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Domestic cooking appliances burning gas - Part 1-1: Safety - General

Haushalt-Kochgeräte für gasförmige Brennstoffe - Teil 1-1: Sicherheit - Allgemeines

Appareils de cuisson domestiques utilisant les combustibles gazeux - Partie 1-1 :
Sécurité - Généralités

Ta slovenski standard je istoveten z: EN 30-1-1:2008

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Domestic cooking appliances burning gas - Part 1-1: Safety - General

Appareils de cuisson domestiques utilisant les
combustibles gazeux - Partie 1-1: Sécurité - Généralités

Haushalt-Kochgeräte für gasförmige Brennstoffe - Teil 1-1:
Sicherheit - Allgemeines

This European Standard was approved by CEN on 11 July 2008.

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Foreword

This document (EN 30-1-1:2008) 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of an identical text or by endorsement, at the latest by March 2009, and conflicting national standards shall be withdrawn at the latest by March 2010.

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 30-1-1:1998.

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.

EN 30 *Domestic cooking appliances burning gas* consists of the following parts:

- *Part 1-1: Safety — General;*
- *Part 1-2: Safety — Appliances having forced-convection ovens and/or grills*
- *Part 1-3: Safety — Appliances having a glass ceramic hotplate;*
- *Part 1-4: Safety — Appliances having one or more burners with an automatic burner control system;*
- *Part 2-1: Rational use of energy — General;*
- *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, 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 the United Kingdom.

EN 30-1-1:2008 (E)**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 freestanding and built-in domestic cooking appliances burning the combustible gases given in 4.1 according to the categories specified in 4.2, referred to in the text as "appliances".

This European Standard covers the following types of domestic cooking appliances, as defined in Clause 3, and belonging to the classes defined in 4.3 (see Table 1):

- independent freestanding hotplates;
- independent built-in hotplates;
- independent hotplates and grills;
- table cookers;
- freestanding ovens;
- built-in ovens;
- freestanding or built-in grills;
- griddles;
- freestanding cookers;
- built-in cookers.

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Unless specifically excluded hereafter, this European 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 or their associated equipment¹⁾.

This European Standard does not apply to:

- a) outdoor appliances;
- b) appliances connected to a combustion products evacuation duct;
- c) appliances having a pyrolytic gas oven;
- d) appliances having covered burners which are not in conformity with the constructional requirements of 5.2.8.2.2;
- e) appliances incorporating flame supervision devices and having an automatic ignition device for which the duration of the ignition attempt is limited by design;
- f) appliances equipped with a burner that is periodically ignited and extinguished under the control of an automatic on/off device;

¹⁾ Refer to the electrical safety rules.

- g) appliances equipped with an oven and/or with a grill having a fan:
- 1) either for the supply of combustion air or for the evacuation of the products of combustion;
 - 2) or for the circulation of the products of combustion within the compartments;
- h) appliances supplied at pressures greater than those defined in 7.1.2;
- i) appliances having one or more burners that are capable of remote operation (type 1 or type 2), unless the burner(s) concerned are thermostatically controlled oven burners of time-controlled ovens that are designed for a delayed start without the user being present.

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.

Table 1 — Three-language table of the names of the different types of domestic cooking appliances

- Tables de cuisson isolées	- Freistehende Kochteile	- Independent hotplates - freestanding
- Tables de cuisson à encastrer	- Eingebaute Kochteile	- Independent hotplates - built-in
- Tables-grilloirs	- Kochteile mit Strahlungsgrilleinrichtung	- Independent hotplates and grill
- Réchauds-fours	- Tischherde	- Table cookers
- Fours isolés	- Freistehende Backöfen	- Ovens - freestanding
- Fours à encastrer	- Einbaubacköfen	- Ovens - built-in
- Grilloirs par rayonnement isolés	- Freistehende Strahlungsgrilleinrichtungen	- Grills - freestanding
- Grilloirs par rayonnement à encastrer	- Eingebaute Strahlungsgrilleinrichtungen	- Grills - built-in
- Grilloirs par contact	- Kontaktgrilleinrichtungen	- Griddles
- Cuisinières isolées	- Freistehende Herde	- Cookers - freestanding
- Cuisinières encastrées	- Eingebaute Herde	- Cookers - built-in

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2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies, including any amendments. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 88-1:2007, *Pressure regulators and associated safety devices for gas appliances — Part 1: Pressure regulators for inlet pressures up to and including 500 mbar*

EN 125:1991, *Flame supervision devices for gas-burning appliances — Thermoelectric flame supervision devices*

EN 126:2004, *Multifunctional controls for gas burning appliances*

EN 257:1992, *Mechanical thermostats for gas-burning appliances*

EN 437:2003, *Test gases — Test pressures — Appliance categories*

EN 549:1994, *Rubber materials for seals and diaphragms for gas appliances and gas equipment*

