



SLOVENSKI STANDARD
SIST EN 461:2001/A1:2004
01-junij-2004

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Specification for dedicated liquefied petroleum gas appliances - Flueless non-domestic space heaters not exceeding 10 kW

Festlegungen für Flüssiggasgeräte - Abzuglose Gewerberaumheizgeräte bis zu 10 kW

ITeh STANDARD PREVIEW

(fonctionnant exclusivement)
Spécifications pour les appareils fonctionnant exclusivement aux gaz de pétrole liquéfiés
- Appareils de chauffage non domestiques non raccordés avec un débit calorifique ne dépassant pas 10 kW

[SIST EN 461:2001/A1:2004](https://standards.iteh.ai/catalog/standards/sist/ea9e232-0c47-4134-8fb2-d16dea6b2e15/sist-en-461-2001-a1-2004)

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Ta slovenski standard je istoveten z: EN 461:1999/A1:2004

ICS:

97.100.20

SIST EN 461:2001/A1:2004

en,fr,de

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ICS 97.100.20

English version

Specification for dedicated liquefied petroleum gas appliances -
Flueless non-domestic space heaters not exceeding 10 kW

Spécifications pour les appareils fonctionnant
exclusivement aux gaz de pétrole liquéfiés - Appareils de
chauffage non domestiques non raccordés avec un débit
calorifique ne dépassant pas 10 kW

Festlegungen für Flüssiggasgeräte - Abzuglose
Gewerberaumheizgeräte bis zu 10 kW

This amendment A1 modifies the European Standard EN 461:1999; it was approved by CEN on 24 December 2003.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This amendment 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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

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Foreword

This document (EN 461:1999/A1:2004) 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 September 2004, and conflicting national standards shall be withdrawn at the latest by September 2004.

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.

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

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1 Scope

Delete the whole clause and replace it with the following:

“This European Standard defines requirements and test methods concerning, in particular, the construction, safety as well as classification and marking of non-domestic flueless space heaters (including greenhouse heaters and diffusive catalytic combustion heaters), having a nominal heat input not exceeding 10 kW (H_v) burning 3rd family gases at nominal operating pressure not exceeding 50 mbar, referred to in the body of the text as 'appliances'.

It covers the following types of appliance:

- a) fixed heaters;
- b) portable or mobile heaters including those that incorporate a compartment for a transportable refillable liquefied petroleum gas cylinder;
- c) heaters intended for use in non domestic areas;
- d) heaters intended solely for outdoor use.

NOTE 1 LPG appliances having a nominal heat input not exceeding 4,2 kW and intended for use in domestic premises are covered by EN 449.

NOTE 2 Overhead radiant heater appliances are covered by EN 416-1.

There are no specific thermal efficiency requirements appropriate to these types of appliances as:

- all the heat produced by the combustion process is released into the space to be heated;
- the requirements with regard to the combustion performance, which is a safety matter, ensure the effective burning of the fuel gas.

This standard does not apply to appliances which incorporate a fan for either the assistance of combustion or the circulation of convected air. Neither does it cover appliances incorporating full sequence automatic controls.

This standard does not apply to appliances for heating buildings used for animals rearing (see EN 12669).

Requirements for appliances given in this standard assume that the supply of gas will be controlled by a pressure regulator giving an outlet pressure as indicated in Table A.1.

Requirements for controls, given herein, relate to controls fitted as part of, or supplied with, particular appliances; they do not necessarily provide a complete specification for controls intended for general use.

NOTE 3 Catalytic heaters are not considered suitable for use in areas having chemicals present which are likely to prevent the correct operation of the catalytic pad.

This standard does not cover cylinders for liquefied petroleum gases or their associated regulators, which shall comply with national requirements in force.

This European Standard only covers type testing.”

2 Normative references

Delete the following references:

EN 161, *Automatic shut-off valves for gas burners and gas appliances.*

prEN 1763-1, *Rubber and plastic tubing and hoses for use with propane and butane in the vapour phase — Part 1: Requirements for rubber, plastic hoses and tubing — Specification.*

3 Terms and definitions

3.34

slip

Delete this definition and replace it with the following:

“3.34

slip

ratio of unburnt fuel gas to total hydrocarbons which have passed through the catalytic pad”

3.43

debit de by pass (French version only)

Delete this definition and replace it with the following:

“3.43

débit de by-pass

débit de gaz à travers le thermostat lorsque le robinet est fermé”

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5.3 Materials

<https://standards.iteh.ai/catalog/standards/sist/ea9e232-0c47-4134-8fb2-d16dea6b2e15/sist-en-461-2001-a1-2004>

Delete the 3rd paragraph and replace it with the following:

“Rubber seals shall be made from materials which comply with EN 549 as appropriate.”

Delete the 4th paragraph.

5.8.1 Mobile and portables appliances

Insert the following paragraph after the 2nd paragraph:

“For appliance to be mounted on a support, which can include wheels, the stability test shall be carried out with the appliance mounted on this support.”

5.9.1 General

In the 3rd paragraph delete the reference to EN 161.

Delete the 2nd sentence in the 8th paragraph and replace it with the following:

“Taps shall be replaceable.”

5.13 Safety devices

Add a new paragraph after the first paragraph:

“Diffusive catalytic combustion heaters shall either be fitted with a low bed temperature cut off device or an atmospheric sensing device. The devices shall carry a permanent mark of identification.”

