

**Vedelgaasiseadmete tehniline kirjeldus.
Veeldatud bensiiniaurude rõhul
töötavad portatiivsed seadmed**

Specifications for dedicated liquefied petroleum gas
appliances - Portable vapour pressure liquefied
petroleum gas appliances

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 521:2006 sisaldab Euroopa standardi EN 521:2006 ingliskeelset teksti.	This Estonian standard EVS-EN 521:2006 consists of the English text of the European standard EN 521:2006.
Käesolev dokument on jõustatud 30.03.2006 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.	This document is endorsed on 30.03.2006 with the notification being published in the official publication of the Estonian national standardisation organisation.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

Käsitlusala: Käesolev standard määrab kindlaks portatiivse, gaasimahutis oleva auru rõhu väljuvate veeldatud bensiiniaurude põletamise seadme konstruktsiooni ja töomadused lähtudes ohutusest ja ratsionaalsest energiakasutusest. Standard määratleb ka katsemeetodid ning nõuded märgistusele ja informatsioonile, mis peab sisalduma juhendis.	Scope: This European Standard specifies the construction and performance characteristics related to safety and the rational use of energy of portable appliances burning liquefied petroleum gases at the vapour pressure within the gas container. It also defines test methods and the requirements for marking and the information to be given in the instructions.
--	--

ICS 27.060.20

Võtmesõnad: gaasivarustus, klassifikatsioonid, märgistus, määratlused, ohutus, seadmestiku tehnilised andmed, surugaasimahutid, survemahutid, tehnilised andmed, tehnilised märkused, teiseldatav seadmestik, testimine, töomaduste hindamine, veeldatud naftagaasid

English Version

Specifications for dedicated liquefied petroleum gas appliances -
Portable vapour pressure liquefied petroleum gas appliances

Spécifications pour les appareils fonctionnant
exclusivement aux gaz de pétrole liquéfiés - Appareils
portatifs alimentés à la pression de vapeur des gaz de
pétrole liquéfiés

Festlegungen für Flüssiggasgeräte - Tragbare, mit
Dampfdruck betriebene Flüssiggasgeräte

This European Standard was approved by CEN on 28 December 2005.

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 Central Secretariat 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 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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents

Page

Foreword	5
1 Scope	6
2 Normative references	7
3 Terms and definitions	7
4 Classification	11
4.1 Classification of gases:	11
4.2 Categories of appliances:	11
5 Safety requirements	12
5.1 General	12
5.2 Conversion to different gases	12
5.3 Materials	12
5.4 Assembly, cleaning and maintenance	12
5.5 Strength and stability	13
5.6 Soundness of the gas circuit assembly	14
5.7 Connections	14
5.8 Transport, fixing and mobility devices	16
5.9 Taps	16
5.10 Control handles	17
5.11 Injectors	18
5.12 Ignition devices	18
5.13 Flame supervision devices	18
5.14 Burners and radiant elements	19
5.15 Grids	19
5.16 Turnspit	19
5.17 Fireguards for heating appliances	20
5.18 Locations and compartments for refillable gas containers	20
5.19 Verification of the heat inputs	21
5.20 Resistance to overheating	21
5.21 Temperature of various parts of the appliance	21
5.22 Temperature of panels (floors, walls or ceilings)	22
5.23 Ignition, crosslighting and flame stability	22
5.24 Resistance to draught	22
5.25 Resistance to liquid spillage	23
5.26 Combustion	23
5.27 Accumulation of un-burnt gas	23
5.28 Safety at high temperature	23
5.29 Sooting - condensation	23
5.30 Rational use of energy	23
6 Test methods	24
6.1 General	24
Table 1 — Characteristics of the test gases	25
Table 2 — Test conditions	26
6.2 Conversion to different gases	26
6.3 Materials	26
6.4 Assembly, cleaning and maintenance	26
6.5 Strength and stability	26
6.6 Soundness of the gas circuit assembly	29
6.7 Connections	29

6.8	Transport, fixing and mobility devices.....	31
6.9	Taps	31
6.10	Control handles.....	31
6.11	Injectors.....	31
6.12	Ignition devices.....	31
6.13	Flame supervision devices	31
6.14	Burners and radiant elements.....	32
6.15	Grids	32
6.16	Turnspit	32
6.17	Fireguards for heating appliances.....	32
6.18	Locations and compartments for refillable gas containers.....	33
6.19	Verification of heat inputs	33
6.20	Resistance to overheating	34
6.21	Temperatures of the various parts of the appliance	35
6.22	Temperature of panels (floor, wall or ceiling).....	36
6.23	Ignition, crosslighting and flame stability.....	36
6.24	Resistance to draught	38
6.25	Resistance to liquid spillage.....	38
6.26	Combustion.....	39
6.27	Accumulation of un-burnt gases	40
6.28	Safety at high temperature.....	40
6.29	Sooting - condensation	41
6.30	Rational use of energy.....	41
	Table 3 — Vessel diameter and mass of water relative to the burner heat input.....	41
7	Marking	43
7.1	Appliance marking.....	43
7.2	Packaging marking	43
8	Instructions for use, maintenance and assembly	43
	Figure 1 — Cross section of a valve with centre boss	46
	Figure 2 — Adaptor	47
	Figure 3 — Tolerances of valve and adaptor threads	48
	Figure 4 — Relative dimensions of the opening of the valve by the adaptor	49
	Figure 5 — Tolerance on rate	50
	Figure 6 — Apparatus for the test of resistance to thermal shock.....	50
	Figure 7 — Test clamp.....	51
	Figure 8 — Test probe	52
	Figure 9 — Verification of the combustion of individual hotplate burners - Sampling device	53
	Figure 10 — Verification of the combustion of all burners - Sampling device	54
	Annex A (normative) Characteristics of test vessels (see 6.5.2.3).....	55
	Figure A.A1	55
	Table A.A1 — Characteristics of pans necessary for testing.....	56
	Annex B (normative) Tests on needle valves (see 6.9).....	57
B.1	Resistance to temperature	57
B.2	Endurance	58
	Annex C (informative) Examples of authorized solutions	59
	Figure C.C1	59
	Figure C.C2 Figure C.C3.....	60
	Figure C.C4 Figure C.C5.....	61

