

SLOVENSKI STANDARD

SIST EN 14543:2017

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Nadomešča:

SIST EN 14543:2005+A1:2008

Specifikacija za plinske aparate na utekočinjeni naftni plin - Prostostoječi gobasti grelniki za terase - Sevalni grelniki brez priključka na dimnik za zunanjo uporabo ali uporabo v dobro prezračevanih prostorih

Specification for dedicated liquefied petroleum gas appliances - Parasol patio heaters - Flueless radiant heaters for outdoor or amply ventilated area use

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Festlegungen für Flüssiggasgeräte - Terrassen-Schirmheizgeräte - Abzugslose Terrassenheizstrahler zur Verwendung im Freien oder in gut belüfteten Räumen

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Spécifications pour les appareils fonctionnant exclusivement aux gaz de pétrole liquéfiés - Parasols pour chauffage de terrasse - Appareils de chauffage radiants non raccordés utilisés à l'extérieur ou dans des espaces largement ventilés

Ta slovenski standard je istoveten z: EN 14543:2017

ICS:

97.100.20 Plinski grelniki Gas heaters

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EUROPEAN STANDARD

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Specification for dedicated liquefied petroleum gas appliances - Parasol patio heaters - Flueless radiant heaters for outdoor or amply ventilated area use

Spécifications pour les appareils fonctionnant exclusivement aux gaz de pétrole liquéfiés - Parasols pour chauffage de terrasse - Appareils de chauffage radiants non raccordés utilisés à l'extérieur ou dans des espaces largement ventilés

Festlegungen für Flüssiggasgeräte - Terrassen-Schirmheizgeräte - Abzugslose Terrassenheizstrahler zur Verwendung im Freien oder in gut belüfteten Räumen

This European Standard was approved by CEN on 27 February 2017.

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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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 14543:2017) 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 January 2018, and conflicting national standards shall be withdrawn at the latest by January 2018.

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 14543:2005+A1:2007.

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 2009/142/EC of the European Parliament and of the Council of 30 November 2009 relating to appliances burning gaseous fuels.

For relationship with EU Directive 2009/142/EC, see informative Annex ZA, which is an integral part of this document.

The following changes were implemented with regard to the previous edition:

- addition of max pressure in the scope;
- access to the cylinder valve (only one hand movement without the use of any key or tool);
- limitation of the ignition output to 5 kW;
- requirement for internal flexibles;
- distinction between wall mounted, suspended and grounded appliances;
- requirement for water protection of electrical equipment;
- removal of any reference to EN 449 compliant appliances;
- addition of warning of the changing of tubing or flexible.

Annexes A, B and ZA are informative.

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, 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 14543:2017 (E)**1 Scope**

This European standard specifies the design, safety and marking requirements and test methods for flueless patio heaters for outdoor or amply ventilated area use only.

These appliances are for use exclusively with gases of the third family as defined in Clause 4.

This European standard applies to appliances that have a nominal heat input not exceeding 17 kW (based on the gross calorific value), supplied with a maximum inlet pressure of 50 mbar:

- fixed or,
- movable, including those which comprise a housing for a transportable and rechargeable liquefied petroleum gas cylinder.

This European standard does not apply to appliances equipped with a fan for either combustion or circulation of the convection air.

This European standard 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 European standard. Regulator, tubing and flexible hoses are covered by others standards (EN 16129, EN 16436-1 and prEN 16436-2, etc.) and national regulations.

This European standard does not lay down any specific requirements for the thermal efficiency of this type of appliances, but the requirements relating to combustion, which is a safety matter, ensure that the gas fuel will burn efficiently. However a method to measure the performance is described in informative Annex B.

