



SLOVENSKI STANDARD

SIST EN 498:2012

01-september-2012

Nadomešča:

SIST EN 498:1997

SIST EN 498:1997/AC:2002

Specifikacija za plinske aparate na utekočinjeni naftni plin - Žari za uporabo na prostem, vključno z žari s ploščo

Specification for dedicated liquefied petroleum gas appliances - Barbecues for outdoor use contact grills included

iTeh STANDARD PREVIEW

Festlegungen für Flüssiggasgeräte - Grillgeräte zur Verwendung im Freien einschliesslich Kontaktgrillgeräte

[SIST EN 498:2012](#)

Spécifications pour les appareils fonctionnant exclusivement aux gaz de pétrole liquéfiés - Barbecues utilisés en plein air y compris grilloirs par contact

Ta slovenski standard je istoveten z: EN 498:2012

ICS:

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

SIST EN 498:2012

en,fr,de

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 498:2012

<https://standards.iteh.ai/catalog/standards/sist/67038845-5074-464c-a92b-3c8418ca35f0/sist-en-498-2012>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 498

January 2012

ICS 97.040.20

Supersedes EN 498:1997

English Version

Specification for dedicated liquefied petroleum gas appliances - Barbecues for outdoor use contact grills included

Spécifications pour les appareils fonctionnant
exclusivement aux gaz de pétrole liquéfiés - Barbecues
utilisés en plein air y compris grilloirs par contact

Festlegungen für Flüssiggasgeräte - Grillgeräte zur
Verwendung im Freien einschließlich Kontaktgrillgeräte

This European Standard was approved by CEN on 12 November 2011.

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.

This European Standard exists 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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, 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, Turkey and United Kingdom.

[SIST EN 498:2012](https://standards.iteh.ai/catalog/standards/sist/67038845-5074-464c-a92b-3c8418ca35f0/sist-en-498-2012)

<https://standards.iteh.ai/catalog/standards/sist/67038845-5074-464c-a92b-3c8418ca35f0/sist-en-498-2012>



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....	5
1 Scope	6
2 Normative references	6
3 Terms and definitions	7
4 Classification	12
4.1 Classification of gases used	12
4.2 Classification of appliances	12
5 Constructional characteristics	13
5.1 Conversion to different gases	13
5.2 Materials	13
5.3 Ease of cleaning	14
5.4 Strength	14
5.4.1 General.....	14
5.4.2 Characteristics of glass panels.....	14
5.5 Assembly.....	14
5.6 Stability.....	15
5.6.1 Stability of the appliance on a horizontal plane.....	15
5.6.2 Stability of the appliance placed on a slope.....	15
5.7 Soundness of the gas circuit assembly.....	15
5.8 Connections	16
5.9 Locking of wheels and castors	16
5.10 Taps.....	16
5.10.1 General.....	16
5.10.2 Taps with marked positions	17
5.10.3 Taps with variable positions	17
5.11 Control handles	17
5.11.1 Construction	17
5.11.2 Marking	17
5.12 Injectors.....	18
5.13 Ignition devices.....	18
5.14 Flame supervision devices.....	19
5.15 Burners	19
5.16 Grid.....	20
5.17 Turnspits	20
5.18 Appliance incorporating a gas cylinder	20
5.19 Durability of markings.....	21
5.20 Auxiliary energy.....	21
6 Performance characteristics	21
6.1 Soundness	21
6.2 Verification of heat inputs.....	21
6.2.1 Verification of individual nominal heat inputs.....	21
6.2.2 Verification of full heat input.....	22
6.3 Flame supervision devices.....	22
6.4 Safety of operation	22
6.4.1 Ignition, crosslighting	22
6.4.2 Flame stability.....	22
6.4.3 Resistance to draught.....	22

