SLOVENSKI STANDARD
SIST EN 1458-1:2012

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Nadomešča:

SIST EN 1458-1:2001

Gospodinjski bobnasti sušilniki s plinskim ogrevanjem tipov B22D in B23D z imensko močjo do vključno 6 kW - 1. del: Varnost

Domestic direct gas-fired tumble dryers of types B22D and B23D, of nominal heat input not exceeding 6 kW - Part 1: Safety

Direkt gasbeheizte Haushalts-Trommeltrockner der Typen B22D und B23D mit Nennwärmebelastungen nicht über 6 kW - Teil 1: Sicherheit

Sèche-linge domestiques à tambour rotatif à chauffage direct utilisant les combustibles gazeux, de type B22D et B23D, de débit calorifique nominal ne dépassant pas 6 kW - Partie 1: Sécurité

Ta slovenski standard je istoveten z: **EN 1458-1:2011**

ICS:

97.060	Aparati za nego perila	Laundry appliances

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EUROPEAN STANDARD

NORME EUROPÉENNE

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Supersedes EN 1458-1:1999

English Version

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This European Standard was approved by CEN on 25 September 2011.

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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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, 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

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Contents

Page

Foreword

This document (EN 1458-1:2011) has been prepared by Technical Committee CEN/TC 299 “Gas-fired sorption appliances, indirect fired sorption appliances, gas-fired endothermic engine heat pumps and domestic gas-fired washing and drying appliances”, the secretariat of which is held by UNI.

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of an identical text or by endorsement, at the latest by May 2012, and conflicting national standards shall be withdrawn at the latest by May 2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 1458-1:1999.

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.

This edition has been prepared to up-date this European Standard in the following respects:

a) electrical safety by calling up EN 60335-2-102,

b) its normative references, and

c) the CEN Member countries and their national situations.

The test gases, test pressures and appliance categories given in this European Standard are in accordance with those specified in EN 437.

The marking requirements in this European Standard take into account CR 1472.

The first part of the standard specifies the requirements and test methods for the construction, safety, marking and testing of the appliances. The second part of the standard specifies the requirements for rational use of energy.

This European Standard covers type testing only.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, 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 the United Kingdom.

1 Scope

This European Standard specifies the requirements and test methods for the construction, safety, and marking of domestic direct gas-fired tumble dryers, of types B_{22D} and B_{23D}, of nominal heat input not exceeding 6 kW, hereafter referred to as "appliances".

This European Standard does not apply to:

a) catalytic combustion appliances;

b) appliances designed exclusively for industrial purposes;

c) appliances intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere;

d) appliances of the condensing type wherein the heated air and products of combustion used for the drying process are dehumidified by cooling with water or air;

e) appliances intended to be used in vehicles or on board ships or aircraft.

This European Standard covers type testing only.

2 Normative references

The following referenced documents are indispensable for the application 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.

EN 88-1:2011, *Pressure regulators and associated safety devices for gas appliances — Part 1: Pressure regulators for inlet pressures up to and including 500 mbar*

EN 125:2010, *Flame supervision devices for gas burning appliances — Thermoelectric flame supervision devices*

EN 126:2004, *Multifuctional controls for gas burning appliances*

EN 161:2011, *Automatic shut-off valves for gas burners and gas appliances*

EN 257:2010, *Mechanical thermostats for gas burning appliances*

EN 298:2003, *Automatic gas burner control systems for gas burners and gas burning appliances with or without fans*

EN 1057:2006+A1:2010, *Copper and copper alloys — Seamless, round copper tubes for water and gas in sanitary and heating applications*

CEN/TR 1749:2009, *European scheme for the classification of gas appliances according to the method of evacuation of the products of combustion (types)*

EN 10226-1:2004, *Pipe threads where pressure tight joints are made on the threads — Part 1: Taper external threads and parallel internal threads — Dimensions, tolerances and designation*

EN 10226-2:2005, *Pipe threads where pressure tight joints are made on the threads — Part 2: Taper external threads and taper internal threads — Dimensions, tolerances and designation*

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

EN 60335-2-11:2003, *Household and similar electrical appliances — Safety — Part 2-11: Particular requirements for tumble dryers (IEC 60335-2-11:2002, modified)*

EN 60335-2-102:2006, *Household and similar electrical appliances — Safety — Part 2-102: Particular requirements for gas, oil and solid-fuel burning appliances having electrical connections (IEC 60335-2-102:2004, modified)*

EN 60584-1:1995, *Thermocouples — Part 1: Reference tables (IEC 60584-1:1995)*

EN 60730-2-9:2002, *Automatic electrical controls for household and similar use — Part 2-9: Particular requirements for temperature sensing controls (IEC 60730-2-9:2000, modified)*

EN ISO 228-1:2003, *Pipe threads where pressure-tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation (ISO 228-1:2000)*

EN ISO 1182:2010, *Reaction to fire tests for products — Non-combustibility test (ISO 1182:2010)*

EN ISO 3166-1:2006, *Codes for the representation of names of countries and their subdivisions — Part 1 Country codes (ISO 3166-1:2006)*

