SLOVENSKI STANDARD
oSIST prEN 497:2020

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Specifikacija za plinske aparate na utekočinjeni naftni plin - Večnamenski kuhalni aparati za zunanjo uporabo

Specification for dedicated liquefied petroleum gas appliances - Multi purpose boiling burners for outdoor use

Festlegungen für Flüssiggasgeräte - Flüssiggasbetriebene Mehrzweckkochgeräte zur Verwendung im Freien

Spécifications pour les appareils fonctionnant exclusivement aux gaz de pétrole liquéfiés - Brûleurs à usages multiples

Ta slovenski standard je istoveten z: **prEN 497**

ICS:

97.040.20	Štedilniki, delovni pulti, pečice in podobni aparati	Cooking ranges, working tables, ovens and similar appliances

oSIST prEN 497:2020 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

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Will supersede EN 497:1997

English Version

Specification for dedicated liquefied petroleum gas appliances - Multi purpose boiling burners for outdoor use

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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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European Foreword

This document (prEN 497:2019) has been prepared by Technical Committee CEN/TC 181 “Dedicated liquefied petroleum gas appliances”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

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, B, C or D, which is an integral part of this document.

1 Scope

This document specifies the constructional and performance characteristics, safety specifications and rational use of energy, relevant test methods and marking of burners burning liquefied petroleum gas and designed to heat up vessels of diameter greater than 300 mm, containing liquids or food.

They are referred to in the body of the text as "appliances".

This document covers appliances, generally floor standing, fitted with one or several open burners without enclosure, designed to be used outdoors and operating with the gases corresponding to the categories indicated in 4.

Appliances supplied with third family gas at other pressures than those defined in 4 are outside the field of application of this document.

Appliances covered by this document are not connected to a flue for the products of combustion and are not connected to the mains electrical supply.

Appliances with a nominal heat input below 1,16 kW are not subject to any requirement concerning the rational use of energy due to their low rate.

For appliance having multiple concentric burners, burners greater than 56 cm diameter are not subject to any requirement concerning the rational use of energy for safety reasons due to handling of the vessel.

This document does not cover LPG containers for liquefied petroleum gas, their associated regulator, tubing and flexible hoses used for gas supply of appliances covered by this document. Regulator, tubing and flexible hoses are covered by other standards (EN 16129, EN 16436-1 and prEN 16436-2, etc.) and national regulations.

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*

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

EN 437:2018, *Test gases - Test pressures - Appliance categories*

EN 549:2019, *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 10266-2:2005, *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 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 document, 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
multi purpose boiling burner:
one or several burners which are part of a structure ensuring both the support of burners and that of vessels and generally used as floor standing appliance

Note 1 to entry: They incorporate one device (or devices) which ensures one set position of the burner (or burners) in relation to the plane on which the appliance rests and to vessels. Figure 1 gives diagrams of this type of appliance, for information.

3.2
appliances incorporating a gas container
appliance whose body or support includes a fixing or support device for a liquefied petroleum container

3.3
burner
component that allows 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.

3.4
ignition burner (pilot)
small burner whose flame is designed to light another burner

3.5
open burner
burner where the pans being heated are in direct contact with the flames

3.6
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

3.7
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.).

3.8
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

3.9
detachable
which can be dismantled without using a tool

3.10
removable
which can only be removed with a tool

3.11
fittings
safety devices, controlling devices or regulating devices and sub-assemblies, incorporated into the appliance

NOTE For example: tap, flame supervision device, ignition device...

3.12
locking of an adjuster
immobilization of an adjuster in its adjustment position by some means (screw, etc.)

3.13
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

3.14
gripping area
area of the appliance designed to be manipulated during normal use

3.15
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..

3.16
primary air adjuster
device allowing the aeration rate of a burner to be set at a predetermined value according to the supply conditions

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

3.17
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 presset (lighting, reduced rate, closed position)

— Taps with variable positions: taps with a continuous setting without specific position

3.18
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

3.19
extinction delay time
time which elapses between the extinction of the supervised flame and the closure of the gas supply controlled by the flame supervision device

3.20
soft solder
solder for which the lowest temperature of the melting range, after application, is less than 450 °C

3.21
pan support
support placed above an open burner, and designed to support the pan being heated

3.22
reference conditions
these correspond to 15 °C, 1 013, 25 mbar, unless otherwise specified

[EN 437:2018]

3.23
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”.

3.24
gas 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).

3.25
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.

[EN 437:2018]

3.26
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 Hs: the water produced by combustion is assumed to be condensed;

— the net calorific value Hi: 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/m^3) 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.

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

3.27
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).

[EN 437:2018]

3.28
nominal heat input
Q_n
value of the heat input of the appliance declared in the instructions

Note 1 to entry: Adapted from EN 437:2018

3.29
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).

[EN 437:2018]

3.30
volume flow 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 (m^3/h), litres per minute (l/min), cubic decimetres per hour (dm^3/h) or cubic decimetres per second (dm^3/s).

[EN 437:2018]

3.31
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

[EN 437:2018]

3.32
wobbe index
gross Wobbe index Ws;
net Wobbe index Wi
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.

Note 2 to entry: The Wobbe index is expressed:

— either in megajoules per cubic metre (MJ/m^3) 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.

3.33
stability of flames
condition of flames when the phenomena of flame lift or light back do not occur

3.34
flame lift
phenomenon characterized by the partial or total movement of the base of the flame away from the burner port

3.35
sooting
phenomenon appearing during incomplete combustion and characterized by a deposit of carbon on surfaces in con tact with the flame or the products of combustion

3.36
light back
phenomenon characterized by the return of the flame inside the body of the burner

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/m^3 and 87,3 MJ/m^3 (Ws). It is subdivided into two groups, group P which covers the range of Wobbe indexes between 72,9 MJ/m^3 and 76,8 MJ/m^3 and group B which covers the range of Wobbe indexes between 81,8 MJ/m^3 and 87,3 MJ/m^3.

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:

Category $I_{3B/P}$

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

Category $I_{3P(B/P)}$

Appliance 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 at the prescribed supply pressure;

Category I_{3+}

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 the prescribed supply pressure.

Category I_{3P}