SLOVENSKI STANDARD
oSIST prEN 16647:2013

01-november-2013

Kamini na tekoča goriva - Dekorativne naprave, ki proizvajajo plamen z gorivom na osnovi alkohola ali želatinastega goriva - Uporaba v zasebnih gospodinjstvih

Fireplaces for liquid fuels - Decorative appliances producing a flame using alcohol based or gelatinous fuel - Use in private households

Feuerstellen für flüssige Brennstoffe - Dekorative Geräte, die unter Verwendung eines Alkohol basierten flüssigen oder gelförmigen Brennstoffes eine Flamme erzeugen - Nutzung im privaten Haushaltbereich

Foyers pour combustibles liquides - Appareils décoratifs produisant une flamme à l'aide de combustible à base d'alcool ou de carburant gélatineux - Utilisation domestique

Ta slovenski standard je istoveten z: **prEN 16647**

ICS:

97.100.99	Grelniki, ki uporabljajo druge vire energije	Heaters using other sources of energy

oSIST prEN 16647:2013 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

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ICS 97.100.99

English Version

Fireplaces for liquid fuels - Decorative appliances producing a flame using alcohol based or gelatinous fuel - Use in private households

Foyers pour combustibles liquides - Appareils décoratifs produisant une flamme à l'aide de combustible à base d'alcool ou de carburant gélatineux - Utilisation domestique

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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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (prEN 16647:2013) 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 defines the requirements for the construction and operating methods, the operation tests, as well as for the production, labelling and the instruction manuals of decorative fireplaces/appliances producing a flame using liquid or gelatinous alcohol based fuels.

This document contains definitions regarding the technical safety of the appliances.

The requirements listed in the document refer to appliances which are ready for use only. Single components - like simple burner cups – are not considered herein (and are not considered safe when used on their own).

1 Scope

This document applies for decorative fireplaces/appliances for domestic use, producing a flame using alcohol, hereafter referred to as fuel, in liquid or gelatinous fuel for decoration.

NOTE The requirements are strictly applied even when used in other areas. Outside the private household and outdoor area can apply more or different rules on the use of the appliances.

This document applies to free-standing, wall-mounted and built-in appliances with a maximum power output of 4.5 kW.

This document applies for appliances ready for use, whose burner is of one unit or are an integral component of the appliances but not for appliances with a separate fuel tank.

This document does not apply for appliances for heating or keeping food warm (rechauds), as well as for appliances for use in boats, caravans and other vehicles.

This document does not apply for appliances with a heat output higher than 4.5 kW.

2 Normative references

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 1023-3, *Office furniture – Screens/Room Dividers - Part 3: Test methods*;

EN 1860-1, *Appliances, solid fuels and fire lighters for barbecueing - Part 1: Barbecues burning solid fuels, requirements and test methods;*

EN 13240, *Roomheaters fired by solid fuel - Requirements and test methods;*

EN 13501-1:2009, *Fire classification of construction products and building elements - Part 1: Classification using test data from reaction to fire tests*

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

EN 60335-2-102, *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)

ISO 2859 (all parts*), Acceptance sampling inspection against the number of defective units or defects (attribute test)*

3 Terms and definitions

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

3.1
appliance which is ready for use
one unit comprising a burner and housing which are supplied ready for use by the manufacturer or a burner which is ready to be built into a setting as per the manufacturer's instructions

3.2
area of flame impingement
area which could to be touched by the flame under normal operating conditions

3.3
body
unit comprising walls, base and covers made of non-combustible or thermally protected materials which encase the burner and within which the combustion takes place

3.4
burner
unit comprising at least safety chamber and the burner opening

3.5
burner opening
opening in the burner at which the combustion of the fuel-air mixture takes place

3.6
containment / Safety Chamber
container in which the fuel storage tank is located. It is used exclusively in order to contain excess, overfilled fuel

3.7
decorative fireplaces fuelled by fuel and gelatinous fuel
appliance which is fuelled with liquid fuel and/or gelatinous fuel and used for decorative purposes

3.8
fixed appliance
appliance designed to be permanently fixed to the fabric of the building

3.9
free standing appliance
appliance not designed to be permanently fixed to the fabric of the building and not provided with helping devices for moving

3.10
Fuel
alcohol derivate

3.11
filling material
material inside of the burner

3.12
fuel storage tank
container part of the appliance, from which the fuel is fed to the burner

3.13
gelatinous fuel
combustible paste based on alcohol at least 95 % of denaturated volume, as well as gelling agent

3.14
minimum burner adjustment
burner setting at lowest fuel consumption

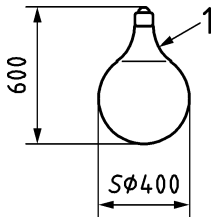
3.15
ignition device
device for ignition of the burner

3.16
maximum burner adjustment
burner setting at highest fuel consumption

3.17
non-combustible material
material classified A2-s1d0 by EN 13501-1:2009

3.18
sandbag

Dimensions in millimetres



Key

1 Leather case

Figure 1 — Example sandbag (identical to EN 1860-1)

3.19
separate tank
tank containing fuel without a burner, separate from the appliance

3.20
stationary state
state reached when the temperature in the area which could be touched by the flame under normal operating conditions does not fluctuate for more than ± 5 K in 5 min or after 30 min of burning at maximum power

3.21
tabletop appliance
appliance which is placed exclusively on furniture, wall shelves etc. in accordance with the manufacturer's definition and not in the walkable area within a room

3.22
test weight
system with two weights of 30 kg each connected with a rope; the two weights must be suspended

4 Construction

4.1 General

The appliance has to be produced in such a way as to

— rule out any kind of permanent deformations or other damages on the appliance after testing,

— withstand any tensions occurring during normal use,

— facilitate being operated safely.

