



**SLOVENSKI STANDARD**  
**oSIST prEN 30-2-1:2022**  
**01-marec-2022**

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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 utilisant les combustibles gazeux - Partie 2-1 : Utilisation rationnelle de l'énergie - Généralités

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**Ta slovenski standard je istoveten z: prEN 30-2-1**

**oSIST prEN 30-2-1:2022**

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**ICS:**

97.040.20	Štedilniki, delovni pulti, pečice in podobni aparati	Cooking ranges, working tables, ovens and similar appliances
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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**DRAFT**  
**prEN 30-2-1**

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ICS 97.040.20

Will supersede EN 30-2-1:2015

English Version

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

Appareils de cuisson domestiques utilisant les  
combustibles gazeux - 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 enquiry. 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.

This draft European Standard was established by CEN 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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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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## European foreword

This document (prEN 30-2-1:2022) 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 CEN Enquiry.

This document will supersede EN 30-2-1:2015.

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

The main modification in this document with reference to the previous edition, EN 30-2-1:2015, are:

- the alignment to the last edition of the referenced standards;
- the removal of requirements concerning single uncovered burners;
- the addition in Table 1 of information for testing burners with nominal heat input between 0,8 kW and 1,15 kW inclusive.

This document has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s) / Regulation(s).

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

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**prEN 30-2-1:2022 (E)****1 Scope**

This document sets out the requirements and the test method for the rational use of energy of gas burning domestic cooking appliances, in accordance with EN 30-1-1:2021, Clause 1.

This document covers type testing only.

NOTE The calorific values specified in this document are based on the gross calorific value (Hs) as defined in EN 30-1-1:2021

**2 Normative references**

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 30-1-1:2021, *Domestic cooking appliances burning gas - Part 1-1: Safety – General*

EN 15181:2017+A1:2020, *Measuring method of the energy consumption of gas fired ovens*

**3 Terms and definitions**

For the purposes of this document, the terms and definitions given in EN 30-1-1:2021 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at <https://www.iso.org/obp>

— IEC Electropedia: available at <http://www.electropedia.org>

**3.1 maintenance consumption of the oven** [oSIST prEN 30-2-1:2022](https://standards.iteh.ai/catalog/standards/sist/14cfe476-861b-491d-afbd-5c271bf6e508/osist-pren-30-2-1-2022)  
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: Ce

Unit: kilowatt (kW)

**4 Performance characteristics****4.1 Efficiency****4.1.1 General**

The requirement given in 4.1.2 is only applicable to hotplate burners, the nominal heat input of which is higher than 0,8 kW.

#### 4.1.2 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).

#### 4.1.3 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 15181:2017+A1:2020, 6.2.

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## 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 30-1-1:2021, 7.1.3.1.

The burner is adjusted, within  $\pm 2$  %, in accordance with EN 30-1-1:2021, 7.1.3.2.3, 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 30-1-1:2021, 7.1.3.3 at an ambient temperature of  $23 \pm 2^\circ\text{C}$ .

#### 5.1.3 Test pans

Aluminium test pans having a matt base, polished walls, no handles and complying with the characteristics of EN 30-1-1:2021, 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.

The test is also carried out on burners that are part of a multi ring hob burner, but which can be operated by means of a separate control device or a sectional control with two turning directions.

NOTE Reference to these burners is Types III, IV and V in Annex H of EN 30-1-1:2021.

**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 0,8 and 1,15 inclusive	220	2,5
between 1,16 and 1,64 inclusive	220	3,7
between 1,65 and 1,98 inclusive	240 <sup>a</sup>	4,8
between 1,99 and 2,36 inclusive	260 <sup>a</sup>	6,1
between 2,37 and 4,2 inclusive	260 <sup>a</sup> with an adjustment of the heat input of the burner to 2,36 kW $\pm$ 2 % using the method given in EN 30-1-1:2021, 7.3.1.2.1.1 a)	6,1
greater than 4,2	300 <sup>a</sup> with an adjustment of the heat input of the burner to 4,2 kW $\pm$ 2 % using the method given in EN 30-1-1:2021, 7.3.1.2.1.1 a)	9,4

<sup>a</sup> 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  $\pm$  2 %, using the method described in EN 30-1-1:2021, 7.3.1.2.1.1 a).



