



**SLOVENSKI STANDARD**  
**SIST EN 437:1997/A1:1997**  
**01-avgust-1997**

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**Preskusni plini - Preskusni tlaki - Kategorije aparatov - Dopolnilo A1**

Test gases - Test pressures - Appliance categories

Prüfgase - Prüfdrücke - Gerätekategorien

Gaz d'essais - Pressions d'essais - Catégories d'appareils

**Ta slovenski standard je istoveten z: EN 437:1993/A1:1997**

[SIST EN 437:1997/A1:1997](https://standards.iteh.ai/catalog/standards/sist/91d160c2-2f44-456d-a3da-2a63f53a72c8/sist-en-437-1997-a1-1997)

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**ICS:**

27.060.20	Plinski gorilniki	Gas fuel burners
91.140.40	Sistemi za oskrbo s plinom	Gas supply systems

**SIST EN 437:1997/A1:1997**                      **en**

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EUROPEAN STANDARD

EN 437:1993/A1

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 1997

ICS 91.140.20; 91.140.60; 97.040.20

Descriptors: gas appliances, categories, classifications, gases, pressure, tests, definitions, characteristics  
d'appareils

English version

**Test gases - Test pressures - Appliance categories**Gaz d'essais - Pressions d'essais - Catégories  
d'appareils

Prüfgase - Prüfdrücke - Gerätekategorien

**ITEH STANDARD PREVIEW**  
(standards.iteh.ai)<https://standards.iteh.ai/standards/SIEN/EN/437:1993/A1/1997>REPUBLIKA SLOVENIJA  
MINISTRSTVO ZA ZNANOST IN TEHNOLOGIJO  
Urad RS za standardizacijo in meroslovje  
LJUBLJANA

SIST..... EN 437/A1 .....

PREVZET PO METODI RAZGLASITVE

-08- 1997

This amendment 1 modifies the European Standard EN 437:1993. This amendment was approved by CEN on 1996-11-14. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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.

The European Standards exist 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, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

**CEN**European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

## Foreword

This Amendment EN 437:1993/A1:1996 to EN 437:1993 has been prepared by Technical Committee CEN/TC 238 "Test gases, test pressures and categories of appliances", the secretariat of which is held by AFNOR.

This Amendment to the European Standard EN 437:1993 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 1997, and conflicting national standards shall be withdrawn at the latest by July 1997.

This Amendment to the European Standard EN 437:1993 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).

NOTE : The symbol \* placed in the margin opposite a clause or a paragraph means that the modification is a correction to the original text of EN 437 : 1993 which applies only to this language version of EN 437/A1.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this Amendment: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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**\* Foreword**

In the 9th paragraph add : "...Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden".

**\*1 Scope**

All the text after the note is part of that note.

Replace second paragraph of the note, third indent " - appliances in which the final design is determined by the user". with " - appliances in which the final design is influenced by the user".

**2 Normative references**

Replace the following :

"ISO/DIS 6976 : 1992 Natural gas - Calculation of calorific value, density, relative density and Wobbe index from composition (Revision of ISO 6976:1983)"

with

"ISO 6976 : 1995 Natural gas - Calculation of calorific value, density, relative density and Wobbe index from composition (Revision of ISO 6976:1983)".

**3.11 calorific value**

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In the first paragraph replace "The quantity of heat produced by the combustion..." by : "The quantity of heat produced by the complete combustion...".

Replace the following :

"Units : either:  
- megajoules per cubic metre (MJ/m<sup>3</sup>) of dry gas at the reference conditions, or  
- megajoules per kilogram (MJ/kg) of dry gas."

with

"Unit : either:  
- megajoule per cubic metre (MJ/m<sup>3</sup>) of dry gas at the reference conditions, or  
- megajoule per kilogram (MJ/kg) of dry gas."