5.13.2 Low bed temperature cut-off device

Delete the first paragraph.

5.13.3 Atmosphere sensing device

Remove in the first sentence the words:

"appliances intended for the heating of buildings used for the rearing of livestock".

5.13.4 Automatic shut off valves

Delete this clause.

5.21.1 General

Delete the 2nd paragraph and replace it with the following:

“In the event of failure of the ignition device it shall be possible to light the appliance safely by an external source of ignition.”

Delete the 3rd paragraph and replace with the following:

For appliances with a closed combustion chamber the maximum heat input of the main burner during ignition shall not exceed 5 kW (H_g).

Delete the 7th paragraph and replace it with the following:

“When tested in accordance with 6.21 and in a still atmosphere, ignition shall be ensured correctly, i.e. ignition is smooth, flames carry across to all ports, flames do not light back or cause excessive noise and where the burner is enclosed within the appliance, flames do not leave the confines of the appliance. During ignition and operation catalytic panels shall operate without flames leaving the confines of the appliance.”

5.22.5 Conditions of pilot shortening

Delete the first paragraph and replace it with the following:

“On an appliance that incorporates a permanent pilot, that is, one where the control allows the selection of a ‘pilot only’ position, ignition in the cold and hot conditions shall take place and shall not be violent when the pilot is reduced to two-thirds of its nominal rate.”

5.24.1.1 Combustion in a vitiated environment

Delete this sub-title and replace it with the following:

“**Combustion in a vitiated environment for appliances other than those intended solely for outdoor use.**”

5.24.2.2 Combustion in a vitiated environment

Delete this sub-title and replace it with the following:

“Combustion in a vitiated environment for appliances other than those intended solely for outdoor use.”

Add the following new subclause.

“5.24.3 Appliances intended solely for outdoor use

Under the test conditions defined in 6.24.3 the quantity of CO in the air and water vapour free products of combustion shall not exceed 0,20 %.”

6.6.2 Soundness test

Delete the whole clause and replace it with the following:

“The gas-carrying parts are tested successively as follows:

- test No. 1: each valve in the main gas supply is tested in turn for soundness in its closed position, all other valves being open;
- test No. 2: with all taps in the 'on' position, the injectors of burners and ignition burners are temporarily blocked and any shut-off devices (for example the valves of safety devices), where present, are in the open position.

The tests are carried out with the appliance in the cold condition using air. The pressure upstream of the appliance is adjusted to 150 mbar.

The tests are carried out first on delivery of the appliance (taps greased by the manufacturer) and again after the tests with the original components fitted to the appliance i.e. without changing any parts (injectors, ignition burners, etc.).

In case of dispute the equipment shown in Figure 2 shall be used.”

6.13.3 Atmosphere sensing devices

Add the following sentence to the end of the 3rd paragraph:

“Re-inject the sampled gas into the vitiation room during the test.”

6.13.4 Automatic shut off valves

Delete this clause.

6.15 Verification of the heat input

Replace the second paragraph as follows:

“The measurements are made after 15 min of operation (they start at the end of the 15th minute and finished at the end of the 30th minute).”

6.20 Overheating of the LPG cylinder and, where applicable, its compartment

(German version only).

Delete 16.20 and replace with 6.20.

6.22.5 Conditions of pilot shortening

Delete the entire clause and replace it with the following:

“The test to verify the operating characteristics is carried out using the reference gas at normal pressure. The ignition burner gas rate is reduced to the minimum required to maintain the gas supply to the main burner.

The correct ignition of the main burner by the ignition burner is then checked against the requirements of 5.22.5.”

6.24.1.1 Combustion in a vitiated environment

Delete the sub-title and replace it with the following:

“Combustion in a vitiated environment for appliances other than those intended solely for outdoor use.”

6.24.2.2 Combustion in a vitiated environment

Delete the sub-title and replace it with the following:

“Combustion in a vitiated environment for appliances other than those intended solely for outdoor use.”

Add the following new subclause.

“6.24.3 Appliances intended solely for outdoor use

The appliance is supplied with incomplete combustion limit gas at maximum test pressure (see Table 4).

After 15 min of operation at full rate, a sampling device adapted to the shape of the appliance is placed above the burner under test in order to take a representative sample of the combustion gases. The sampling conditions will allow the CO₂ level to be adjusted between 1 % and 4 %.

The test shall be repeated at half nominal rate and at low nominal rate.

The test shall be carried out in all possible configurations of the appliance.

The equipment shall comply with the requirements of 5.24.3.”

6.25.2.1 Diffusive catalytic combustion heaters

Delete the whole paragraph and replace it with the following:

“Supply the appliance at normal pressure either with light back gas, or, for appliances of categories I₃₊, I_{3B/P(30)}, I_{3B/P(50)} and I_{3B}, with a mixture of gas containing at least 90 % of total insaturates.

Subject the appliance to a cycle of fifteen tests each comprising:

- operation at full rate for 8 h;
- extinction for 16 h.

Operate, after this sequence, the appliance for 300 h the taps being in the position corresponding to the full rate.

Operate the appliance then with reference gas at normal pressure for 8 h the taps being in the position corresponding to the full rate.”