

Toidutöötlemismasinad. Värskete ja täidetud makaronitoodete (tagliatelled, kannelloonid, ravioolid, tortelliinid, orecchiette'd ja gnocchi'd) töötlemismasinad. Ohutus- ja hügieeninõuded

Food processing machinery - Machines for processing fresh and filled pasta (tagliatelle, cannelloni, ravioli, tortellini, orecchiette and gnocchi) - Safety and hygiene requirements

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 15774:2010 sisaldab Euroopa standardi EN 15774:2010 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 31.12.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 10.11.2010.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 15774:2010 consists of the English text of the European standard EN 15774:2010.

This standard is ratified with the order of Estonian Centre for Standardisation dated 31.12.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 10.11.2010.

The standard is available from Estonian standardisation organisation.

ICS 67.260

Standardite reprodutseerimis- ja levitamiseõigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:
Aru 10 Tallinn 10317 Eesti; www.evs.ee; Telefon: 605 5050; E-post: info@evs.ee

ICS 67.260

English Version

Food processing machinery - Machines for processing fresh and filled pasta (tagliatelle, cannelloni, ravioli, tortellini, orecchiette and gnocchi) - Safety and hygiene requirements

Machines pour les produits alimentaires - Machines pour pâtes alimentaires (tagliatelle, cannelloni, ravioli, tortellini, orecchiette et gnocchi) - Prescriptions relatives à la sécurité et à l'hygiène

Nahrungsmittelmaschinen - Maschinen zur Herstellung von frischen und gefüllten Teigwaren (Tagliatelle, Cannelloni, Ravioli, Tortellini, Orecchiette und Gnocchi) - Sicherheits- und Hygieneanforderungen

This European Standard was approved by CEN on 2 October 2010.

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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....	7
Introduction	8
1 Scope	9
2 Normative references	10
3 Terms and definitions and description of machines	11
3.1 Terms and definitions	11
3.2 Description of machines for processing fresh and filled pasta.....	11
3.2.1 discontinuous manually loaded kneading machines with or without lifting and tilting devices (Figure 1)	11
3.2.2 continuous kneading machine (see Figure 2)	12
3.2.3 combination of dough kneading and dough sheet forming machine (see Figure 7)	17
3.2.4 forming machine processing one single dough sheet (see Figure 8).....	18
3.2.5 forming machine processing two dough sheets (see Figure 9)	19
3.2.6 dough sheet forming machine (see Figure 10).....	20
3.2.7 sizing roller machine (see Figure 11).....	21
3.2.8 dough transport shuttle machine (see Figure 12)	22
3.2.9 steam pasteurizer machine (see Figure 13)	23
3.2.10 cooler machine (see Figure 14)	24
3.2.11 dough sheet cutting machine (see Figure 15)	25
3.2.12 gnocchi machine (see Figure 16).....	26
3.2.13 typical shapes pasta machine (see Figure 17)	27
4 List of significant hazards	28
4.1 General.....	28
4.2 Mechanical hazards	28
4.2.1 General.....	28
4.2.2 Discontinuous manually loaded kneading machines with or without lifting and tilting devices.....	29
4.2.3 Continuous kneading machine	30
4.2.4 Combination of dough kneading and dough sheet forming machine	31
4.2.5 Forming machine processing one single dough sheet	32
4.2.6 Forming machine processing two dough sheets.....	33
4.2.7 Dough sheet forming machine.....	34
4.2.8 Sizing roller machine.....	35
4.2.9 Dough transport shuttle machine	36
4.2.10 Steam pasteurizer machine	37
4.2.11 Cooler machine	38
4.2.12 Dough sheet cutting machine	39
4.2.13 Gnocchi machine.....	40
4.2.14 Typical shapes pasta machine.....	41
4.3 Electrical hazards	41
4.4 Thermal hazards	42
4.5 Hazards generated by noise	42
4.6 Hazards resulting from the inhalation of harmful mists and dusts.....	42
4.7 Hazards due to slip, trip and fall	42
4.8 Hazards generated by neglecting ergonomic principles.....	42
4.9 Hazards generated by neglecting hygienic design principles.....	43
4.10 Hazards due to loss of stability or overturning	43
5 Safety and hygiene requirements and/or protective measures	43
5.1 General.....	43