**3.12 wobbe index**

Replace the following :

"Unit : either:  
- megajoules per cubic metre (MJ/m<sup>3</sup>) of dry gas at the reference conditions, or  
- megajoules per kilogram (MJ/kg) of dry gas."

with

"Unit : either:  
- megajoule per cubic metre (MJ/m<sup>3</sup>) of dry gas at the reference conditions, or  
- megajoule per kilogram (MJ/kg) of dry gas."

**3.15 mass flow rate**

Replace the following :

"Unit : kilograms per hour (kg/h), or grams per hour (g/h)."

with

"Unit : kilogram per hour (kg/h), or gram per hour (g/h)."

Delete the 3.16 and replace it with the following :

### 3.16 volume flow rate

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

Symbol : V

Unit : cubic metre per hour (m<sup>3</sup>/h), litre per minute (l/min), cubic decimetre per hour (dm<sup>3</sup>/h) or cubic decimetre per second (dm<sup>3</sup>/s).

## 4.2 Characteristic of the test gases

Replace the second paragraph :

"The values in tables 2, 3, and 4, measured and expressed at 15 °C, are derived from ISO/DIS 6976 : 1992."

with

"The values in tables 2, 3, and 4, measured and expressed at 15 °C, are derived from ISO 6976 : 1995."

### Table 2 : Characteristics of the test gases <sup>1)</sup> Gas dry at 15°C and 1013,25 mbar

Add a reference to note 2) in the subtitle for "gases of the second family".

Add a reference to a note 5) in the column for the composition volume. Add the following footnote to the table :

5) See also Annex A.

\*Table 2 : replace column the "composition volume" with "composition by volume"

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### Table 5 : Characteristics of the reference gases at 0 °C, 1 013,25 mbar

Replace the title of the table 5 :

"Characteristics of the reference gases at 0 °C, 1 013,25 mbar".

with

"Characteristics of the reference gases of the second family at 0 °C, 1 013,25 mbar".

### Table 7 : Test pressures where a pressure couple exists

Delete the footnote 2) in the column  $p_{\min}$  which refers to line : 2nd family 2<sub>E+</sub> and test gas: G 20, G21 and G 222.

## 6.1.1 General

Add the following after the last paragraph :

"NOTE : see also Annex C : "Guidelines for extension to other categories".

**Table B.1.1 Single categories marketed**

Place a cross "X" for France in columns "I<sub>2H</sub>" and "I<sub>2L</sub>" with a reference to a note 2) worded as follows :

"2) Categories applicable only to certain types of appliance, submitted to the on site EC verification procedure ; Annex II, article 6 of the Gas Appliance Directive (90/396/EEC)".

Place a cross "X" for Luxembourg in column "I<sub>2E</sub>".

Place a cross "X" for Netherlands in column "I<sub>2H</sub>" with a reference to a note 2).

Place a cross "X" for Spain in column "I<sub>3B</sub>".

**Table B.1.2 Double categories marketed**

Place a cross "X" for France in columns "II<sub>2H3P</sub>" and "II<sub>2L3P</sub>" with a reference to a note 2) worded as follows :

"2) Categories applicable only to certain types of appliance, submitted to the on site EC verification procedure ; Annex II, article 6 of the Gas Appliance Directive (90/396/EEC)".

Place a cross "X" for Spain in column "II<sub>2E+3+</sub>".

**Table B.2 Normal supply pressures**

Place a cross "X" for Spain in column "G 30, 30 28-30 mbar".

Place a cross "X" for Luxembourg in column "G 20".

Place a cross "X" for Belgium in column "G 31, 37 mbar".

Place a cross "X" for Belgium in column "G 31, 50 mbar" with a reference to a note 2).

Delete the cross "X" for Germany in column "G 110".

Add a reference to note 2) for Spain in column "G 31, 50 mbar".

Delete Annex B.3.1 and replace it with the following :

**B.3.1** The national or local conditions of gas distribution (gas composition and supply pressures) lead to the definition of the special categories of B.3.2 that are marketed nationally or locally in certain countries. Table B.3 gives these categories for each country together with the corresponding test gases. Table B.4 gives the characteristics of these test gases and the corresponding test pressures.