3 Terms and definitions

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

3.1
direct gas-fired tumble dryer
appliance in which textile material is dried by tumbling in a rotating drum through which heated air and products of combustion are forced or induced by mechanical means

3.2
gases

3.2.1
test gases
gases intended for the verification of the operational characteristics of gas appliances. They consist of reference gases and limit gases

[EN 437:2003+A1:2009]

3.2.2
reference gases
test gases with which appliances operate under nominal conditions when they are supplied at the corresponding normal pressure

[EN 437:2003+A1:2009]

3.2.3
limit gases
test gases representative of the extreme variations in the characteristics of the gases for which appliances have been designed

[EN 437:2003+A1:2009]

3.2.4
gas pressure
static pressure, relative to the atmospheric pressure, measured at right angles to the direction of flow of the gas

NOTE Test pressures are expressed in millibars (mbar) or bars.

3.2.5
gas supply pressure
relative static pressure measured at the gas inlet connection of the appliance, with the appliance in operation

3.2.6
test pressures
gas pressures used to verify the operational characteristics of gas appliances. They consist of normal and limit pressures

NOTE The gas pressures are expressed in millibars (mbar) 1 mbar = 10^2 Pa.

[EN 437:2003+A1:2009]

3.2.7
normal pressure
p_n
pressure under which the appliances operate in nominal conditions when they are supplied with the corresponding reference gas

[EN 437:2003+A1:2009]

3.2.8
limit pressures
maximum pressure: p_{max}; minimum pressure: p_{min}
pressures representative of the extreme variations in the appliance supply conditions

[EN 437:2003+A1:2009]

3.2.9
pressure couple
combination of two distinct gas distribution pressures applied by reason of the significant difference existing between the Wobbe indices within a single family or group in which

— the higher pressure corresponds only to gases of low Wobbe index;

— the lower pressure corresponds to gases of high Wobbe index

[EN 437:2003+A1:2009]

3.2.10
relative density
d
ratio of the masses of equal volumes of dry gas and dry air under the same conditions of temperature and pressure

3.2.11
calorific value
quantity of heat produced by the complete combustion, at a constant pressure equal to 1 013,25 mbar, of a unit volume or mass of gas, the constituents of the combustible mixture being taken at reference conditions and the products of combustion being brought back to the same conditions

A distinction is made between:

— the gross calorific value H_s: the water produced by combustion is assumed to be condensed;

— the net calorific value H_i: the water produced by combustion is assumed to be in the vapour state

NOTE The calorific value is expressed:

— either in megajoules per cubic metre (MJ/m^3) of dry gas at the reference conditions;

— or in megajoules per kilogram (MJ/kg) of dry gas.

[EN 437:2003+A1:2009]

3.2.12
Wobbe index
gross Wobbe index W_s; net Wobbe index W_i
ratio of the calorific value of a gas per unit volume and the square root of its relative density under the same reference conditions. The Wobbe index is said to be gross or net according to whether the calorific value used is the gross or net calorific value

NOTE The Wobbe index is expressed –

— either in megajoules per cubic metre (MJ/m^3) of dry gas at the reference conditions

— or in megajoules per kilogram (MJ/kg) of dry gas.

[EN 437:2003+A1:2009]

3.3
conditions of operation and measurement

3.3.1
reference conditions
— for calorific values, temperature: 15 °C;

— for gas and air volumes dry, brought to 15 °C and to an absolute pressure of 1 013,25 mbar

3.3.2
cold condition
condition of the appliance required for some tests and obtained by allowing the unlit appliance to attain thermal equilibrium at room temperature

3.3.3
hot condition
condition of the appliance required for some tests and obtained by heating to thermal equilibrium at the nominal heat input specified by the manufacturer, any thermostat remaining fully open

3.3.4
equivalent resistance
resistance to flow in millibar, measured at the outlet of the appliance, which is equivalent to that of the actual duct

3.4
appliance construction

3.4.1
gas circuit

3.4.1.1
gas circuit
part of the appliance that conveys or contains the gas between the appliance gas inlet connection and the burner(s)

3.4.1.2
mechanical joint
means of ensuring the soundness of an assembly of several (generally metallic) parts without the use of liquids (e.g. pastes and tapes)

EXAMPLE Metal to metal joints; conical joints; toroidal sealing rings (“O” rings); flat joints.

3.4.1.3
restrictor
device with an orifice, which is placed in the path of the gas flow between the appliance inlet connection and the burners to create a pressure drop and thus reduce the gas pressure at the burner to a predetermined value for a given supply pressure and rate

3.4.1.4
gas rate adjuster
component allowing an authorized person to set the gas rate of the burner to a predetermined value according to the supply conditions

NOTE 1 Adjustment may be progressive (screw adjuster) or in discrete steps (by changing restrictors).

NOTE 2 The adjusting screw of an adjustable regulator is regarded as a gas rate adjuster.

NOTE 3 The action of adjusting this device is called "adjusting the gas rate".

NOTE 4 A factory sealed gas rate adjuster is considered to be non-existent.

