

SLOVENSKI STANDARD

SIST EN 484:2019

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Nadomešča:
SIST EN 484:1997

Specifikacija za plinske aparate na utekočinjeni naftni plin - Prostostoječi kuhalniki, vključno z žarom za zunanjo uporabo

Specification for dedicated liquefied petroleum gas appliances - Independent stoves, including those incorporating a grill for outdoor use

Festlegungen für Flüssiggasgeräte Flüssiggasbetriebene Kochgeräte einschließlich solcher mit Grillteilen zur Verwendung im Freien

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Spécifications pour les appareils fonctionnant exclusivement aux gaz de pétrole liquéfiés - Réchauds indépendants, équipés ou non d'un grilloir, utilisés en plein air

Ta slovenski standard je istoveten z: **EN 484:2019**

ICS:

97.040.20	Štedilniki, delovni pulti, pečice in podobni aparati	Cooking ranges, working tables, ovens and similar appliances
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Specification for dedicated liquefied petroleum gas
appliances - Independent stoves, including those
incorporating a grill for outdoor use

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exclusivement aux gaz de pétrole liquéfiés - Réchauds
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plein air

Festlegungen für Flüssiggasgeräte -
Flüssiggasbetriebene Kochgeräte einschließlich solcher
mit Grillteilen zur Verwendung im Freien

This European Standard was approved by CEN on 15 February 2019.

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.

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

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European foreword

This document (EN 484:2019) has been prepared by Technical Committee CEN/TC 181 “Appliances and leisure vehicle installations using liquefied petroleum gas and appliances using natural gas for outdoor use”, the secretariat of which is held by AFNOR.

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 October 2019, and conflicting national standards shall be withdrawn at the latest by October 2019.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 484:1997.

The following main technical changes have been made compared to EN 484:1997:

- inconsistencies raised by the European Commission against gas appliance Regulation have been addressed;
- differences on test pressures between French and English versions have been addressed;
- the scope has been specified to indicate that regulators are not covered by this standard;
- the wording “hotplate” (not adapted for appliances covered by EN 484) has been replaced by “stove”;
- the definition 3.9 “auxiliary equipment” has been replaced by “fitting” in the sense of the gas appliance Directive;
- compliance to EN 1106 or EN 126 for the taps has been added;
- paragraphs 7.2.X regarding to the type of examination (visual and/or mechanical) have been reworded;
- a 300 mm diameter pan and the corresponding sampling of product of combustion has been added.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

EN 484:2019 (E)**1 Scope**

This document specifies constructional and performance characteristics, safety specifications and rational use of energy, relevant test methods and marking of independent stoves, side burners, covered burners, open burners, griddles, radiant grills, burning liquefied petroleum gas, referred to in the body of the text as “appliances”.

This document covers appliances, used outdoors and operating with the gases of the third family according to EN 437:2018.

Appliances used in leisure vehicles and boats are outside the field of application of this standard.

Independent stove burners, whose nominal heat input is below 1,16 kW, griddles and radiant grills, are not subject to any special requirement concerning the rational use of energy due to their low rate and their use for short periods of time.

This document does not state all requirements for appliances of other nature incorporating a stove (for example barbecues are not covered by this standard but a side burner of a barbecue is covered by this standard).

This document does not cover regulators that are used with those appliances.

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 125:2010+A1:2015, *Flame supervision devices for gas burning appliances — Thermoelectric flame supervision devices*
[SIST EN 484:2019](https://standards.iteh.ai/catalog/standards/sist/92d14123-1a37-4d0b-84a5-834af172cc4e/sist-en-484-2019)

EN 126:2012, *Multifunctional controls for gas burning appliances*

EN 161:2011+A3:2013, *Automatic shut-off valves for gas burners and gas appliances*

EN 298:2012, *Automatic burner control systems for burners and appliances burning gaseous or liquid fuels*

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

EN 1106:2010, *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 60335-2-102:2016, *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)*

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)*

3 Terms and definitions

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

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

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

independent stove

cooking appliance incorporating one or several covered or open burners and, if applicable, one or several contact or radiant grills

3.2

side burner

part of a cooking appliance incorporating one or several covered or open burners

Note 1 to entry: It is designed in such a way that it can support the pans containing the food.

3.3

griddle

part of an appliance consisting of a plate placed above a burner, allowing for the cooking of food by direct contact with the surface of this plate which is brought to a high temperature

Note 1 to entry: It may be:

- permanent, that is designed to be used only in the above conditions;
- with two functions: that is designed to be capable of being also used as covered or open burner after removal or change of the detachable plate.