6.4.4	Resistance to overheating.....	22
6.5	Temperatures.....	22
6.6	Overheating of the gas cylinder(s).....	23
6.7	Combustion.....	24
6.8	Sooting.....	24
7	Test methods.....	24
7.1	General.....	24
7.1.1	Test gases.....	24
7.1.2	Test pressures.....	25
7.1.3	Test procedures.....	26
7.2	Verification of the constructional characteristics.....	26
7.2.1	Conversion to different gases.....	26
7.2.2	Materials.....	26
7.2.3	Ease of cleaning.....	26
7.2.4	Strength.....	27
7.2.5	Assembly.....	27
7.2.6	Stability of the appliance.....	27
7.2.7	Soundness of the gas circuit assembly.....	28
7.2.8	Connections.....	28
7.2.9	Locking of wheels and castors.....	28
7.2.10	Taps.....	28
7.2.11	Control handles.....	28
7.2.12	Injectors.....	28
7.2.13	Ignition devices.....	28
7.2.14	Flame supervision devices.....	28
7.2.15	Burners.....	28
7.2.16	Grid.....	28
7.2.17	Turnspit.....	29
7.2.18	Appliances incorporating a gas cylinder(s).....	29
7.2.19	Durability of markings.....	29
7.2.20	Auxiliary energy.....	29
7.3	Verification of the performance characteristics.....	29
7.3.1	Soundness.....	29
7.3.2	Verification of the nominal heat input.....	29
7.3.3	Flame supervision device.....	29
7.3.4	Safety of operation.....	30
7.3.5	Temperatures.....	32
7.3.6	Overheating of the gas cylinder.....	32
7.3.7	Combustion.....	33
7.3.8	Sooting.....	34
7.3.9	Durability of the marking.....	34
8	Marking.....	34
8.1	Appliance marking.....	34
8.2	Packaging marking.....	35
8.3	Instructions for assembly, use and maintenance.....	35
Annex A	(normative) National situations.....	42
A.1	General.....	42
A.2	Categories marketed in the various countries and corresponding pressures.....	42
A.3	Types of connection used in various countries.....	44
A.4	Connection of appliances.....	46
Annex B	(normative) Method of calculation of the nominal heat input.....	48
B.1	Heat input determination.....	48
B.2	Correction formulas for reference conditions.....	48
B.3	Use of wet gas meter.....	49
B.4	Pressure correction.....	49

EN 498:2012 (E)

Annex C (normative) Composition of test gases	51
C.1 Gas used	51
C.2 Acceptance criteria for test gases	51
C.3 Purity	51
Annex D (informative) Mandatory sentences	52
D.1 English	52
D.2 French	52
D.3 German	52
D.4 Italian	53
D.5 Polish	53
D.6 Spanish	53
D.7 Dutch	54
D.8 Czech	54
D.9 Greek	54
D.10 Hungarian	55
D.11 Portuguese	55
D.12 Swedish	55
D.13 Danish	56
D.14 Finnish	56
D.15 Lithuanian	56
D.16 Norwegian	57
D.17 Slovak	57
D.18 Estonian	57
D.19 Latvian	58
D.20 Slovenian	58
D.21 Icelandic	58
D.22 Maltese	59
D.23 Romanian	59
Annex ZA (informative) Clauses of this European Standard addressing essential requirements or other provisions of EU Directives	60
Bibliography	63

iTeh STANDARD PREVIEW
(standards.itech.ai)

SIST EN 498:2012

<https://standards.itech.ai/catalog/standards/sist/070500-2-5077-10-10-498>
[3c6418ca3550/sist-en-498-2012](https://standards.itech.ai/catalog/standards/sist/070500-2-5077-10-10-498)

Foreword

This document (EN 498:2012) has been prepared by Technical Committee CEN/TC 181 "Dedicated liquefied petroleum gas appliances", 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 July 2012, and conflicting national standards shall be withdrawn at the latest by July 2013.

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 498:1997.

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.

The main changes compared to the former version are the following:

- approved quick self closing connection used for auxiliary burners are not subjected to the obligation of being manufactory mounted;
- clearer specifications for lighting and cross lighting when more than one burner are in a same enclosure, use of flash tube;
- introduction of a logo or warning forbidding cylinders in places of the appliance not designed for cylinder storage;
- rewording of the test for checking over heating of gas cylinder compartment;
- addition of a warning about the updating of information relating to national situations;
- addition of an annex listing the mandatory sentences to be written on appliances, packaging and in instructions in the various CEN members countries languages.

