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Plinski gospodinjski aparati za kuhanje - 2-1. del: Smotrna raba energije - Splošno

Domestic cooking appliances burning gas - Part 2-1: Rational use of energy - General

Haushalt-Kochgeräte für gasförmige Brennstoffe - Teil 2-1: Rationelle Energienutzung - Allgemeines

Appareils de cuisson domestiques à gaz - Partie 2-1 : Utilisation rationnelle de l'énergie - Généralités

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English Version

Domestic cooking appliances burning gas - Part 2-1: Rational use of energy - General

Appareils de cuisson domestiques à gaz - Partie 2-1 : Utilisation rationnelle de l'énergie - Généralités

Haushalt-Kochgeräte für gasförmige Brennstoffe - Teil 2-1: Rationelle Energienutzung - Allgemeines

This draft European Standard is submitted to CEN members for unique acceptance procedure. It has been drawn up by the Technical Committee CEN/TC 49.

If this draft becomes a European Standard, 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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Foreword

This document (FprEN 30-2-1:2014) has been prepared by Technical Committee CEN/TC 49 “Gas cooking appliances”, the secretariat of which is held by UNI.

This document is currently submitted to the Unique Acceptance Procedure.

This document will supersede EN 30-2-1:1998.

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.

NOTE Due to fact that the Framework Partnership Agreement between the Commission and CEN & CENELEC is not signed yet, there are currently no New Approach Consultants in place for 2014. Therefore the provisions of CEN-CENELEC Guide 15 cannot be met.

This shall not prevent the processing of draft standards nor the offering of harmonized standards to the Commission. In particular, draft standards can be sent to vote without Consultant assessment.

This note will be removed from the Foreword of the finalized publication.

This Part 2-1 “Rational use of energy” of EN 30 complements Part 1-1 “Safety”.

1 Scope

This European Standard sets out the requirements and the test method for the rational use of energy of gas burning domestic cooking appliances, in accordance with EN 30-1-1:2008+A3:2013, Clause 1.

This European Standard covers type testing only.

NOTE The calorific values specified in this European Standard are based on the gross calorific value (Hs) as defined in EN 30–1-1:2008+A3:2013.

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+A3:2013, *Domestic cooking appliances burning gas — Part 1-1: Safety — General*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 30-1-1:2008+A3:2013 and the following apply.

3.1
maintenance consumption of the oven
quantity of heat to be released per unit of time by the gas combustion, in order to maintain the oven temperature constant

Note 1 to entry: Notion: C_e

Unit: kilowatt (kW)

4 Performance characteristics

4.1 Efficiencies

4.1.1 General

The requirements given in 4.1.2 and 4.1.3 are only applicable to hotplate burners, the nominal heat input of which is higher than 1,16 kW.

4.1.2 Single uncovered burner

The efficiency of each single burner determined under the test conditions specified in 5.2.1 shall be at least 52 %.

4.1.3 Single covered burner

The efficiency of each single covered burner determined under the test conditions specified in 5.2.2 shall be at least:

1) 25 % (from cold);

2) 35 % (from hot).

4.1.4 Hob

The efficiency of the gas hob shall be determined under the test conditions specified in 5.2.1

4.2 Maintenance consumption of the oven

Under the test conditions specified in 5.3, the maintenance consumption of the oven shall not exceed the value obtained using the formula:

$$C_e = 0{,}93 + 0{,}035\ v$$

where

v is the useful oven volume, expressed in cubic decimetres, defined in EN 30-1-1:2008+A3:2013, 3.4.3.12.

5 Tests methods

5.1 General

5.1.1 Burner supply

According to the appliance category each burner is individually supplied either with one of the reference gases indicated in EN 30-1-1:2008+A3:2013, 7.1.1.1 or the actual gas distributed complying with the requirements in EN 30-1-1:2008+A3:2013, 7.1.1.3.

The burner in adjusted, within ± 2 %, in accordance with EN 30-1-1:2008+A3:2013, 7.1.3.2.4, to its nominal heat input or to the calorific value set in accordance with the indications of Table 1.

The corresponding position of the adjusting device or the corresponding value of the burner pressure is noted. The burner is then cooled prior to proceeding to the following test in accordance with 5.2.1 or 5.2.2.

5.1.2 Test conditions

Tests are carried out under the installation conditions specified in EN 30-1-1:2008+A3:2013, 7.1.3.3.

5.1.3 Test pans

Aluminium test pans having a matt base, polished walls, no handles and complying with the characteristics of EN 30-1-1:2008+A3:2013, C.1 or 7.1.4.1, for fish burners, are used.

The pans are equipped with their lids.

5.2 Efficiencies

5.2.1 Uncovered burners

Depending on the nominal heat input of the burner being tested, the diameter of the pan to be used and the volume of water which it shall contain are given in Table 1 below.

For the fish burners the water mass is indicated in Table 1 as a function of the nominal heat input of the burner.

Table 1 — Pan diameter and mass of water depending on the heat input of the burner

Nominal heat input of the burner kW	**Internal diameter of the test pan** mm	**Mass of water m_{e1} to be used** kg
between 1,16 and 1,64 inclusive	220	3,7
between 1,65 and 1,98 inclusive	240 [a]	4,8
between 1,99 and 2,36 inclusive	260 [a]	6,1
between 2,37 and 4,2 inclusive	260 [a] with an adjustment of the heat input of the burner to 2,36 kW ± 2 % using the method given in EN 30–1-1:2008+A3:2013, 7.3.1.2.1.1 a)	6,1
greater than 4,2	300 [a] with an adjustment of the heat input of the burner to 4,2 kW ± 2 % using the method given in EN 30–1-1:2008+A3:2013, 7.3.1.2.1.1 a)	9,4

[a] If the indicated diameter (300 mm, 260 mm or 240 mm) is greater than this maximum diameter given in the instructions for use, the test will be carried out using a pan with the next lower diameter (260 mm, 240 mm or 220 mm), containing the corresponding quantity of water (6,1 kg, 4,8 kg or 3,7 kg). In that case the burner heat input will be adjusted to 2,36 kW, 1,98 kW or 1,64 kW respectively, to ± 2 %, using the method described in EN 30–1-1:2008+A3:2013, 7.3.1.2.1.1 a).

The initial temperature of the water t_1 shall be (20 ± 1) °C, and the temperature at the time of extinction of the burner shall be (90 ± 1) °C.

The maximum temperature t_2 observed after extinction of the burner (final temperature expressed in degrees Celsius) is measured.

The temperature sensor is placed in the centre of the volume of water and the temperature is measured using a sensor, the measurement uncertainty of which is less than 0,1 °C.

The burner is pre-heated under the following conditions:

— the burner is operated for 10 min at its nominal heat input or at the input adjusted according to Table 1, in the adjustment position defined and noted in 5.1.1;

— whatever the nominal heat input is the burner is covered with the 220 mm diameter pan containing 3,7 kg of water.

Once preheating is completed the 220 mm diameter pan is withdraw and immediately afterwards is replaced by the pan used for the efficiency test. The measurement of the gas consumption then begins and stops after the extinction of the burner, the pan staying in place.

The efficiency is calculated using the formula:

$$EE_{gas\ burner} = \frac{E_{theoric}}{E_{gas\ burner}} \times 100$$