



SLOVENSKI STANDARD
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Direct gas-fired washing machines, of nominal heat input not exceeding 20 kW - Part 1:
Safety

Direkt gasbefeuerte Waschmaschinen mit einer Nennwärmebelastung bis 20kW - Teil 1:
Sicherheit

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Machines a laver utilisant les combustibles gazeux, de débit calorifique nominal ne
dépassant pas 20 kW - Partie 1: Sécurité

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EUROPEAN STANDARD

EN 12244-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

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Descriptors: household appliances, washing machines, gas appliances, definitions, classifications, equipment specification, performance evaluation, tests, safety, marking, technical notices, utilization, maintenance

English version

Direct gas-fired washing machines, of nominal heat input not exceeding 20 kW - Part 1: Safety

Machines à laver utilisant les combustibles gazeux, de débit calorifique nominal ne dépassant pas 20 kW - Partie 1: Sécurité

Direkt gasbefeuerte Waschmaschinen mit einer Nennwärmebelastung bis 20 kW - Teil 1: Sicherheit

This European Standard was approved by CEN on 21 August 1997.

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.

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

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Contents

FOREWORD	8
1 Scope	9
2 Normative references	9
3 Definitions	11
3.1 Direct gas-fired washing appliance	11
3.2 Gases	11
3.3 Appliance construction	13
3.4 Immobilizing an adjuster or a control	15
3.5 Appliance performance	16
3.6 Marking of the appliance and packaging	18
4 Classification	18
4.1 Classification of gases	18
4.2 Classification of appliances	19
5 Construction and design requirements	22
5.1 General	22
5.1.1 Conversion to different gases	22
5.1.2 Materials and method of construction	24
5.1.3 Screws	24
5.1.4 Maintenance and use	25
5.1.5 Thermal insulation	25
5.1.6 Connections	25
5.1.7 Supply of combustion air and evacuation of combustion products	27
5.1.8 Soundness	28
5.1.9 Water filter	28
5.1.10 Checking the state of operation	28
5.1.11 Electrical equipment	29
5.1.12 Motors	30
5.1.13 Operational safety in the event of fluctuation, interruption and restoration of the auxiliary energy	30
5.2 Requirements for adjusting, control and safety devices	30
5.2.1 General	30
5.2.2 Automatic shut-off valves	31
5.2.3 Multifunctional controls	32
5.2.4 Flame supervision devices	32
5.2.5 Governors	33

5.2.6 Gas rate adjusters	33
5.2.7 Automatic burner control systems	34
5.2.8 Gas strainers	34
5.2.9 Atmosphere sensing device	34
5.2.10 Spillage monitoring device	35
5.3 Ignition devices	35
5.3.1 General	35
5.3.2 Ignition device for the main burner	36
5.3.3 Ignition burners	36
5.4 Ignition burner or start-gas flame establishment	36
5.5 Main flame establishment	36
5.5.1 Establishment by means of an ignition burner or start-gas flame	36
5.5.2 Direct establishment of the main flame e.g. spark ignition hot surface igniter	36
5.6 Burners	37
5.7 Thermostats and control of water temperature	37
5.7.1 General requirements	37
5.7.2 Temperature limiting device	37
5.8 Water level control device	38
5.9 Clocks and timing devices	38
5.10 Pressure test points	38
5.11 Mechanical hazards	38
5.11.1 General	38
5.11.2 Requirements for appliances with an opening dimension exceeding 30 cm and a drum having a volume exceeding 100 dm ³	39
5.12 Appliance stability	39
6 Operational safety	39
6.1 General	39
6.1.1 Characteristics of test gases: reference and limit gases	39
6.1.2 Conditions for preparation of test gases	41
6.1.3 Practical application of test gases	42
6.1.4 Test pressures	44
6.1.5 Test procedures	46
6.1.6 Test room	47
6.1.7 Preparation of the appliance	47
6.1.8 Test conditions	47
6.2 Screws	48
6.2.1 Requirements	48
6.2.2 Tests	48
6.3 Manually operated devices of the automatic burner control system	48
6.3.1 Requirements	48
6.3.2 Tests	48
6.4 Mechanical hazards	49
6.4.1 General	49
6.4.2 Additional requirements for appliances with an opening dimension exceeding 30 cm and a drum having a volume exceeding 100 dm ³	50