EN 751-1:1996, *Sealing materials for metallic threaded joints in contact with 1st, 2nd and 3rd family gases and hot water — Part 1: Anaerobic jointing compounds*

EN 751-2:1996, *Sealing materials for metallic threaded joints in contact with 1st, 2nd and 3rd family gases and hot water — Part 2: Non-hardening jointing compounds*

EN 1106:2001, *Manually operated taps for gas burning appliances*

EN 10226-1:2004, *Pipe threads where pressure tight joints are made on the threads — Part 1: Taper external threads and parallel internal threads — Dimensions, tolerances and designation*

EN 10226-2:2005, *Pipe threads where pressure tight joints are made on the threads — Part 2: Taper external threads and taper internal threads — Dimensions, tolerances and designation*

EN 60068-2-75:1997, *Environmental testing — Part 2: Tests — Test Eh: Hammer tests (IEC 60068-2-75:1997)*

EN 60335-1:2002, *Household and similar electrical appliances — Safety — Part 1: General requirements (IEC 60335-1:2001, modified)*

EN 60335-2-6:2003, *Household and similar electrical appliances — Safety — Part 2-6: Particular requirements for stationary cooking ranges, hobs, ovens and similar appliances (IEC 60335-2-6:2002, modified)*

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, modified)*

EN 60584-1:1995, *Thermocouples — Part 1: Reference tables (IEC 60584-1:1995)*

EN 60730-2-1:1997, *Automatic electrical controls for household and similar use — Part 2: Particular requirements for electrical controls for electrical household appliances (IEC 60730-2-1:1989, modified)*

EN ISO 228-1:2003, *Pipe threads where pressure-tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation (ISO 228-1:2000)*

EN ISO 3166-1:2006, *Codes for the representation of names of countries and their subdivisions — Part 1: Country codes (ISO 3166-1:2006)*

ISO 5732:1978, *Kitchen equipment — Sizes of openings for built-in appliances*

ISO 15717:1998, *Kitchen equipment — Safety requirements and test methods for kitchen cabinets and work tops*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1 General terms and definitions

3.1.1

conversion

operation carried out by a specialist on an appliance at the time of a change of gas

3.1.2

removable

can be removed without the aid of a tool

3.1.3

reference conditions

15 °C, 1 013,25 mbar

3.1.4

mechanically fastened

can only be removed with the aid of a tool

3.1.5

normal maintenance

maintenance carried out by a specialist not including any replacement of parts

3.1.6

soft soldering

soldering for which the lowest temperature of the melting range, after application, is less than 450 °C

3.1.7

direct country of destination

country for which the appliance has been certified and which is specified by the manufacturer as the intended country of destination, such that, at the time of putting the appliance on the market and/or installation, the appliance needs to be capable of operating, without adjustment or modification, with one of the gases distributed in the country concerned, at the appropriate supply pressure

NOTE More than one country can be specified if the appliance, in its current state of adjustment, can be used in each of these countries.

3.1.8

indirect country of destination

country for which the appliance has been certified, but for which, in its present state of adjustment, it is not suitable; subsequent modification or adjustment is essential in order that it can be utilized safely and correctly in this country

3.2 Terms and definitions relating to the appliance

3.2.1

appliance incorporating a cylinder

appliance functioning in particular with third family gases which includes a compartment for the cylinder

EN 30-1-1:2008 (E)**3.2.2****freestanding appliance**

appliance not normally having direct contact with adjacent furniture or walls

3.2.3**appliance for building-in between two furniture units**

appliance which can have its side panels in direct contact with adjacent furniture units

NOTE When installed, the appliance may only be in contact with a single furniture unit.

3.2.4**appliance for building into a furniture unit**

appliance intended to be installed in a kitchen cabinet or unit or in a housing located in a wall or under similar conditions

NOTE For this reason, the appliance may not necessarily have a casing on all sides.

3.2.5**domestic cooking appliance**

appliance to be used by private individuals in a domestic dwelling

NOTE This is indicated in the instructions for use and maintenance as well as in the technical instructions.

3.2.6**cooker**

cooking appliance comprising:

— a hotplate;

— one or more ovens with or without a thermostat, having possibly a grill;

— possibly a grill

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3.2.7**table cooker**

cooking appliance intended to rest on a raised support or stand comprising:

— a hotplate;

— an oven;

— possibly a grill

3.2.8**independent hotplate**

cooking appliance consisting only of a hotplate

3.2.9**independent hotplate and grill**

cooking appliance consisting of hotplate and a grill

3.3 Terms and definitions relating to gases and pressures**3.3.1 Terms and definitions relating to gases****3.3.1.1****test gases**

gases intended for the verification of the operational characteristics of appliances using combustible gases; they consist of reference gases and limit gases

NOTE Table 7 gives the characteristics of reference gases and limit gases.

