

**Kodused gaaskuumutusega toiduvalmistusseadmed.
Osa 1-4: Ohutus. Ühe või mitme automaatjuhitava
põletiga seadmed**

**Domestic cooking appliances burning gas - Safety - Part
1-4: Appliances having one or more burners with an
automatic burner control system**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 30-1-4:2012 sisaldab Euroopa standardi EN 30-1-4:2012 ingliskeelset teksti.	This Estonian standard EVS-EN 30-1-4:2012 consists of the English text of the European standard EN 30-1-4:2012.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 23.05.2012.	Date of Availability of the European standard is 23.05.2012.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 97.040.20

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

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

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

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:
Aru 10, 10317 Tallinn, Estonia; www.evs.ee; phone 605 5050; e-mail info@evs.ee

English Version

**Domestic cooking appliances burning gas - Safety - Part 1-4:
Appliances having one or more burners with an automatic
burner control system**

Appareils de cuisson domestiques utilisant les
combustibles gazeux - Sécurité - Partie 1-4: Appareils
comportant un ou plusieurs brûleurs avec système
automatique de commande des brûleurs

Haushalt-Kochgeräte für gasförmige Brennstoffe -
Sicherheit - Teil 1-4: Geräte mit einem oder mehreren
Brenner(n) mit Feuerungsautomat

This European Standard was approved by CEN on 7 April 2012.

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, Turkey 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.....	5
1 Scope	7
2 Normative references	8
3 Terms and definitions	9
3.1 Definitions concerning parts of the appliance	9
3.2 Additional definitions concerning appliances having burners with an automatic burner control system	9
3.2.1 Definitions concerning the appliance and its components	9
3.2.2 Definitions concerning adjusting, control and safety devices	10
3.2.3 Definitions concerning the operation of the appliance	12
4 Classification.....	14
5 Constructional requirements.....	15
5.1 General requirements.....	15
5.1.1 General.....	15
5.1.2 Conversion to different gases	15
5.1.3 Materials	15
5.2 Special requirements	16
5.2.1 General.....	16
5.2.2 Taps.....	16
5.2.3 Control handles.....	16
5.2.4 Injectors and adjusters	16
5.2.5 Oven thermostats	16
5.2.6 Ignition systems.....	16
5.2.7 Flame supervision devices	17
5.2.8 Regulators	17
5.2.9 Hotplates.....	17
Covered burners and griddles.....	18
5.2.10 Accumulation of un-burnt gas in the appliance	18
5.3 Additional requirements for appliances having one or more burners with an automatic burner control system	18
5.3.1 Indirect manually operated burner controls	18
5.3.2 Indirect manually operated control handles and touch control pads	20
5.3.3 Verification of the state of operation	20
5.3.4 Thermostats and gas energy regulators	21
5.3.5 Combustion products outlets (enclosed covered hotplate burners)	21
5.3.6 Multifunctional controls	21
5.3.7 Automatic shut-off valves	21
5.3.8 Accumulation of un-burnt gas in the appliance	23
5.3.9 Fans for the provision of combustion air and/or for the evacuation of products of combustion.....	23
5.4 Additional requirements for burners having automatic burner control systems	24
5.4.1 General.....	24
5.4.2 Burners without a fan for the supply of combustion air and/or for the evacuation of the products of combustion.....	24
5.4.3 Burners with a fan for the supply of combustion air and/or for the evacuation of the products of combustion.....	27
5.5 Additional requirements for appliances having one or more burners that are capable of remote operation.....	31
5.5.1 Application	31