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(standards.iteh.ai)

SIST EN 12244-1:1999

[https://standards.iteh.ai/catalog/standards/sist/e36276f3-f51b-4388-b0c5-](https://standards.iteh.ai/catalog/standards/sist/e36276f3-f51b-4388-b0c5-2528ebd71fa2/sist-err-12244-1-1999)

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6.5 Stability of appliances	50
6.5.1 Requirements	50
6.5.2 Tests	50
6.6 Soundness	51
6.6.1 Soundness of the gas circuit	51
6.6.2 Soundness of the water circuit	52
6.6.3 Soundness of the combustion circuit and correct evacuation of the combustion products for type B appliances	52
6.7 Nominal heat input	53
6.7.1 General	53
6.7.2 Requirements	55
6.7.3 Tests	55
6.8 Heat input of ignition burners	55
6.8.1 Requirements	55
6.8.2 Tests	56
6.9 Burners	56
6.9.1 Resistance to overheating	56
6.9.2 Escape of unburnt gas	56
6.10 Limiting temperature of various parts of the appliance	57
6.10.1 Requirements	57
6.10.2 Tests	57
6.11 Limiting temperature of floor, walls and worktop	58
6.11.1 Requirements	58
6.11.2 Tests	58
6.12 Limiting temperature of components	59
6.12.1 Requirements	59
6.12.2 Tests	59
6.13 Motor limiting temperatures	59
6.13.1 Motor bearings	59
6.13.2 Motor windings	59
6.14 Flue gas temperature	60
6.14.1 Requirements	60
6.14.2 Tests	60
6.15 Ignition, cross-lighting and flame stability	61
6.15.1 Ignition and cross-lighting	61
6.15.2 Flame stability	62
6.15.3 Effect of room draughts	63
6.16 Flame supervision devices	64
6.16.1 Manual devices	64
6.16.2 Automatic devices	65
6.17 Governors	65
6.17.1 Requirements	65
6.17.2 Tests	65
6.18 Atmosphere sensing device	66
6.18.1 Requirements	66
6.18.2 Tests	66

6.19 Spillage monitoring device	67
6.19.1 General test conditions	67
6.19.2 Unintentional shutdown	67
6.19.3 Shutdown time	67
6.20 Combustion	69
6.20.1 Requirements	69
6.20.2 Tests	69
6.21 Soot deposition	72
6.21.1 Requirements	72
6.21.2 Tests	72
6.22 Cyclic operation	72
6.22.1 Requirements	73
6.22.2 Tests	73
6.23 Temperature limiting device	73
6.23.1 Requirements	73
6.23.2 Tests	73
6.24 Water level control device	74
6.24.1 Requirements	74
6.24.2 Tests	74
7 Marking	74
7.1 Marking of the appliance	74
7.1.1 Data plates	74
7.1.2 Warning notices	75
7.1.3 Other marking	76
7.2 Marking of the packaging	76
7.3 Utilization of symbols on the appliance and packaging	77
7.3.1 Electrical supply	77
7.3.2 Type of gas	77
7.3.3 Gas supply pressure	77
7.3.4 Country of destination	77
7.3.5 Category	78
7.4 Instructions	78
7.4.1 General	78
7.4.2 Technical instructions for installation and adjustment	78
7.4.3 Instructions for use and maintenance	81
7.5 Presentation	82

SIST EN 12244-1:1999

<https://standards.iteh.ai/catalog/standards/sist/e3627c13-f51b-4388-b0c5-2528ebd711a2/sist-en-12244-1-1999>

TABLES

1 Classification of gases	19
2 Characteristics of the test gases	40
3 Calorific values of the test gases of the third family	41
4 Test gases corresponding to the appliance categories	43
5 Test pressures where no pressure couple exists	45

6	Test pressures where a pressure couple exists	46
7	Torque values for screws	48
8	Maximum temperature raise in parts of the appliance that are likely to be touched accidentally	57
9	Shutdown time as a function of the blockage	68
10	$V_{CO_2,N}$ values	70
11	Symbols of the reference gases	77