Items relating to quality assurance systems, production testing and particularly certificates of conformity of auxiliary equipment are not covered by this European Standard.

Particular attention should be paid to the quality of non metallic materials used in the construction of these appliances. A European Standard specifying requirements for "Rubber materials for seals and diaphragms for gas appliances and equipment" has been prepared by CEN TC 108 (EN 549). A European Standard for "Flexible hose, tubing and assembles for use with butane or propane in the vapour phase" is being prepared.

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, Croatia, 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, Turkey and the United Kingdom.

EN 498:2012 (E)**1 Scope**

This European Standard specifies the constructional and performance characteristics, safety specifications, relevant test methods and marking of barbecues burning liquefied petroleum gas, referred to in the body of the text as "appliances".

This European Standard covers barbecues as defined in 3.6 and contact grills as defined in 3.8, used outdoors and operating with the gases indicated in 4.1 according to the categories indicated in 4.2. They are fitted with at least one cooking device.

This European Standard applies to these appliances and their functional sections whether or not the latter are independent or incorporated into an assembly.

This European Standard also applies to appliances designed to be built-in.

This European Standard only applies to type testing.

Appliances supplied with third family gas at pressures greater those defined in 4.2 are outside the field of application of this European Standard.

During the consideration of this text, it was apparent that the concept of thermal efficiency with regard to appliances such as barbecues was not appropriate.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

This is because:

- during cooking, there is an additional transfer of heat due to the meat juices falling onto the refractories;
- there is no relation between the item to be cooked and the useful area;
- the barbecue is an outdoor appliance in which the action of the wind is important in relation to efficiency.

In consequence there is no specific requirement covering thermal efficiency for this type of appliance.

This European Standard does not state all applicable requirements for integral equipments of other nature (for example burners covered by EN 484).

2 Normative references

The following referenced documents are indispensable for the application 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, *Flame supervision devices for gas burning appliances — Thermoelectric flame supervision devices*

EN 126, *Multifunctional controls for gas burning appliances*

EN 437:2003+A1:2009, *Test gases — Test pressures — Appliance categories*

EN 10226-1, *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, *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 60335-1, *Household and similar electrical appliances — Safety — Part 1: General requirements (IEC 60335-1, modified)*

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

3 Terms and definitions

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

3.1

cooking devices

component parts of the appliance designed to hold or receive the food to be cooked (grids, turnspits, plates, etc.)

3.2

detachable

can be dismantled without using a tool

3.3

appliance incorporating a gas cylinder

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

3.4

built-in appliance

appliance designed to be built into a brick or similar structure

3.5

auxiliary equipment

component and device acting directly or indirectly on the gas rate

3.6

barbecue

appliance principally designed to roast and/or grill foodstuffs

NOTE

Cooking is achieved by the action of radiant heat and, possibly by convection and/or conduction.

3.7

movable barbecue

barbecue fitted with at least one wheel enabling it to be moved easily on the ground

3.8

contact grill, plancha

appliance designed to grill foodstuffs by conduction

3.9

locking of an adjuster

immobilisation by the manufacturer or by an installer of an adjuster, in its adjustment position by any means (a screw, etc.)

3.10

turnspit

cooking device enabling the rotation of the food to be roasted

EN 498:2012 (E)

NOTE Its rotation can be effected manually or using a mechanical or electrical motor.

**3.11
burner**

component that allows the gas to burn

NOTE It may be one of two types:

- 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.

**3.12
ignition burner**

small burner whose flame is designed to light another burner

NOTE They are called "pilots" in this European Standard.

**3.13
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

**3.14
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

[EN 437:2003+A1:2009]

**3.15
heat input**

Q

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 The heat input is expressed in kilowatts (kW).

[EN 437:2003+A1:2009]

**3.16
nominal heat input of a burner**

Q_n

value of the heat input declared by the manufacturer

NOTE Adapted from EN 437:2003+A1:2009.

**3.17
mass flow rate**

M

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

NOTE The mass flow rate is expressed in kilograms per hour (kg/h) or grams per hour (g/h).

[EN 437:2003+A1:2009]

3.18

volume flow rate

V

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

NOTE 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).

