



# SLOVENSKI STANDARD

## oSIST prEN 1-2:2023

01-september-2023

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**Grelne naprave na tekoča goriva za stanovanjske stavbe - 2. del: Peči za ogrevanje na tekoča goriva z uparjalnimi gorilniki in priključkom na dimnik**

Residential liquid fuel burning appliances - Part 2: Flued oil stoves with vaporizing burners

Häusliche Feuerstätten für flüssige Brennstoffe - Teil 2: Ölöfen mit Verdampfungsbrenner und Schornsteinanschluss

Équipement de chauffage domestique à combustible liquide - Partie 2 : Poêles à huile avec brûleurs à vaporisation et conduit de cheminée

**Ta slovenski standard je istoveten z: prEN 1-2**

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**ICS:**

97.100.40      Grelniki na tekoče gorivo      Liquid fuel heaters

**oSIST prEN 1-2:2023**

**en,fr,de**



EUROPEAN STANDARD  
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English Version

## Residential liquid fuel burning appliances - Part 2: Flued oil stoves with vaporizing burners

Équipement de chauffage domestique à combustible  
liquide - Partie 2 : Poêles à huile avec brûleurs à  
vaporisation et conduit de cheminée

Häusliche Feuerstätten für flüssige Brennstoffe - Teil 2:  
Ölöfen mit Verdampfungsbrenner und  
Schornsteinanschluss

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 46.

If this draft becomes a European Standard, 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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## iTeh STANDARD PREVIEW (standards.iteh.ai)

[oSIST prEN 1-2:2023](https://standards.iteh.ai/catalog/standards/sist/0e67c482-e0b0-425d-ab2b-f2976783d7bb/osist-pren-1-2-2023)

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**prEN 1-2:2023 (E)****European foreword**

This document (prEN 1-2:2023) has been prepared by Technical Committee CEN/TC 46 “Fireplaces for liquid fuels”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 1:1998 and EN 1:1998/A1:2007.

In relation to EN 1:1998 and EN 1:1998/A1:2007, the following technical changes have been made:

- completely revised according to the requirements of M/577;
- energy efficiency and energy class labelling and seasonal space heating efficiency added;
- requirements for environmental sustainability added.

This document has been prepared under a standardization request given to CEN by the European Commission and the European Free Trade Association.

For relationship with EU Regulation 305/2011 see informative Annex ZA, which is an integral part of this document.

The structure of EN 1, Residential liquid fuel burning appliances, is as follows:

- Part 1: *General requirements and test methods*;
- Part 2: *Flued oil stoves with vaporizing burners*;
- Part 3: *Flued oil stoves with vaporizing burners and boiler*;
- Part 4: *Flued ethanol stoves*.

## 1 Scope

This document is applicable to oil stoves. These appliances have one or more vaporizing burners and a nominal heating capacity of not more than 15 kW and are equipped either with a draught regulator or a combustion air limiter.

The intended use of the appliances is space heating in residential buildings.

This document is also applicable to appliances with fan assisted vaporizing burners.

According to the type of fuels used in the country of destination, the appliances are supplied for use with either:

- fuel oil with a maximum kinematic viscosity of 6,0 mm<sup>2</sup>/s at 20 °C;
- or kerosene with a flash point of not less than 40 °C.

This document is not applicable for:

- built-in appliances;
- appliances equipped with an atomizing burner;
- appliances incorporating a boiler or connected to a water system.

This document specifies procedures for assessment and verification of constancy of performance (AVCP) of characteristics of flued oil stoves with vaporizing burners.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

prEN 1-1:2023, *Residential liquid fuel burning appliances — Part 1: General requirements and test methods*

EN 15804:2012+A2:2019, *Sustainability of construction works — Environmental product declarations — Core rules for the product category of construction products*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in prEN 1-1:2023 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

## 4 Characteristics

### 4.1 Protection of combustible materials

The performance of the appliance in relation to protection of combustible materials shall be determined in accordance with prEN 1-1:2023, 5.8.

**prEN 1-2:2023 (E)**

When tested in accordance with prEN 1-1:2023, A.7.2, the protection measure(s) as specified according to Table 1 shall be given as minimum distance to combustible materials and if appropriate as material type and thickness of protective insulation material.

The protection measures as specified shall be given in [mm] as an integer.