FIGURES

1	Test flue	83
2a	Test corner for measuring floor and wall temperatures	84
2b	Apparatus for measuring floor and wall temperatures	85
2c	Test board for measuring worktop temperatures	86
3	Probe for measuring surface temperature	87
4	Probe for sampling and measuring the temperature of the combustion products	88
5	Abnormal draught conditions - type B appliances	89
6	Spillage monitoring device - test apparatus	90
7	Device for sampling the combustion products above the deflector for type A appliances	91
8	Sampling probe for test flues of diameter equal or greater than DN 100	92
9	Sampling probe for test flues of diameter less than DN 100	93
10	Probe for sampling the combustion products for appliances of type B ₁₁	94

ANNEXES

A (Informative) National situations	95
A.1 Categories listed in the body of the standard marketed in the different countries	95
A.2 Appliance supply pressures corresponding to the categories given in A.1	98
A.3 Special categories marketed nationally or locally and corresponding test gases	99
A.4 Test gases corresponding to the special categories given in A.3	101
A.5 Gas connections in the various countries	104
A.6 Water connection conditions in common use in the various countries	105
A.7 Flue connections in the various countries	106
A.8 Equivalence rules	107
B (normative) Protection against electric shock for high voltage ignition devices	109
B.1 Protection against accessibility to live parts	109
B.2 Requirements	109
B.3 Test	109
B.4 Measurement	110

B.5	Protection	110
C	(normative) Description of the sealed room for the test of appliances with atmosphere sensing devices	111
C.1	Configuration of the sealed room	111
C.2	Soundness of the room	111
C.3	Effectiveness of mixing	111
D	(normative) Special national conditions	113
ZA	(Informative) Clauses of this European Standard addressing essential requirements or other provisions of EU Directives	114

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SIST EN 12244-1:1999
<https://standards.iteh.ai/catalog/standards/sist/e3627c13-f51b-4388-b0c5-2528ebd711a2/sist-en-12244-1-1999>

FOREWORD

This European Standard has been prepared by Technical Committee CEN/TC 299 "Gas-fired sorption appliances and domestic gas-fired washing and drying appliances", the secretariat of which is held by AENOR.

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 September 1998, and conflicting national standards shall be withdrawn at the latest by September 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 the essential requirements of EU Directives.

For relationship with EU Directives, see informative Annex ZA, which is an integral part of this standard.

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

The marking requirements in this European Standard take into account CR 1472 *"General guidance for the marking of gas appliances"*.

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.

During consideration of this standard, it was agreed that a test for NO_x emissions was not considered necessary due to the intermittent pattern of use of these appliances.

This 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This part 1 of the standard EN 12244 specifies the requirements and test methods for the construction, safety and marking of direct gas-fired washing appliances with or without heat exchanger, with or without spin dryer, of types:

- A_1 and A_{1AS} not exceeding a heat input of 6 kW;
- B_{11} , B_{11AS} and B_{11BS} not exceeding a heat input of 20 kW,

hereafter referred to as "appliances".

This Standard does not apply to:

- a) catalytic combustion appliances;
- b) appliances intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere;
- c) appliances intended to be used in vehicles or on board ships or aircraft.

This standard covers type testing only.

2 Normative references

This Standard includes the provisions of other publications by dated or undated reference. These normative references are quoted in appropriate places in the text and the publications are listed below. For the dated references, amendments or revisions later than any of these publications apply to this standard only where they have been incorporated in it by amendment or revision. For the undated references, the latest edition of the publication to which reference is made applies.

EN 88	Pressure governors for gas appliances for inlet pressure up to 200 mbar
EN 125	Flame supervision devices for gas-burning appliances - Thermoelectric flame supervision devices (standards.iteh.ai)
EN 126	Multifunctional controls for gas burning appliances SIST EN 12244-1:1999
EN 161	Automatic shut-off valves for gas burners and gas appliances https://standards.iteh.ai/catalog/standards/sist/e3627c13-f51b-4388-b0c5-2528c6d711a2/sist-cip-12244-1-1999
EN 257	Mechanical thermostats for gas burning appliances
EN 298	Automatic gas burner control systems for gas burners and gas burning appliances
EN 437: 1993	Test gases, test pressures, appliance categories