[EN 437:2003+A1:2009]

3.19

flame lift

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

3.20

removable

which can only be detached with a tool

3.21

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

[SIST EN 498:2012](#)

[EN 437:2003+A1:2009] standards.iteh.ai/catalog/standards/sist/67038845-5074-464c-a92b-3c8418ca35f0/sist-en-498-2012

3.22

ignition device

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

NOTE It may be:

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

3.23

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

3.24

grid

cooking device designed to hold the food to be cooked

NOTE 1 Its useful component(s) can be rigid or flexible.

NOTE 2 A grid with flexible useful components (called a "wallet" grid) is made up of two jointed components enabling tight gripping of the food to be cooked. Each component consists of a rigid frame on which metallic wires are fixed and form a flexible mesh inside the frame distorting around the food.

EN 498:2012 (E)**3.25****glass panel**

transparent surface allowing the inside of the appliance to be seen

3.26**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 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 The Wobbe indices are 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 Adapted from EN 437:2003+A1:2009.

3.27**injector**

component part that admits the gas into an aerated burner

NOTE 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.

3.28**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.

3.29**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, etc.

3.30**primary air adjuster**

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

NOTE The action consisting in operating this device is termed "primary air adjustment".

3.31**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 The adjustment can be continuous (adjustment screw) or discontinuous (changing the calibrated orifices).

NOTE 2 The operation of changing the setting of this device is termed the "adjustment of the gas rate".

3.32**useful part of a cooking device**

part of the device in contact with the food during cooking

NOTE In particular, the useful length of the turnspit is the maximum length which is capable of coming in contact with the foodstuff.

3.33**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 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 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 Adapted from EN 437:2003+A1:2009.

NOTE 4 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/m^3);
- or to the unit mass of dry gas. It is then expressed in megajoules per kilogramme (MJ/kg).

3.34**gas supply pressure**

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

NOTE It is expressed in millibars (mbar).

3.35**light back**

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

3.36**tap**

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

3.37**locking**

means of locking an adjuster so 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 The adjuster is said to be sealed in the adjusted position. An adjuster sealed at the factory is considered as non existent.

EN 498:2012 (E)**3.38****soft solder**

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

3.39**stability of flames**

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

3.40**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

3.41**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

3.42**gripping area**

area of an appliance component designed to be manipulated during normal use

4 Classification

iTeh STANDARD PREVIEW

4.1 Classification of gases used (standards.iteh.ai)

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

The third family, grouping liquefied petroleum gases, covers Wobbe indexes between 72,9 MJ/m³ and 87,3 MJ/m³ (W_S) which corresponds to group B/P. 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 European 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:

a) Category I3B/P(30):

Appliances capable of using third family gases (propane, butane or their mixtures), without adjustment at nominal operating pressures from 28 mbar to 30 mbar;

b) Category I3B/P(37):

Appliances capable of using third family gases (propane, butane or their mixtures), without adjustment at nominal operating pressures of 37 mbar;

c) Category I_{3B/P}(50):

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

d) Category I₃₊(28-30/37):

Appliances 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 I_{3P}(37):

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

f) Category I_{3P}(50):

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

5 Constructional characteristics¹⁾

(standards.iteh.ai)

5.1 Conversion to different gases

The appliance shall operate under the conditions of use specified in the instructions, without requiring any intervention on the internal gas circuit or the adjusters of the appliance.

Adjusters shall be locked and sealed by the manufacturer.

5.2 Materials

The quality and thickness of materials used in the construction of an appliance shall be such that the constructional and performance characteristics are not altered in use.

In normal conditions of operation, cleaning or transport, the parts of the appliance:

- shall withstand the mechanical, chemical and thermal actions to which they may be submitted;
- shall not be liable to any alteration which might impair their operation.

Metallic parts not made of corrosion-resistant materials shall be covered with an effective protection against corrosion. This requirement does not apply to grids supporting radiant component (lava rock, ceramic, etc.) or cooking devices.

Asbestos or asbestos based material shall not be used.

The nature and surface state of materials likely to be in contact with food need to:

1) The test methods for verifying the compliance of the appliance to the requirements of this clause are indicated in 7.2.