3.4

radiant grill

appliance or part of an appliance allowing for cooking by radiation from a surface brought to a high temperature

3.5

cooking device

component part of the appliance designed to hold or receive the food to be cooked

3.6

appliance incorporating a gas container

appliance whose body or support includes a compartment for a liquefied petroleum gas container, or a fixing or support device for this container

3.7

detachable

can be dismantled without using a tool

3.8

removable

can only be removed with a tool

EN 484:2019 (E)**3.9****fittings**

safety devices, controlling devices or regulating devices and sub-assemblies, incorporated into the appliance

Note 1 to entry: For example: tap, flame supervision device, ignition device.

3.10**burner**

component that allow the gas to burn

Note 1 to entry: It may be:

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

3.11**ignition burner (pilot)**

small burner whose flame is designed to light another burner

3.12**covered burner**

burner where the pans being heated are screened from direct flame contact by the interposition of a surface on which they rest

Note 1 to entry: A covered burner may be: [SIST EN 484:2019
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- permanent, that is designed to be used only with the plate in position;
- with two functions: that is designed to be capable of being used as uncovered burner after removal of a detachable plate.

3.13**open burner**

burner where the pans being heated are in direct contact with the flames

3.14**pan support**

support placed above an open burner, and designed to support the pan being heated

3.15**injector**

component part that admits the gas into an aerated burner

Note 1 to entry: There are two types of injectors:

- calibrated injectors where the section of the outlet orifice is fixed;
- adjustable injectors where the section of the outlet orifice is variable.

3.16

tap

device designed to isolate a burner from the gas supply pipework and to adjust its rate during use

Note 1 to entry: There are two types of taps:

- Taps with marked positions: taps for which specific positions are preset (lighting, reduced rate, closed position)
- Taps with variable positions: taps with a continuous setting without specific position

3.17

ignition device

device to ignite one or more burners directly or indirectly, for instance through a flash tube

Note 1 to entry: It may be:

- either electric (resistance, spark, etc.)
- or thermal (flame, pilot, etc.).

3.18

flame supervision device

device which, due to the presence of a flame on the sensing element, keeps open the gas flow to the burner and pilot and which cuts off the gas supply to the burner and pilot in the case of extinction of the supervised flame

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3.19

ignition delay time

time between the ignition of the flame supervised, the appliance being at room temperature, and the moment when the effect of this flame is sufficient to keep the closing member open

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3.20

extinction delay time

time between the extinction of the flame supervised and the closure of the gas supply to the burner and to the pilot

3.21

control handle

component designed to be operated manually so as to control the movement of a control of the appliance, such as a tap, etc.

3.22

gripping area

area of the appliance designed to be manipulated during normal use

3.23

means of sealing

static or dynamic device designed to ensure soundness, for example: flat-faced joints, O-ring joints, conical joints, diaphragms, grease, pastes, putties...

3.24

primary air adjuster

device allowing the aeration rate of a burner to be set at a predetermined value according to the supply conditions

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Note 1 to entry: The action consisting in operating this device is termed “primary air adjustment”.

3.25**gas rate adjuster**

device allowing the gas rate to a burner to be set at a predetermined value according to the supply conditions

Note 1 to entry: The adjustment can be continuous (adjustment screw) or discontinuous (changing the calibrated orifices).

Note 2 to entry: The operation of changing the setting of this device is termed the “adjustment of the gas rate”.

3.26**useful part of a cooking device**

part of the device in contact with the food during cooking

3.27**locking**

means of locking an adjuster, such that any attempt to change the adjustment causes the breaking of the sealing device or sealing material and makes the interference with the adjuster apparent

Note 1 to entry: The adjuster is said to be sealed in the adjusted position. An adjuster sealed at the factory is considered as non existent.

3.28**soft solder**

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

3.29**pressure couple**

set of two separate supply gas pressures applied because of the large difference between the Wobbe indexes within a gas family or a gas group:

- the highest pressure applies only with gases of low Wobbe index;
- the lowest pressure applies only with gases of high Wobbe index.

[SOURCE: EN 437:2018]

3.30**heat input**

quantity of energy used in unit time corresponding to the volumetric or mass flow rates, the calorific value used being either the net or gross calorific value

Note 1 to entry: The heat input is expressed in kilowatts (kW).