5.5.2	General	31
5.5.3	Remote operation (type 2)	32
5.5.4	Remote operation (type 1)	32
5.6	Additional requirements for appliances incorporating one or more hotplate or grill burners that enable the user to program the end of a cooking cycle	33
5.6.1	Application	33
5.6.2	General	33
6	Performance requirements	34
6.1	General requirements	34
6.1.1	General	34
6.1.2	Obtaining the input rates	34
6.1.3	Flame supervision devices	34
6.1.4	Safety of operation	34
6.2	Special requirements for hotplates	35
6.2.1	General	35
6.2.2	Ignition, cross-lighting and flame stability	35
6.2.3	Combustion	35
6.3	Special requirements for ovens and grills	35
6.3.1	General	35
6.3.2	Ignition, cross-lighting and flame stability	35
6.3.3	Combustion	35
6.4	Additional requirements for appliances having burners with automatic burner control systems	36
6.4.1	Obtaining the input rates	36
6.4.2	Safety in the event of failure of thermostats and gas energy regulators	37
6.5	Additional requirements for hotplate burners having automatic burner control systems	37
6.5.1	Ignition, cross-lighting and flame stability	37
6.5.2	Combustion	39
6.5.3	Air proving devices (enclosed covered hotplate burners with a fan for the supply of combustion air and/or for the evacuation of products of combustion)	39
6.6	Additional requirements for oven and grill burners having automatic burner control systems	39
6.6.1	Ignition, cross-lighting and flame stability	39
6.6.2	Combustion	41
6.6.3	Air proving devices (oven and/or grill burners with a fan for the supply of combustion air and/or for the evacuation of products of combustion)	42
7	Test methods	42
7.1	General test condition	42
7.1.1	Introduction	42
7.1.2	Reference and test gases	42
7.1.3	Test pressures	42
7.1.4	Test procedures	42
7.1.5	Pans and oven and grill accessories	44
7.1.6	Temperature of the oven and grill	44
7.1.7	Appliances having a mains electrical supply	44
7.2	Verification of the constructional requirements	44
7.2.1	General	44
7.2.2	Strength	45
7.2.3	Strength, stability	45
7.2.4	Accumulation of un-burnt gas in the appliance	45
7.2.5	Fragmentation test for principal components made from toughened soda-lime glass	45
7.2.6	Appliances with a glass lid having a device for shutting off the gas to the hotplate burners	45
7.2.7	Food hygiene in time controlled ovens	45
7.3	Verification of operational requirements	45
7.3.1	General requirements	45
7.3.2	Specific tests for hotplates	48
7.3.3	Specific tests for ovens and grills	49

7.4	Verification of the constructional requirements specific to parts of the appliance having burners with an automatic burner control system	50
7.4.1	Accumulation of un-burnt gas in the appliance	50
7.4.2	Manually operated devices (see 5.4.1)	52
7.4.3	Safety times	52
7.4.4	Appliances incorporating a hotplate having touch controls	52
7.5	Verification of the operational requirements specific to parts of the appliance having burners with an automatic burner control system	53
7.5.1	General tests	53
7.5.2	Specific tests for hotplates	57
7.5.3	Specific tests for ovens and grills	68
8	Marking and instructions	77
8.1	Appliance marking (including any type 2 hand-operated control)	77
8.2	Marking of the packaging	77
8.3	Instructions	77
8.3.1	General	77
8.3.2	Technical instructions	77
8.3.3	Instructions for use and maintenance	78
8.3.4	Instructions for conversion to other gases	78
Annex A	(informative) National situations	79
A.1	General	79
A.2	Marketing in different countries of the categories listed in the text of the standard	79
A.3	Supply pressures for the appliance (see 7.1.3)	81
A.4	Particular categories marketed nationally or locally	83
A.4.1	National distribution	83
A.4.2	Categories	84
A.4.3	Gas rate adjuster	85
A.4.4	Permitted operations for changing gas	86
A.5	Test gases corresponding to local situations	86
A.6	Particular conditions	87
A.7	Connection requirements in force in the various countries	88
Annex B	(informative) Guidelines for extension to other categories	89
Annex C	(normative) Characteristics of the pans required	90
Annex D	(normative) Surface temperature probe	91
Annex E	(normative) Use of the symbol on the appliance and packaging	92
Annex F	(normative) Symbol "Do not shut lid when burner alight"	93
Annex G	(normative) Fault analysis procedure for assessing the safety of the appliance in the event of failure of any single automatic shut-off valve in the burner control system	94
G.1	Explanatory notes	94
G.2	Procedure	96
G.3	Explanation of decisions taken during assessment of fault	97
Annex H	(normative) Fragmentation requirement for toughened soda-lime glass	98
H.1	Requirement	98
H.2	Test method	98
Annex ZA	(informative) Clauses of this European Standard addressing essential requirements or other provisions of EU Directives	99
Bibliography		102

Foreword

This document (EN 30-1-4:2012) has been prepared by Technical Committee CEN/TC 49 “Gas cooking appliances”, the secretariat of which is held by UNI.