5.2	Mechanical hazards.....	43
5.2.1	Elimination of crushing hazards by design.....	43
5.2.2	Moving transmission parts.....	43
5.2.3	Moving parts contributing to the work.....	43
5.2.4	Bowl lid.....	44
5.3	Electrical hazards.....	44
5.3.1	General.....	44
5.3.2	Safety requirements relating to electromagnetic phenomena.....	44
5.3.3	Power circuits.....	44
5.3.4	Earth faults.....	44
5.3.5	Emergency stop.....	44
5.3.6	Degrees of protection of external enclosures of electrical equipment (see EN 60529:1991).....	44
5.3.7	Supply disconnecting device.....	44
5.4	General aspects of controls.....	45
5.4.1	Hold to run control devices.....	45
5.4.2	Controls for maintenance or cleaning.....	45
5.4.3	Interlocking system of guards.....	45
5.4.4	Start warning.....	45
5.5	Thermal hazards.....	46
5.6	Noise reduction.....	46
5.7	Inhalation of harmful mists and dusts.....	46
5.8	Protective measures against slip, trip and fall.....	46
5.9	Ergonomic design principles.....	46
5.10	Hygiene requirements.....	47
5.10.1	General.....	47
5.10.2	Food area.....	47
6	Verification of safety and hygiene requirements and/or protective measures.....	54
7	Information for use.....	55
7.1	General.....	55
7.2	Operating instructions.....	56
7.3	Training of operators.....	57
7.4	Marking.....	57
7.5	Signals and warning devices.....	58
Annex A	(normative) Noise test code for machines for processing fresh and filled pasta (tagliatelle, cannelloni, ravioli, tortellini, orecchiette and gnocchi) (Grade 2).....	59
A.1	Definitions.....	59
A.2	Installation and mounting conditions.....	59
A.3	Operating conditions.....	59
A.4	Emission sound pressure level determination.....	59
A.5	Emission sound power level determination.....	60
A.6	Measurement uncertainties.....	60
A.7	Information to be recorded.....	60
A.8	Information to be reported.....	60
A.9	Declaration and verification of noise emission values.....	60
Annex B	(normative) Principles of design to ensure the cleanability of machinery.....	62
B.1	Definitions.....	62
B.2	Material of construction.....	62
B.2.1	Type of materials.....	62
B.2.2	Surface conditions.....	62
B.3	Design.....	63
B.3.1	Connections of internal surfaces.....	63
B.3.2	Surface assemblies and overlaps.....	65
B.3.3	Fasteners.....	67
B.3.4	Machines on the floor.....	68
B.3.5	Ventilation opening.....	70
B.3.6	Hinges.....	71
B.3.7	Control panel.....	71

Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC	72
Bibliography	73

Figures

Figure 1a — Discontinuous manually loaded kneading machines without lifting and tilting system	12
Figure 1b — Discontinuous manually loaded kneading machines with lifting and tilting system	12
Figure 2 — Continuous kneading machine.....	13
Figure 3a — Kneading bowl singles shaft	14
Figure 3b — Kneading bowl double shaft.....	14
Figure 4 — Premixing device.....	15
Figure 5 — Dosing device for flour, semolina or other milled product.....	16
Figure 6a — Device for dough stabilization vertical	17
Figure 6b — Device for dough stabilization by belt	17
Figure 7 — Combination of dough kneading and dough sheet forming machine	18
Figure 8 — Forming machine processing one single dough sheet	19
Figure 9 — Forming machine processing two dough sheets	20
Figure 10 — Dough sheet forming machine	21
Figure 11 — Sizing roller machine.....	22
Figure 12 — Dough transport shuttle machine	23
Figure 13 — Steam pasteurizer machine	24
Figure 14 — Cooler machine	25
Figure 15 — Dough sheet cutting machine	26
Figure 16 — Gnocchi machine	27
Figure 17 — Typical shapes pasta machine	28
Figure 18 — Danger zones of discontinuous manually loaded kneading machine with or without lifting and tilting devices	29
Figure 19 — Danger zones of continuous kneading machine.....	30
Figure 20 — Danger zones of combination of dough kneading and dough sheet forming machine.....	31
Figure 21 — Danger zones of forming machine processing one single dough sheet.....	32
Figure 22 — Danger zones of forming machine processing two dough sheets	33

Figure 23 — Danger zones of dough sheet forming machine.....	34
Figure 24 — Danger zones of sizing roller machine	35
Figure 25 — Danger zones of dough transport shuttle machine.....	36
Figure 26 — Danger zones of steam pasteurizer machine.....	37
Figure 27 — Danger zones of cooler machine.....	38
Figure 28 — Danger zones of dough sheet cutting machine	39
Figure 29 — Danger zones of gnocchi machine	40
Figure 30 — Danger zones of typical shapes pasta machine.....	41
Figure 31 — Discontinuous manually loaded kneading machine, without or with lifting and tilting devices	47
Figure 32 — Continuous kneading machine	48
Figure 33 — Combination of dough kneading and dough sheet forming machine	48
Figure 34 — Forming machine processing one single dough sheet.....	49
Figure 35 — Forming machine processing two dough sheets	50
Figure 36 — Dough sheet forming machine.....	50
Figure 37 — Sizing roller machine	51
Figure 38 — Dough transport shuttle machine.....	51
Figure 39 — Steam pasteurizer machine.....	52
Figure 40 — Cooler machine.....	52
Figure 41 — Dough Sheet cutting machine	53
Figure 42 — Gnocchi machine	53
Figure 43 — Typical shape pasta machine	54
Figure B.1	64
Figure B.2	64
Figure B.3	64
Figure B.4	65
Figure B.5	65
Figure B.6	66
Figure B.7	66
Figure B.8	67

Figure B.9 67

Figure B.10 68

Figure B.11 69

Figure B.12 69

Figure B.13 69

Figure B.14 70

Figure B.15 70

Figure B.16 71

Tables

Table 1 55

Table B.1 63

Foreword

This document (EN 15774:2010) 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 May 2011, and conflicting national standards shall be withdrawn at the latest by May 2011.