[SOURCE: EN 437:2018]

3.31**nominal heat input**

Q_n

value of the heat input of a burner declared in the instructions

3.32**mass flow rate****M**

mass of gas consumed by the appliance in unit time during continuous operation

Note 1 to entry: The mass flow rate is expressed in kilograms per hour (kg/h) or grams per hour (g/h).

[SOURCE: EN 437:2018]

3.33**volume rate****V**

volume of gas consumed by the appliance in unit time during continuous operation

Note 1 to entry: The volume flow rate is expressed in cubic metres per hour (m³/h), litres per minute (l/min), cubic decimetres per hour (dm³/h) or cubic decimetres per second (dm³/s).

[SOURCE: EN 437:2018]

3.34**sooting**

phenomenon appearing during incomplete combustion and characterized by a deposit of carbon on surfaces in contact with the flame or the products of combustion

3.35**stability of flames**

condition of flames when the phenomenon of flame lift or light back do not occur

3.36**light back**

phenomenon characterized by the return of the flame inside the body of the burner

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3.37**flame lift**

phenomenon characterized by the partial or total movement of the base of the flame away from the burner port

3.38**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

[SOURCE: EN 437:2018]

3.39**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

Note 1 to entry: The Wobbe index is said to be gross or net according to whether the calorific value used is the gross or net calorific value.

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Note 2 to entry: The Wobbe index 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 3 to entry: Adapted from EN 437:2018.

3.40**calorific value**

quantity of heat produced by the complete combustion, at a constant pressure equal to 1 013,25 mbar, of a unit volume or mass of gas, the constituents of the combustible mixture being taken at reference conditions and the products of combustion being brought back to the same conditions

Note 1 to entry: 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 2 to entry: 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 3 to entry: For the purposes of this European Standard only the gross calorific value is used. The calorific values are expressed in units of energy referred:

- either to the unit volume of dry gas measured under normal reference conditions: 15 °C, 1 013,25 mbar; it is expressed in megajoules per cubic metre (MJ/m³);
- or to the unit mass of dry gas. It is then expressed in megajoules per kilogramme (MJ/kg).

Note 4 to entry: Adapted from EN 437:2018.

3.41**supply pressure**

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

Note 1 to entry: It is expressed in millibars (mbar).

3.42**reference conditions**

15 °C, 1 013, 25 mbar, unless otherwise specified

4 Classification**4.1 Classification of gases used**

Gases used are classified in families and groups according to their Wobbe number.

According to EN 437:2018, the third family, grouping liquefied petroleum gases, covers Wobbe indexes between 72,9 MJ/m³ and 87,3 MJ/m³ (W_S). It is subdivided into two groups, group P which

covers the range of Wobbe indexes between 72,9 MJ/m³ and 76,8 MJ/m³ and group B which covers the range of Wobbe indexes between 81,8 MJ/m³ and 87,3 MJ/m³.

4.2 Classification of appliances

Appliances are classified into categories according to the gases that they use. However, for each country, only some of the categories mentioned below are applicable, on account of local gas supply conditions (types of gas and supply pressures). For these categories, no requirement different from those defined in this standard shall be applied.

The gas supply conditions and types of connection applicable to each country are given in Annex A.

Appliances within the field of application of this standard belong to the following categories and pressure values:

a) Category I3B/P(30)

Appliance capable of using third family gases (propane, butane or their mixtures), without adjustment at nominal operating pressures of 30 mbar;

b) Category I3P(B/P)(37)

Appliances capable of using third family gases of group P and B/P. The gases of group P are used under the same conditions as for category I3P. The gases of group B/P are used under the same conditions as for category I3B/P with the test pressure of 37 mbar;

c) Category I3B/P(50)

Appliance capable of using third family gases (propane, butane or their mixtures), without adjustment at nominal operating pressure of 50 mbar;

d) Category I3+(28-30/37)

Appliance capable of burning third family gases (butane and propane), and operating without adjustment on the appliance using a pressure couple. For butane, appliances in this category may be used without adjustment at nominal operating pressures from 28 mbar to 30 mbar, for propane they are used at a nominal operating pressure of 37 mbar;

e) Category I3P(37)

Appliances capable of using third family gases in group P (propane), without adjustment at a nominal operating pressure of 37 mbar;

f) Category I3P(50)

Appliances capable of using third family gases in group P (propane), without adjustment at a nominal operating pressure of 50 mbar.

5 Constructional characteristics

5.1 Operating with different gases

The appliance shall operate under normal supply conditions (type of gas and corresponding supply pressure) specified in the instructions for use, without requiring any intervention on the internal gas circuit or the adjusters of the appliance.

Adjusters shall be locked and sealed.