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 2012, and conflicting national standards shall be withdrawn at the latest by November 2012.

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 30-1-4:2002.

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.

It is intended to use this European Standard with EN 30-1-1:2008+A2:2010, on which the requirements and methods of test for appliances having one or more burners with an automatic burner control system are based. In particular, this European Standard identifies the requirements and methods of test specific to these appliances, which are in addition to, or replace, those given in EN 30-1-1:2008+A2:2010.

This present part is intended to be used together with any other part of EN 30-1-x related to “Safety”, whenever the appliances covered by this other part includes a burner with an automatic burner control system.

Requirements relating to ‘Rational use of energy’ are given in other appropriate parts of this standard, EN 30-2-x.

Matters relating to quality assurance systems, production testing and certificates of conformity, including those for auxiliary devices, are not dealt with in this European Standard.

NOTE For countries requesting special categories (specified in EN 437:2003+A1:2009), the absence of specific information concerning A.3.3 and A.3.4 implies that the general requirements (see 5.2.4 and 5.1.1) also apply for particular categories.

Other European Standards covering domestic cooking appliances burning gas are as follows:

- EN 30-1-1, *Domestic cooking appliances burning gas — Part 1-1: Safety — General*;
- EN 30-1-2, *Domestic cooking appliances burning gas — Part 1-2: Safety — Appliances having forced-convection ovens and/or grills*;
- EN 30-1-3, *Domestic cooking appliances burning gas — Part 1-3: Safety — Appliances having a glass ceramic hotplate*;
- EN 30-2-1, *Domestic cooking appliances burning gas — Part 2-1: Rational use of energy — General*;
- EN 30-2-2, *Domestic cooking appliances burning gas — Part 2-2: Rational use of energy — Appliances having forced-convection ovens and/or grills*.

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, Turkey and the United Kingdom.

This document is a preview generated by EVS

1 Scope

This European Standard specifies the construction and performance characteristics as well as the requirements and methods of test for the safety and marking of domestic cooking appliances, capable of using the combustible gases defined in EN 30-1-1:2008+A2:2010, that have one or more burners with an automatic burner control system, referred to in the text as "appliances".

This European Standard includes specific requirements and methods of test that are applicable to burners having an automatic burner control system, whether or not the appliance is equipped with a fan for the supply of combustion air to, and/or the evacuation of the products of combustion from the burner concerned. These specific requirements and methods of test are only applicable when the burner has an automatic burner control system and do not apply to burners having automatic ignition that fall within the scope of EN 30-1-1:2008+A2:2010.

This European Standard is intended to be used in conjunction with EN 30-1-1:2008+A2:2010 and, where appropriate, other parts of EN 30-1 covering appliances having:

- forced-convection ovens and/or grills;
- a glass ceramic hotplate.

It does not cover all of the safety requirements and methods of test that are specific to forced-convection ovens and/or grills and glass ceramic hotplates.

Unless specifically excluded hereafter, this standard applies to these appliances or their component parts, whether or not the component parts are independent or incorporated into a single appliance, even if the other heating components of the appliance use electrical energy (e.g. combined gas-electric cookers).

This European Standard includes requirements covering the electrical safety of equipment incorporated in the appliance that is associated with the use of gas. It does not include requirements covering the electrical safety of electrically heated component parts of their associated equipment¹⁾.

This European Standard does not apply to:

- outdoor appliances;
- appliances connected to a combustion products evacuation duct;
- appliances having a pyrolytic gas oven;
- appliances having automatic burner control systems that:
 - have a second safety time (see EN 298:2003), or
 - control one or more burners that incorporate a separate ignition burner;
- appliances having an uncovered burner or a non-enclosed covered burner (see 3.1.1) that utilises a fan for the supply of its combustion air;
- appliances having enclosed covered burners that are not equipped with an automatic burner control system;
- appliances having one or more burners that are capable of remote operation (type1), unless the burner(s) concerned are:

¹⁾ Refer to the electrical safety rules.