The initial temperature of the water  $t_1$  shall be  $(20 \pm 1)$  °C, and the temperature at the time of extinction of the burner shall be  $(90 \pm 1)$  °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 withdrawn 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:

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

with

$$E_{\text{theoric}} = 4,186 \times 10^{-3} m_e (t_2 - t_1)$$

$$E_{\text{gas burner}} = V_c (\text{or } M_c) \times H_s$$

where

$$EE_{\text{gas burner}} =$$

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energy efficiency of a gas burner in % and rounded to the first decimal place;

$$E_{\text{gas burner}} =$$

energy content of the consumed gas for the prescribed heating in MJ;

$$E_{\text{theoric}} =$$

theoretic minimum required energy for the corresponding prescribed heating in MJ;

$m_e$

is the equivalent mass of the pan filled in accordance with the indications given in Table 1.

The mass  $m_e$  is made up as follows:

$$m_e = m_{e1} + 0,213 m_{e2}$$

where

$m_{e1}$  is the mass of the water used in the pan;

$m_{e2}$  is the mass of the aluminium corresponding to the pan and its lid (the mass  $m_{e2}$  to be taken into account will be the mass measured).

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All masses are expressed in kilograms:

$V_c$  is the volume of dry gas consumed, in cubic metres, determined from the measured volume, by the following formula:

$$V_c = V_{mes} \cdot \frac{p_a + p - p_w}{1013,25} \cdot \frac{288,15}{273,15 + t_g}$$

where

$V_{mes}$  is the measured gas volume, in cubic metres;

$p_a$  is the atmospheric pressure, in millibars;

$p$  is the gas supply pressure at the point where the heat input is measured, in millibars;

$p_w$  is the partial vapour pressure, in millibars;

$t_g$  is the gas temperature at the point where the heat input is measured, in degrees Celsius;

$M_c$  is the mass of dry gas consumed, in kilograms;

$H_s$  is the gross calorific value of the gas, as defined in EN 30-1-1:2021, 3.3.1.5.

Efficiency of the gas hob:

The energy efficiency of the gas hob ( $EE_{gas\ hob}$ ) is calculated as the average of the energy efficiency of the different gas burners ( $EE_{gas\ burner}$ ) of the hob.

$$EE_{gas\ hob} = \frac{1}{n} \cdot \sum_{i=1}^n EE_{gas\ burner, i}$$

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where

$EE_{gas\ hob}$  is the energy efficiency of the gas hob in % and rounded to the first decimal place;

$n$  is the number of burners with a minimum power of 0,8 kW;

$EE_{gas\ burner, i}$  is the energy efficiency of the gas burner  $i$  in % and rounded to the first decimal place.

## 5.2.2 Covered burners

The efficiencies are determined, with any plates in position, under the following conditions:

In accordance with 5.2.1, the pan corresponding to the nominal heat input of the burner being tested containing the corresponding mass of water, is placed at the most appropriate point on the hot plate.

NOTE For this test, footnote a of Table 1 is not applicable.

The smallest number of pans of the largest possible diameter, selected from Table 1, and containing the corresponding masses of water are placed on the remaining surface area, if any, of the hot place.

The temperature is determined in the same manner as for an uncovered burner: the initial water temperature  $t_1$  being  $20\text{ °C} \pm 1\text{ °C}$ , the final temperature  $t_2$  for each pan is the highest temperature observed after extinction of the burner, which takes place as soon as the water temperature of any of the pans reaches  $90\text{ °C} \pm 1\text{ °C}$ .