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 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(s).

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

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Introduction

This European Standard is a type C standard as defined in the introduction of EN ISO 12100:2003.

The machinery concerned and the extent to which hazards, hazardous situations and hazardous 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 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.

1 Scope

This European Standard applies to machines for the processing of fresh and filled pasta, by mixing, kneading, dough sheet forming, pasta forming and pasteurizing, as described in Clause 3.

It applies to stationary and movable machines (not intended to be moved during operation), with a nominal capacity of not less than 25 kg/h.

This European Standard deals with all significant hazards, hazardous situations, and events when the machines falling within the scope of this standard are used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer (see Clause 4). It deals with the hazards during the following phases of the machines' lifetime: transport, assembly and installation, commissioning, setting and adjusting, operation, cleaning, fault finding, maintenance, de-commissioning, dismantling, disabling and scrapping.

This European Standard applies to the following groups of machines:

- discontinuous manually loaded kneading machines with or without lifting and tilting devices;
- continuous kneading machine;
- combination of dough kneading and dough sheet forming machine;
- forming machine processing one single dough sheet;
- forming machine processing two dough sheets;
- dough sheet forming machine;
- sizing roller machine;
- dough transport shuttle machine;
- steam pasteurizer machine;
- cooler machine;
- dough sheet cutting machine;
- gnocchi machine;
- typical shapes pasta machine.

This European Standard is not applicable to the following machines:

- household machines;
- auxiliary equipment (not changing the characteristics of product): conveying systems not part of the machinery, weighting and bagging equipment, lifting and tilting machinery (dealt with in EN 13288).

This European Standard is not applicable to pasta processing machines, which are manufactured before the date of its publication as EN.

2 Normative references

The following referenced documents are indispensable for the application 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 349:1993+A1:2008, *Safety of machinery — Minimum gaps to avoid crushing of parts of the human body*

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

EN 626-1:1994+A1:2008, *Safety of machinery — Reduction of risks to health from hazardous substances emitted by machinery — Part 1: Principles and specifications for machinery manufacturers*

EN 842:1996+A1:2008, *Safety of machinery — Visual danger signals — General requirements, design and testing*

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

EN 1088:1995+A2:2008, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection*

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 61310-1:2008, *Safety of machinery — Indication, marking and actuation — Part 1: Requirements for visual, acoustic and tactile signals (IEC 61310-1:2007)*

EN ISO 3744:2009, *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 4871:2009, *Acoustics — Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)*

EN ISO 7731:2008, *Ergonomics — Danger signals for public and work areas — Auditory danger signals (ISO 7731:2003)*

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 12001:2009, *Acoustics — Noise emitted by machinery and equipment — Rules for the drafting and presentation of a noise test code (ISO 12001:1996)*

EN ISO 12100-1:2003, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology (ISO 12100-1:2003)*

EN ISO 12100-2:2003, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles (ISO 12100-2:2003)*

EN ISO 13732-1:2008, *Ergonomics of the thermal environment — Methods for the assessment of human responses to contact with surfaces — Part 1: Hot surfaces (ISO 13732-1:2006)*

EN ISO 13732-3:2008, *Ergonomics of the thermal environment — Methods for the assessment of human responses to contact with surfaces — Part 3: Cold surfaces (ISO 13732-3:2005)*

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 13850:2008, *Safety of machinery — Emergency stop — Principles for design (ISO 13850:2006)*

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 14122-1:2001, *Safety of machinery — Permanent means of access to machinery — Part 1: Choice of fixed means of access between two levels (ISO 14122-1:2001)*

EN ISO 14122-2:2001, *Safety of machinery — Permanent means of access to machinery — Part 2: Working platforms and walkways (ISO 14122-2:2001)*

EN ISO 14122-3:2001, *Safety of machinery — Permanent means of access to machinery — Part 3: Stairs, stepladders and guard-rails (ISO 14122-3:2001)*

EN ISO 14122-4:2004, *Safety of machinery — Permanent means of access to machinery — Part 4: Fixed ladders (ISO 14122-4:2004)*

3 Terms and definitions and description of machines

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100-1:2003 and the following apply.

3.1.1

bowl lid

movable guard used to close bowl containing kneading tools

3.2 Description of machines for processing fresh and filled pasta

3.2.1 discontinuous manually loaded kneading machines with or without lifting and tilting devices (Figure 1)

Machine which is manually loaded with the quantity of flour, semolina or other milled product, water, and any other ingredient (i.e. eggs, spinach, tomatoes, etc.) necessary to prepare the (dough) pasta by kneading.

The principal components are bowl with bowl lid and kneading device/kneading tool.

Optional assemblies: lifting and tilting system