**Table 1 — Protection of combustible materials**

<b>Protection measure</b>	<b>Declared clearance distance to combustible material or thickness of protective insulation material</b> [mm]	<b>Protective insulation material if any</b>
Minimum distance to combustibles – floor		-
Minimum distance to combustibles – walls (side/rear)		-
Protective insulation material (s)		

#### 4.2 Carbon monoxide emission (CO)

The performance of the appliance in relation to carbon monoxide emission at nominal heat output and at part load heat output (if part load is specified) shall be determined in accordance with prEN 1-1:2023, 5.12.3.

The CO value if specified at nominal heat output and at part load heat output (if part load is specified) is to be given in [mg/MJ] as an integer.

#### 4.3 Nitrogen oxides (NO<sub>x</sub>) emissions

The performance of the appliance in relation to nitrogen oxides emissions at nominal heat output and at part load heat output (if part load is specified) shall be determined in accordance with prEN 1-1:2023, 5.12.4.

The NO<sub>x</sub> value if specified at nominal heat output and at part load heat output (if part load is specified) is to be given in [mg/kWh<sub>input</sub>] as an integer.

When tested in accordance with prEN 1-1:2023, A.7.2.1 the NO<sub>x</sub> emissions at nominal heat output shall not exceed the threshold level as given in Table 2.

**Table 2 — Threshold levels for NO<sub>x</sub> emission (expressed as NO<sub>2</sub>)**

<b>Appliance type</b>	<b>Threshold level at 13 % O<sub>2</sub></b>
closed fronted liquid fuel local space heaters	130 mg/kWh <sub>input</sub>

NOTE 1 mg/MJ corresponds to 3,6 mg/kWh.



#### 4.4 Emission of organic gaseous compounds (OGC)

The performance of the appliance in relation to organic gaseous compounds emission at nominal heat output and at part load heat output (if part load is specified) shall be determined in accordance with prEN 1-1:2023, 5.12.5.

The OGC value if specified at nominal heat output and at part load heat output (if part load is specified) is to be given in [mg/MJ] as an integer.

#### 4.5 Smoke number

The performance of the appliance in relation to the smoke number at nominal heat output and at part load heat output (if part load is specified) shall be determined in accordance with prEN 1-1:2023, 5.12.2.

The smoke number if specified at nominal heat output and at part load heat output (if part load is specified) is to be given as an integer.

#### 4.6 Safety and accessibility in use

##### 4.6.1 General

The data for the installation to a chimney are to be evaluated at nominal heat output. Specific data are to be evaluated at safety test heat output. Additional data are to be evaluated at part load heat output, if part load is specified.

##### 4.6.2 Flue gas outlet temperature at nominal heat output

The performance of the appliance in relation to flue gas outlet temperature at nominal heat output shall be determined in accordance with prEN 1-1:2023, 5.6.

The value of the flue gas outlet temperature for the installation of the appliance to a chimney if specified is to be given in [°C] as an integer.

##### 4.6.3 Flue gas outlet temperature at part load heat output

The performance of the appliance in relation to flue gas outlet temperature at part load heat output (if part load is specified) shall be determined in accordance with prEN 1-1:2023, 5.6.

The value of the flue gas outlet temperature at part load heat output (if part load is specified) for the installation of the appliance to a chimney if specified is to be given in [°C] as an integer.

##### 4.6.4 Minimum flue draught at nominal heat output

The performance of the appliance in relation to the minimum flue draught at nominal heat output shall be determined in accordance with prEN 1-1:2023, 5.13.

The value of the minimum flue draught if specified at nominal heat output for the installation of the appliance to a chimney is to be given in [Pa] as an integer.

##### 4.6.5 Minimum flue draught at part load heat output

The performance of the appliance in relation to the minimum flue draught at part load heat output (if part load is specified) shall be determined in accordance with prEN 1-1:2023, 5.13.

The minimum value of the flue draught if specified at part load heat output (if part load is specified) for the installation of the appliance to a chimney is to be given in [Pa] as an integer.

##### 4.6.6 Flue gas mass flow at nominal heat output

The performance of the appliance in relation to the flue gas mass flow at nominal heat output shall be determined in accordance with prEN 1-1:2023, 5.14.

**prEN 1-2:2023 (E)**

The flue gas mass flow value if specified at nominal heat output for the installation of the appliance to a chimney is to be given in [g/s] with 1 decimal.