3.4.1.5
injector
component that admits the gas into a burner

3.4.1.6
gas rate control
component intended for the user to open or close the gas supply to one or more burners

NOTE 1 It can also be used to adjust the gas rate of certain burners to a predetermined value, called the "reduced rate".

NOTE 2 This device can be a "tap".

3.4.2
burners

3.4.2.1
main burner
burner that assures the thermal function of an appliance

3.4.2.2
ignition device
any means (e.g. flame, electrical ignition device or other device) used to ignite the gas at the ignition burner or at the main burner

3.4.2.3
ignition burner
burner intended to ignite a main burner

3.4.2.4
intermittent ignition burner
ignition burner that is ignited and extinguished at the same time as the main burner

3.4.2.5
fixed primary aeration restrictor
device containing an orifice of fixed cross section which limits the supply of air to a burner

3.4.3
exhaust duct
means of evacuating the moist air produced by the drying process together with the combustion products to the outside of the building

3.4.4
auxiliary equipment

3.4.4.1
regulator
device that maintains, within a fixed range, a constant downstream pressure, independent of the upstream pressure and/or the gas rate

3.4.4.2
flame supervision device
device, including a sensing element, that causes the gas supply to a burner to be opened or closed according to the presence or absence of the flame that activates the sensing element

3.4.4.3
control knob
component designed to be moved by hand in order to operate an appliance control (tap, thermostat, etc.)

3.4.4.4
programming unit
unit which reacts to signals from control and safety devices, gives control commands, controls the start-up sequence, supervises the burner operation and causes controlled shut-down, and if necessary safety shut-down and lock-out;

the programming unit follows a predetermined sequence of actions and always operates in conjunction with a flame detector device

[EN 298:2003]

3.4.4.5
programme
sequence of control operations determined by the programming unit involving switching on, starting up, supervising and switching off the burner;

safety actions such as safety shut down and lock out are also part of the programme

[EN 298:2003]

3.4.4.6
flame detector device
device by which the presence of a flame is detected and signalled;

it can consist of a flame sensor, an amplifier and a relay for signal transmission. These parts, with the possible exception of the actual flame sensor, can be assembled in a single housing for use in conjunction with a programming unit

[EN 298:2003]

3.4.4.7
flame signal
signal given by the flame detector device in case of sensed flame

[EN 298:2003]

3.4.4.8
flame simulation
condition which occurs when the flame signal indicates the presence of a flame when in reality no flame is present

[EN 298:2003]

3.4.4.9
automatic burner control system
system comprising at least a programming unit and all the elements of a flame detector device;

the various functions of an automatic burner control system can be in one or more housings

[EN 298:2003]

3.4.4.10
control thermostat
device controlling the operation of the appliance (by on/off, high/low or modulating control) and enabling the temperature to be kept automatically, within a given tolerance, at a predetermined value

3.4.4.11
modulating control
automatic control by which the heat input of the appliance can be adjusted continuously between the nominal heat input and a minimum value

3.4.4.12
high/low control
automatic control which permits an appliance to operate either at the nominal heat input or at a fixed reduced heat input

3.4.4.13
overheat cut-off device
device that shuts-off and locks-out the gas supply before the appliance is damaged (and before safety is put into question) and that requires manual intervention to restore the gas supply

3.5
immobilizing an adjuster or a control

3.5.1
setting an adjuster
immobilization of an adjuster (by some means such as e.g. a screw) after the manufacturer or installer has adjusted it

3.5.2
sealing an adjuster
setting of an adjuster using a material such that any attempt to change the adjustment breaks the sealing material and makes the interference with the adjuster apparent; the adjuster is then said to be "sealed" in its adjustment position

NOTE 1 A factory sealed adjuster is considered to be non-existent.

NOTE 2 A regulator is considered to be non-existent if it has been factory sealed in a position such that it is not operational in the range of supply pressures corresponding to the appliance category.

3.5.3
putting an adjuster or a control out of service
putting an adjuster or a control (e.g. of temperature, pressure) out of action and sealing it in this position; the appliance then functions as if the adjuster or control had been removed

3.6
appliance performance

3.6.1
gas rates

3.6.1.1
volume flow rate
V
volume of gas consumed by the appliance in unit time during continuous operation

NOTE The volume flow rate is expressed in cubic metres per hour (m^3/h), litres per minute (l/min), cubic decimetres per hour (dm^3/h) or cubic decimetres per second (dm^3/s).

[EN 437:2003+A1:2009]

3.6.1.2
mass flow rate
M
mass of gas consumed by the appliance in unit time during continuous operation

NOTE The mass flow rate is expressed in kilograms per hour (kg/h) or grams per hour (g/h).

[EN 437:2003+A1:2009]

3.6.1.3
heat input
Q
quantity of energy used in unit time corresponding to the volumetric or mass flow rates, the calorific value used being the net or gross calorific value

NOTE The heat input is expressed in kilowatts (kW).

[EN 437:2003+A1:2009]

3.6.1.4
nominal heat input
Q_n
value of the heat input (kW) declared by the manufacturer