4.2 Fuel Volume

The maximum burner volume shall not exceed 3 litres. The total fuel capacity of the appliance shall not exceed 10 litres.

NOTE national or regional legislation might impose lower maximum storage limits

4.3 Construction

The appliance has to feature an easy-to-use closing mechanism (in order to extinguish the flames). This mechanism shall work reliably and safely also if the appliance is in use – if required by means of auxiliary tools that must be provided by the manufacturer.

Furthermore, the design of the construction has to ensure

— the fuel storage tank must have continues seams,

— that replaceable parts or parts necessary for assembly on site cannot be fitted incorrectly,

— that all parts used for operation and/or maintenance of the appliance are free from sharp edges which could constitute a safety hazard for the user,

— an extinguishing device fulfilling the point 5.6 requirement.

4.4 Materials

The materials used for construction must have an adequate resistance to corrosion[1].

NOTE when stainless steel is used, chrome-nickel steel 1.4301 or steel of a better quality has to be used for construction

Asbestos and Cadmium containing hard soldering flux must not be used in any components of the appliance. Any insulation material must be non-combustible (A2s1d0 class, EN 13501-1:2009) and its application must not pose any threat to health and safety.

It has to be ensured that every filling materials used in the burners is durable and specifically suited for the thermal strain under contact with fuel and its combustion, which must not alter their properties.

The burner and all components which can reach a temperature over 65 K above room temperature, must be constructed of non-combustible materials.

4.5 Stability test

If fitting is provided by the manufacturer, it must be safe for the whole life of the appliance.

If unintentionally moved or tilted during operation the appliance has to be sufficiently stable.

Appliances provided with wheels or any other devices helping their movement must be naturally blocked and it has to be impossible to move them without extinguishing the flame.

The movable and free standing appliances must pass the stability test (tilting and sliding, impact, movement test), as stated in Clause 5.

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[1] Note: chrome-nickel steel 1.4301 or steel of a better quality are considered suitable for construction.

For all the tests the fuel tank has to be filled with fuel to the maximum level according to manufacturer information.

For wall-mounted appliances, unintentional moving must be prevented.

NOTE Damage to the appliance which is caused by impact stress (e.g. crack in a glass screen) can be accepted as long as the requirements towards mechanical stability and fuel spillage are met.

Table 1 — Tests to be performed according to appliance type

Test	Appliance			
	Fix	**Free standing**	**Movable**	**Tabletop**
Tilting + Sliding	NO	YES	YES	YES
Movement from impact	YES	YES	YES	YES
Tilting from impact	NO	YES	YES	YES
Stress	YES	NO	NO	NO
Spillage	NO	YES	YES	YES

4.6 Ignition device

The appliance must be safe to ignite.

It must be possible to light the appliance with commonly available lighters, if the appliance is not equipped with an integrated ignition device or a lighter is not included with the appliance. The user must be able to ignite the fire from a horizontal minimum distance of 140mm (shortest distance between the handle of the lighter or ignition device and the burner opening).

Devices which would enable the user to light the fire without visual contact with the flames, are not allowed.
If a remote control device is provided, an unwanted ignition must not be possible and a child safety device must be provided.

5 Test methods

5.1 Tilting and sliding test

The appliance is placed on an inclinable surface of glass with low friction and without any fixation.

The surface shall successively be tilted by 5° to all four sides and for non-fixable appliances and tabletop appliances by 10°.

The speed at which the surface is tilted must not exceed 1,5 ± 0,5° increase of tilt angle/second.

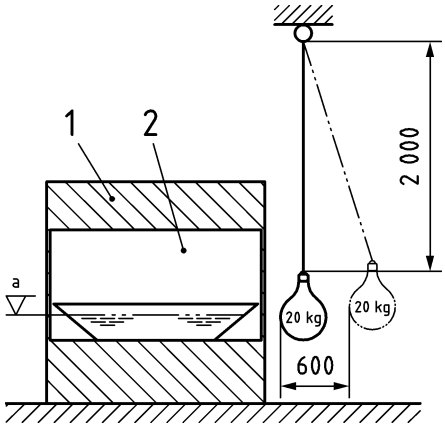
The test is considered passed if there is no spillage.

5.2 Movement from impact test

The appliance has be placed on a rigid, horizontal, levelled surface with a low friction (e.g. glass plate).

A sandbag is deflected by 600 mm and then swings freely towards to the barycentre.

Dimensions in millimetres



Key

1 Fireplace
2 Combustion chamber
a Maximum height of water

Figure 2 — Safety test for movement and leakage of fuel whilst striking against the appliance

The test is considered passed if there is no spillage and the appliance doesn't move more than 50 % of the safety distance stated in the manual. In any case, the appliance shall not move more than 1m.

5.3 Tilting from impact stress

Appliances are to be placed on a rigid, horizontal, levelled surface with a low friction (e.g. glass plate). A stopping device/barrier, the purpose of which is to restrict the movement of the appliance, is fixed on the floor next to the appliance. Its height must not exceed 12 mm (as in EN 1023-3), provided that the construction of the appliance does not require a higher stopping device/barrier. In that case, the height to be chosen is the lowest one which prevents the appliance from moving.

During impact test with a pendulum from the side of the appliance opposed to the stopping device/barrier, the appliance must not spill.

A sandbag of 20 kg weight is suspended from a 2 m long rope in such a manner that it hangs right next to the most critical point of the appliance (with regards to tilting it) (which is usually the point at the biggest distance from barycentre) in 1m height or next to its upper edge should the appliance be lower than 1 m. The sandbag is deflected by 600 mm and then swings freely towards the appliance.