Figure C.C6 Figure C.C7	62
Annex ZA (informative) Clauses of this European Standard addressing essential requirements or other provisions of EU Directive.....	63
Table ZA.1.....	63
Bibliography	66

Foreword

This European Standard (EN 521:2006) 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 August 2006, and conflicting national standards shall be withdrawn at the latest by August 2006.

This European Standard supersedes EN 521:1998.

This European Standard 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.

This European Standard only applies to type testing.

In 2001 the Netherlands raised a formal objection in respect of 5.7.2.1 "appliances fitted to pierceable cartridges" of standard EN 521:1998, on the grounds that it does not fully satisfy the essential requirements of Directive 90/396/EEC.

The decision of the commission was that the standard EN 521:1998 shall continue to confer the presumption of conformity to the relevant provisions of Directive 90/396/EEC.

At the same time, the European mandate M/327 was created, with the aim of taking into account the risks emerged by the particular condition of the replacement of the gas cartridge in portable (camping) gas appliances, in order to improve the intrinsic level of safety with regards to the replacement of the cartridge. The revision of this European Standard is an answer to this mandate M/327.

In the view of answering to this mandate, CEN/TC 181/WG 4 carried out a study on the pierceable appliances, whose conclusions are integrated in this European Standard. The modifications brought to this European Standard are focused on 5.7.2.1, and are the answer to the mandate M/327.

A new informative annex (Annex C) is also included, and supplements the changes brought to paragraph 5.7.2.1. It gives examples of authorized solutions, which specify the connecting requirements regarding the replacement of pierceable cartridges.

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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

1 Scope

This European Standard specifies the construction and performance characteristics related to safety and the rational use of energy of portable appliances burning liquefied petroleum gases at the vapour pressure within the gas container. It also defines test methods and the requirements for marking and the information to be given in the instructions.

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

This European Standard applies to various types of portable appliances burning liquefied petroleum gases at vapour pressure and designed to be used with (non refillable) cartridges as complying with EN 417 or any types of gas cylinders other than cartridges. For example the following types of appliances are covered:

a) cooking appliances (hotplates, grills, barbecues...).

This European Standard does not cover barbecues that can be used indoors;

b) lighting appliances;

c) heating appliances.

This European Standard only applies to appliances with a maximum heat input of up to 3 kW (H_g) for outdoor use only;

d) blowlamps.

This European Standard only applies to blowlamps without a flexible hose;

e) laboratory burners.

The requirements apply to these appliances or their functional sections whether or not the latter are independent or incorporated into an assembly.

This European Standard only applies to type examination.

Appliances covered by this European Standard are not connected to a flue for the discharge of products of combustion and are not connected to the mains electricity supply.

This European Standard covers neither appliances supplied with LPG in the liquid phase nor those incorporating a fixed gas reservoir which may or may not be refilled by the user. This European Standard does not cover gas containers or flexible hose.

It does not apply to smokers' lighters covered by EN ISO 9994.

Requirements for rational use of energy have been included for hotplate burners.

However, such requirements have not been included for the other types of appliances because:

- for grills and barbecues, this is a type of cooking which is achieved by various means such as radiant elements; in addition this type of cooking varies according to the type of food and region where the appliance is used;
- for lighting appliances, the consumption is insignificant because these appliances have a very low rate and are used only for a few hours in a year;
- for heating appliances, all the heat produced is discharged into the environment;

- for tools such as blowtorches which are not professional tools in regular use, the gas consumption depends very much on the way it is used.

2 Normative references

The following referenced documents are indispensable for the application of this European Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 30-1-1, *Domestic cooking appliances burning gas fuel — Part 1-1: Safety — General*

EN 125, *Flame supervision devices for gas burning appliances — Thermo-electric flame supervision devices*

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

EN 60335-1:2002, *Household and similar electrical appliances — Safety — Part 1: General requirements (IEC 60335-1:2001, modified)*

ISO 301, *Zinc alloy ingots intended for casting*

3 Terms and definitions

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

3.1

cooking device

devices supplied with the appliance designed to hold or receive the food to be cooked

NOTE grid, turnspit, baking tray etc.

3.2

detachable

possible to dismantle without using a tool

3.3

vapour pressure appliance

pressure at the inlet of the appliance is equal to the pressure in the gas container.

If the appliance is fixed directly to the gas cylinder by a rigid connection, the appliance inlet is the part of the connection that takes the gas from the cylinder. A pressure reducing device may be incorporated in the gas circuit, between the gas inlet and the injector.

If the appliance is connected to the gas container by a flexible hose, the pressure in the flexible hose once it is connected to the gas container is equal to the pressure in the gas container. A pressure reducing device may be incorporated in the gas circuit downstream of the flexible hose

3.4

appliance with fixed integral container

appliance incorporating a gas container which is not intended to be disconnected for refilling

NOTE See Clause 1

3.5

auxiliary equipment

control and device that can affect the safety of operation of a gas appliance