2 Normative references (standards.iteh.ai)

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

EN 257:2010, *Mechanical thermostats for gas-burning appliances*

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

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

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

EN 751-1:1996, *Sealing materials for metallic threaded joints in contact with 1st, 2nd and 3rd family gases and hot water— Part 1: Anaerobic jointing compounds*

EN 751-2:1996, *Sealing materials for metallic threaded joints in contact with 1st, 2nd and 3rd family gases and hot water — Part 2: Non-hardening jointing compounds*

EN 751-3:1996, *Sealing materials for metallic threaded joints in contact with 1st, 2nd and 3rd family gases and hot water — Part 3: Unsintered PTFE tapes*

EN 1106:2010, *Manually operated taps for gas burning appliances*

EN 13611:2015, *Safety and control devices for burners and appliances burning gaseous and/or liquid fuels — General requirements*

EN 16617:2015, *Pipework — Corrugated metal hose assemblies for combustible gas — Performance requirements, testing and marking*

EN 60335-1:2012, *Household and similar electrical appliances — Safety — Part 1: General requirements (IEC 60335-1:2010, modified)*

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, modified)*

EN 60529:1991¹⁾, *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)*

3 Terms and definitions

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

3.1

fixed heating appliance

appliance designed to be fixed, for example wall-mounted, on a table, ground-installed or suspended

3.2

movable heating appliance

self-powered heating appliance in which the gas cylinder can be fitted inside the body or chassis of the appliance, and designed to be moved without requiring lifting

3.3

amply ventilated area

volume in which the permanent opening directly connected to outdoors is at least 25 % of the walls surface

3.4

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 (pilot, etc.).

3.5

flame supervision device

device including a sensing element which causes the gas supply to a burner to be opened or closed according to the presence or absence of the flame which activates the sensing element

[SOURCE: EN 449:2002+A1:2007, 3.11]

3.6

atmosphere sensing device

device that is designed to shut off the gas supply when the carbon dioxide concentration of the surrounding atmosphere exceeds a given level

Note 1 to entry: Such a device normally comprises a vitiation sensitive pilot burner in conjunction with a suitable flame supervision device.

1) This document is currently impacted by the stand-alone amendments EN 60529:1991/A1:2000 and EN 60529:1991/A2:2013 and the corrigendum EN 60529:1991/corrigendum May 2013 and EN 60529:1991/AC:2016-12.

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3.7

gas circuit

part of the appliance where the gas circulates, between the gas inlet and the injector

3.8

injector

component part that admits the gas into an aerated burner

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

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

3.9

burner

component that allows the gas to burn

3.9.1

pilot burner

burner intended to ignite the main burner

3.9.2

main burner

burner which provides the heating function of the appliance and is often called simply a “burner”

3.10

ignition delay time

time between the moment when the gas is lit at the pilot (or main burner, if there is no pilot) and that when the flame supervision device acts

3.11

extinction delay time

time between the moment when the pilot burner and main burner are extinguished by shutting off the gas supply and the moment when, after restoring the supply, the flow of gas to the appliance ceases through the action of the flame supervision device

3.12

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.

3.13**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 437:2003+A1:2009, 3.10]

3.14**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.

Note 2 to entry: The Wobbe indices are 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.

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

[SOURCE: EN 437:2003+A1:2009, 3.13]

3.16**nominal heat input*****Q_n***

value of the heat input stated in the instructions

3.17**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 437:2003+A1:2009, 3.15]

3.18**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 (m³/h), litres per minute (l/min), cubic decimetres per hour (dm³/h) or cubic decimetres per second (dm³/s).

[SOURCE: EN 437:2003+A1:2009, 3.16]

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3.19

cold condition

state of the appliance when it is at ambient temperature

3.20

reference conditions

conditions which correspond to 15 °C, 1 013, 25 mbar, unless otherwise specified

[SOURCE: EN 437:2003+A1:2009, 3.9]

4 Classification and designation

The appliances covered by this European Standard operate with 3rd family gases defined in EN 437:2003+A1:2009, 6.1.2.3.

For national situations see Annex A.