**4.6.7 Flue gas mass flow at part load heat output**

The performance of the appliance in relation to the flue gas mass flow at part load heat output (if part load is specified) shall be determined in accordance with prEN 1-1:2023, 5.14.

The flue gas mass flow value if specified at part load heat output (if part load is specified) for the installation of the appliance to a chimney is to be given in [g/s] with 1 decimal.

**4.6.8 Fire safety of installation to the chimney**

The performance of the appliance in relation to the flue gas temperature (mean value) at safety test shall be determined in accordance with prEN 1-1:2023, A.7.2.1.

**4.7 Energy economy and heat retention****4.7.1 Space heat output at nominal heat output**

The performance of the appliance in relation to space heat output at nominal heat output shall be determined in accordance with prEN 1-1:2023, 5.15.

The space heat output of the appliance if specified at nominal heat output is to be given in [kW] with 1 decimal.

For the proper performance of the appliance the following shall be considered as well for those essential characteristics and descriptive features assessed during the nominal heat output test prEN 1-1:2023, A.7.2.1.

Additional devices, such as filters, oil regulators, safety devices, fans for the supply of combustion air, fuel lines, storage tanks, oil level indicators, drip trays, flue gas outlet components, draught regulators and combustion air limiters and automatic burners for the safety or function of the appliance may be present.

Some of these devices are optional, but if present their influence on the performance of the appliance shall be checked according to prEN 1-1:2023, 4.4, 4.5, 4.7, 4.8, 4.9, 4.10, 4.11, 4.12, 4.13, 4.15 and 4.18.

**4.7.2 Water heat output, if existing at nominal heat output**

The performance of the appliance in relation to water heat output if existing at nominal heat output is according to the scope not applicable as this document does not apply to appliances with water-bearing parts or connection to a water system.

**4.7.3 Efficiency at nominal heat output**

The performance of the appliance in relation to efficiency at nominal heat output shall be determined in accordance with prEN 1-1:2023, 5.4.

The efficiency of the appliance if specified at nominal heat output is to be given in [%] as an integer.

**4.7.4 Space heat output at part load heat output**

The performance of the appliance in relation to space heat output at part load heat output (if part load is specified) shall be determined in accordance with prEN 1-1:2023, 5.15.

The space heat output of the appliance if specified at part load heat output (if part load is specified) is to be given in [kW] with 1 decimal.

For the proper performance of the appliance the following shall be considered as well for those essential characteristics and descriptive features assessed during the part load heat output test prEN 1-1:2023, A.7.2.2.

Additional devices, such as filters, oil regulators, safety devices, fans for the supply of combustion air, fuel lines, storage tanks, oil level indicators, drip trays, flue gas outlet components, draught regulators and combustion air limiters and automatic burners for the safety or function of the appliance may be present.

Some of these devices are optional, but if present their influence on the performance of the appliance shall be checked according to prEN 1-1:2023, 4.4, 4.5, 4.7, 4.8, 4.9, 4.10, 4.11, 4.12, 4.13, 4.15 and 4.18.

#### 4.7.5 Water heat output, if existing at part load heat output

The performance of the appliance in relation to water heat output if existing at part load heat output is according to the scope not applicable as this document does not apply to appliances with water-bearing parts or connection to a water system.

#### 4.7.6 Efficiency at part load heat output

The performance of the appliance in relation to efficiency at part load heat output (if part load is specified) shall be determined in accordance with prEN 1-1:2023, 5.4.

The efficiency of the appliance if specified at part load heat output (if part load is specified) is to be given in [%] as an integer.

#### 4.7.7 Seasonal space heating efficiency at appliance's nominal heat output

The performance of the appliance in relation to seasonal space heating efficiency at nominal heat output shall be determined in accordance with prEN 1-1:2023, 5.4.2.

The seasonal space heating efficiency of the appliance if specified at nominal heat output is to be given in [%] as an integer.

When tested in accordance with prEN 1-1:2023, 5.4.2 the seasonal space heating efficiency at nominal heat output shall not underrun the threshold levels as given in Table 3.

**Table 3 — Threshold level of seasonal space heating energy efficiency**

Appliance type	Threshold level
closed fronted liquid fuel local space heaters	72 %

#### 4.7.8 Energy efficiency

The performance of the appliance in relation to energy efficiency classification shall be determined in accordance with prEN 1-1:2023, 5.4.3 and 5.4.4.

The energy efficiency classification of the appliance if specified shall be determined according to Table 4.