3.3.1.2

reference gases

test gases with which appliances operate under nominal conditions when they are supplied at the corresponding normal pressure

3.3.1.3

limit gases

test gases representative of the extreme variations in characteristics of the gases for which the appliances have been designed

3.3.1.4

relative density

d

ratio of the masses of equal volumes of dry gas and dry air under the same conditions of temperature and pressure: 15 °C or 0 °C and 1 013,25 mbar

3.3.1.5

calorific value

quantity of heat produced by complete combustion at a constant pressure of 1 013,25 mbar, of a unit volume or mass of gas, the constituents of the combustible mixture being taken at reference

A distinction is made between:

- the gross calorific value H_s : the water produced by combustion is assumed to be condensed;
- the net calorific value H_i : the water produced by combustion is assumed to be in the vapour state.

NOTE 1 The calorific value is expressed:

- either in megajoules per cubic metre (MJ/m³) of dry gas under the reference conditions;
- or in megajoules per kilogram (MJ/kg) of dry gas.

NOTE 2 In this European Standard only the gross calorific value is used

3.3.1.6

Wobbe index

gross Wobbe index W_s ; net Wobbe index W_i

ratio of the calorific value of a gas per unit volume and the square root of its relative density under the same reference conditions. The Wobbe index is said to be gross or net according to whether the calorific value used is the gross or net calorific value

NOTE The Wobbe indices are expressed -

- either in megajoules per cubic metre (MJ/m³) of dry gas under the reference conditions;
- or in megajoules per kilogram (MJ/kg) of dry gas.

3.3.1.7

theoretical air

volume of air necessary for the stoichiometric combustion of a unit volume of gas

EN 30-1-1:2008 (E)**3.3.2 Terms and definitions relating to pressures****3.3.2.1****gas supply pressure** **p**

difference between the static pressure measured at the inlet connection of the appliance in operation and the atmospheric pressure

NOTE The gas supply pressure is expressed in millibar (mbar): 1 mbar = 10^2 Pa.

3.3.2.2**test pressures**

gas pressures used to verify the operational characteristics of appliances using combustible gases. They consist of normal and limit pressures

NOTE 1 The gas pressures used are expressed in millibars (mbar): 1 mbar = 10^2 Pa.

NOTE 2 The test pressures are given in Table 9.

3.3.2.3**normal pressure** **p_n**

pressure under which the appliances operate in nominal conditions, when they are supplied with the corresponding reference gas

3.3.2.4**limit pressures**

maximum pressure: p_{\max} ; minimum pressure: p_{\min}

pressures representative of the extreme variations in the supply conditions

3.3.2.5**pressure couple**

combination of two distinct gas distribution pressures applied by reason of the significant difference existing between the Wobbe indices within a single family or group in which:

- the higher pressure corresponds only to gases of low Wobbe index;
- the lower pressure corresponds to gases of high Wobbe index.

3.4 Terms and definitions relating to the parts of the appliance**3.4.1 Burners****3.4.1.1****burners**

component devices that allow the gas to burn

NOTE 1 They may be one of two types:

- non-aerated burners in which the air for combustion is entrained entirely at the burner outlet;
- aerated burners in which part of the air for combustion termed "primary air", is entrained by the gas flow and is mixed with gas before the burner outlet. The remainder of the air, termed "secondary air" is entrained after the burner outlet.

NOTE 2 These burners consist of:

- a gas injector;

- a body forming the mixing tube;
- a head equipped with ports for the air-gas mixture.

3.4.1.2 ignition burners

small burners, the flame of which is intended to light a principal burner

3.4.1.3 pilot

ignition burner controlled independently from principal burners

3.4.1.4 principal burners

burners intended to assure a thermal function to the appliance

3.4.1.5 covered burners

hotplate burners for which the pans being heated are screened from direct flame contact by the interposition of a surface on which they rest

NOTE Covered burners may be of two types:

- a) non enclosed covered burners;
- b) enclosed covered burners.

3.4.1.5.1 non enclosed covered burner

covered burner for which all products of combustion are evacuated directly to atmosphere, e.g. around the periphery of the plate and which is designed so that partial visibility of the flames is possible in normal operation

NOTE A non-enclosed covered burner can be:

- permanent, i.e. designed to be used only with the plate in position;
- temporary, i.e. designed so that it may also be used as an uncovered burner after removal of the removable plate.

3.4.1.5.2 enclosed covered burner

covered burner having a combustion circuit in which all products of combustion are evacuated to atmosphere indirectly through a purpose-designed outlet

NOTE The burner may be so enclosed that flames may not be visible during normal operation.

3.4.1.6 uncovered burners

hotplate burners for which the pans being heated are in direct contact with the flames

3.4.1.7 injector

component part that admits the gas into an aerated burner

NOTE There are two types of injectors:

- calibrated injector in which the section of the outlet orifice is fixed;
- adjustable injector in which the section of the outlet orifice is variable.