- oven burners equipped with an automatic burner control system, or
- oven burners of time-controlled ovens that are designed for a delayed start without the user being present;
- appliances having one or more burners that are capable of remote operation (type 2), unless the burner(s) concerned are:
 - oven, grill or hotplate burners equipped with automatic burner control systems, or
 - oven burners of time-controlled ovens that are designed for a delayed start without the user being present;
- appliances supplied at pressures greater than those defined in 7.1.3;
- appliances equipped with air-gas ratio controls;
- appliances incorporating one or more hotplate or grill burners that enable the user to program the delayed start of a cooking cycle.

This European Standard does not cover the requirements relating to automatic on-off cycling multi-ring hotplate burners for which specific requirements are under consideration.

This European Standard does not cover the requirements relating to third family gas cylinders, their regulators and their connection.

This European Standard only covers type testing.

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 30-1-1:2008+A2:2010, *Domestic cooking appliances burning gas — Part 1-1: Safety — General*

EN 30-1-2:2012, *Domestic cooking appliances burning gas — Safety — Part 1-2 — Appliances having forced-convection ovens and/or grills*

EN 30-1-3:2003+A1:2006, *Domestic cooking appliances burning gas — Part 1-3: Safety — Appliances having a glass ceramic hotplate*

EN 88-1:2011, *Pressure regulators and associated safety devices for gas appliances — Part 1: Pressure regulators for inlet pressures up to and including 50 kPa*

EN 126, *Multifunctional controls for gas burning appliances*

EN 161, *Automatic shut-off valves for gas burners and gas appliances*

EN 257, *Mechanical thermostats for gas-burning appliances*

EN 298:2003, *Automatic gas burner control systems for gas burners and gas burning appliances with or without fans*

EN 60335-2-102:2006, *Household and similar electrical appliances — Safety — Part 2-102: Particular requirements for gas, oil and solid-fuel burning appliances having electrical connections (IEC 60335-2-102:2004/A1:2008, modified)*

EN 60335-2-102:2006 + A1:2010, *Household and similar electrical appliances — Safety — Part 2-102: Particular requirements for gas, oil and solid-fuel burning appliances having electrical connections (IEC 60335-2-102:2004, modified)*

EN 60730-2-9, *Automatic electrical controls for household and similar use — Part 2-9: Particular requirements for temperature-sensing controls (IEC 60730-2-9, modified)*

3 Terms and definitions

For the purposes of this document, unless specifically modified as described in 3.1, hereafter the definitions of EN 30-1-1:2008+A2:2010, Clause 3 apply, as well as the additional definitions given in 3.2.

3.1 Definitions concerning parts of the appliance

3.1.1

manually operated burner control

device to isolate the gas supply to a burner and possibly to adjust its thermal function during use.

Note 1 to entry: A manually operated burner control may be:

- **direct-acting:** in which case the device is mechanical in operation (e.g. a tap or cock) and the gas flow is controlled directly by manipulation of a control handle as defined in EN 30-1-1:2008+A2:2010, 3.4.3.1;
- **indirect:** in which case the opening and closing of the gas supply to the burner is achieved indirectly by means of one or more automatic shut off valves. This control may incorporate means of adjusting the thermal function of the burner. For example:
 - by adjusting the gas flow (e.g. high-low thermostat);
 - by on-off cycling (e.g. on-off thermostat, gas energy regulator).

3.1.2

remote operation (type 1)

operation by means of a control intended to be actuated out of sight of the appliance

Note 1 to entry: For example, by telecommunications or bus systems.

3.1.3

remote operation (type 2)

operation by means of a separate hand-held control (e.g. an infrared device) designed for use only when the appliance is directly visible to an operator of the control who is present within the same room as the appliance

3.2 Additional definitions concerning appliances having burners with an automatic burner control system

3.2.1 Definitions concerning the appliance and its components

3.2.1.1

combustion circuit

assembly comprising the air supply circuit, the combustion chamber and the products of combustion circuit up to the outlet of the appliance