5 Design requirements

5.1 General

Depending on their operating height, and according to Table 1 the patio heaters:

- shall not exceed the nominal heat input stated;
- shall be fitted with one or two grids to protect against accidental contact respectively with working surface and/or reflector.

For adjustable appliances the minimum operating height shall be considered.

Table 1 — Nominal heat input and protection grids relating to the height of the appliance

Minimum operating height: h m	Maximal nominal heat input kW (H_s) ^a	Grid required to prevent from contact with the working surface ^a (see 5.7.6)	Grid required to prevent from contact with the reflector ^b (see 5.10)
$h \leq 1,3$	6	YES	YES
$1,3 < h \leq 1,6$	10	YES	YES
$1,6 < h \leq 2,0$	15	YES	NO
$h > 2,0$	17	NO	NO

^a The height h to be considered is the height of the lower rim of the working surface from the ground.
^b The height h to be considered is the height of the lower rim of the reflector from the ground.

NOTE For appliances to be fixed on a table the height h is the sum of the heights of the table and the appliance.

5.2 Suitability for various gases

No provision shall be made for adjusting any part of an appliance which has been pre-set by design.

5.3 Materials

The quality and thickness of the materials used for the construction of an appliance shall be such that the performances are not impaired during use.

At the end of the tests of this standard the appliance and its components shall not present any alteration caused by mechanical, chemical and thermal effects. Metal parts shall be effectively protected against corrosion.

Flexibles metallic hoses which are parts of the gas circuit shall comply with EN 16617:2015

Elastomeric material shall comply with EN 549:1994 class A2 minimum and ozone resistant.

The accessible parts during use or service of the appliance, the outer profile and the parts of the appliance with which the flexible hose may be in contact shall be free of sharp corners or edges.

Materials containing asbestos shall not be used.

5.4 Assembly – Sturdiness

The design of the appliance shall be such that under normal operating conditions, maintenance, and transport for movable appliances, no displacement of parts, distortion or damage likely to impair proper operation is detected.

In particular, the appliances for which the height is adjustable shall be fitted with a blocking device of the burner/deflector assembly, which cannot be unintentionally deactivated.

5.5 Stability of the appliance

5.5.1 Wall-mounted and suspended appliances shall be fitted with fixing devices resisting to the effect of their mass.

5.5.2 Movable appliances or appliances intended to be put on the ground or on a table shall not tilt over during the test described in 7.2.1.2 and the cylinder shall not become dislodged during the test.

5.5.3 All the appliances, except those defined in 3.1, shall in addition be fitted with a safety device which shuts off the gas supply to the burner if the appliance is overturned.

5.5.4 In the case of movable wheel- or roller-mounted appliances, locking device shall be provided to prevent accidental displacement of the appliance during normal use.

The locking device, if any, shall not be liable to accidental activation.

5.5.5 The requirements set out in this clause shall be verified under the test conditions described in 7.2.1.

5.6 Gas circuit

The functioning of any safety device shall not be overruled by that of any control device.

Parts which are adjusted at the stage of manufacture and which should not be manipulated by the user shall be appropriately protected.

Holes for screws, lugs, etc., up-stream of the injector ports and intended for assembly of the components shall not lead into spaces specifically intended for the circulation of gas.

Soundness of shut-off devices or threaded elements of the gas circuit shall be ensured by mechanical means (for example, metal seals, O-rings, etc.), i.e. excluding the use of sealing materials in the thread. However, for those parts which do not require dismantling during normal maintenance, for example valves, injectors, the use of suitable sealing materials in the thread conforming with EN 751 standards series shall be acceptable.

Sealing materials according to EN 549:1994 shall not be subject to ageing, nor to any deformation (reduction or increase in volume) likely to impair safety under normal operating conditions.

None of the sealing joints in the gas circuit shall be made by soft soldering or any other process in which the lowest temperature of the melting range is below 450 °C. Parts which can be dismantled shall remain leakproof after dismantling and reassembly, and after possible replacement of the seal if specified in the operating instructions.