Table B.3 : Test gases corresponding to categories marketed nationally or locally

Category	Reference gas	Incomplete combustion limit gas	Light back limit gas	Lift limit gas	Sooting limit gas	Country
I <sub>2Esi</sub> <sup>1)</sup>	G 20, G 25	G 21	G 222	G 231	G 21	France
I <sub>2Er</sub> <sup>1)</sup>	G 20, G 25	G 21	G 222	G 231	G 21	France
I <sub>2E(S)B</sub>	G 20	G 21	G 222	G 231	G 21	Belgium
I <sub>2E(R)B</sub>	G 20	G 21	G 222	G 231	G 21	Belgium
I <sub>2ELL</sub>	G 20, G 25	G 21	G 222	G 231, G 271	G 21	Germany
II <sub>1c2E+</sub>	G 130, G 20	G 21	G 132, G 222	G 231	G 21	France
II <sub>1c2Esi</sub> <sup>1)</sup>	G 130, G 20 G 25	G 21	G 132, G 222	G 231	G 21	France
II <sub>1c2Er</sub> <sup>1)</sup>	G 130, G 20 G 25	G 21	G 132, G 222	G 231	G 21	France
II <sub>2Esi3+</sub> <sup>1)</sup> II <sub>2Er3+</sub> <sup>1)</sup>	G 20, G 25, G 30	G 21	G 222, G 32	G 231, G 31	G 30	France
II <sub>2Esi3P</sub> <sup>1)</sup> II <sub>2Er3P</sub> <sup>1)</sup>	G 20, G 25, G 31	G 21	G 222, G 32	G 231, G 31	G 31, G 32	France
II <sub>2ELL3B/P</sub>	G 20, G 25, G 30	G 21, G 30	G 222, G 32	G 231, G 271	G 30	Germany
III <sub>1a2H3+</sub>	G 110; G 20, G 30	G 21	G 112, G 222, G 32	G 23, G 31	G 30	Italy
III <sub>1a2H3B/P</sub>	G 110, G 20, G 30	G 21	G 112, G 222, G 32	G 23, G 31	G 30	Denmark
III <sub>1c2E+3+</sub>	G 130, G 20, G 30	G 21	G 132, G 222, G 32	G 231, G 31	G 30	France
III <sub>1c2E+3P</sub>	G 130, G 20, G 31	G 21	G 132, G 222, G 32	G 231, G 31	G 32	France
III <sub>1c2Esi3+</sub>	G 130, G 20, G 25, G 30	G 21	G 132, G 222, G 32	G 231, G 31	G 30	France
III <sub>1c2Esi3P</sub>	G 130, G 20, G 25, G 31	G 21	G 132, G 222, G 32	G 231, G 31	G 32	France
III <sub>1c2Er3+</sub>	G 130, G 20, G 25, G 30	G 21	G 132, G 222, G 32	G 231, G 31	G 30	France
III <sub>1c2Er3P</sub>	G 130, G 20, G 25, G 31	G 21	G 132, G 222, G 32	G 231, G 31	G 32	France

(continued)



Table B.3 (concluded)

Category	Reference gas	Incomplete combustion limit gas	Light back limit gas	Lift limit gas	Sooting limit gas	Country
III <sub>1ab2H3B/P</sub>	G 110, G 120, G 20, G 30	G 21	G 112, G 222, G 32	G 23, G 31	G 30	Sweden
III <sub>1ce2H3+</sub>	G 130, G 150, G 20, G 30	G 21	G 132, G 152, G 222, G 32	G 23, G 31	G 30	Spain
III <sub>1ace2H3+</sub>	G 110, G 130, G 150, G 20, G 30	G 21	G 112, G 222, G 32	G 23, G 31	G 30	Spain

1) Categories applicable only to certain types of appliance, specified in the individual standards.

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