— fixed guards dimensioned according to EN ISO 13857:2008 (the frame can have the function of a fixed guard);

— or movable and interlocking guards, with the dimensions of Table 2 (see Figure 3a) and Figure 3b));

— or a combination of both types of guards.

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Table 2 — Dimensions of the guard

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Dimensions in millimetres

A max.	40	45	50	55	60	65	70	105
B min.	225	250	300	350	400	450	500	550
C min.	-	-	-	-	-	300	300	300
D min.	EN ISO 13857:2008, Table 4							

A distance between the upper part of the guard and the surface where the dough is lying, when the interlocking device is actuated;

B distance between the edge of the guard and the vertical plane through the axes of the rollers;

C distance between the end of guard and end of belt;

D distance between the lower edge of the guard and the surface where the dough is lying, when the interlocking device is activated.