EN 1057	Copper and copper alloys - Seamless, round copper tubes for water and gas in sanitary and heating applications
EN 23166	Codes for the representation of names of countries (ISO 3166: 1993)
EN 60068-2-63	Environmental testing, test methods, test equipment: impact, spring hammer
EN 60335-1	Safety of household and similar electrical appliances - Part 1: General requirements
EN 60335-2-7	Safety of household and similar electrical appliances - Part 2: Particular requirements for washing machines
EN 60529	Degrees of protection provided by enclosures
EN 60584-1	Thermocouples - Part 1: Reference tables
EN 60730-1	Automatic electrical controls for household and similar use - Part 1: General requirements
EN 60730-2-9	Automatic electrical controls for household and similar use - Part 2: Particular requirements for temperature sensing controls
EN 61058-1	Switches for appliances - Part 1: General requirements
CR 1472	General guidance for the marking of gas appliances
IEC 479-1	Effects of current passing through human body - Part 1: General aspects
IEC 479-2	Effects of current passing through human body - Part 2: Special aspects
ISO 7-1	Pipe threads where pressure-tight joints are made on the threads - Part 1: Designation, dimensions and tolerances
ISO 228-1	Pipe threads where pressure-tight joints are not made on the threads - Part 1: Designation, dimensions and tolerances
ISO 1182	Fire tests - Building materials - Non-combustibility test
ISO 6976	Natural gas - Calculation of the calorific value, the density and the relative density

3 Definitions

For the purpose of this standard, the following definitions apply:

3.1 direct gas-fired washing appliance: Appliance in which textile material is treated discontinuously in one operation cycle by wetting, preliminary washing, cleanwashing and rinsing and, due to construction, also centrifuging.

3.1.1 direct gas-fired washing appliance without heat exchanger: Appliance in which the water is heated directly in the drum.

3.1.2 direct gas-fired washing appliance with heat exchanger: Appliance in which the water is heated in an integral heat exchanger.

3.2 Gases

3.2.1 reference conditions: 15 °C, 1 013,25 mbar, unless otherwise specified.

3.2.2 calorific value: Quantity of heat produced by the complete combustion, at a constant pressure of 1 013,25 mbar, of 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 in which the water produced by combustion is assumed to be condensed;

Symbol: H_g

- the net calorific value in which the water produced by combustion is assumed to be in the vapour state.

Symbol: H_n

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Units: either

- megajoule per cubic metre (MJ/m^3) of dry gas at the reference conditions

or

- megajoule per kilogram (MJ/kg) of dry gas.

(EN 437: 1993).

3.2.3 relative density: Ratio of the masses of equal volumes of dry gas and dry air at the same conditions of temperature and pressure: 15 °C (or 0 °C), 1 013,25 mbar.

Symbol: d

3.2.4 Wobbe index: 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.

Symbol: gross Wobbe index: W_s ; net Wobbe index: W_i

Units: either

- megajoule per cubic metre (MJ/m³) of dry gas at the reference conditions

or

- megajoule per kilogram (MJ/kg) of dry gas.

(EN 437: 1993).

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 gases: Gases intended for the verification of the operational characteristics of appliances using combustible gases. They consist of reference gases and limit gases.
(EN 437: 1993).

3.2.7 reference gases: Test gases on which appliances operate under nominal conditions when they are supplied at the corresponding normal pressure. (EN 437: 1993).

3.2.8 limit gases: Test gases representative of the extreme variations in the characteristics of the gases for which appliances have been designed. (EN 437: 1993).

3.2.9 test pressures: Gas pressures used to verify the operational characteristics of appliances using combustible gases. They consist of normal and limit pressures.

Unit: millibar (mbar)

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NOTE: 1 mbar = 10² Pa

(EN 437: 1993).

3.2.10 normal pressure: Pressure under which the appliances operate in nominal conditions when they are supplied with the corresponding reference gas.

Symbol: p_n

(EN 437: 1993).

3.2.11 limit pressures: Pressures representative of the extreme variations in the appliance supply conditions.

Symbols: maximum pressure : p_{\max} ; minimum pressure : p_{\min}

(EN 437: 1993).

3.2.12 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: 1993).

3.3 Appliance construction

3.3.1 The gas circuit

3.3.1.1 gas circuit: Part of an appliance between the gas inlet connection and the burner(s) conveying or containing the gas. The circuit may comprise several components, e.g. restrictors, gas rate adjusters, gas rate controls, injectors.

3.3.1.2 mechanical joint: Connection device assuring soundness in an assembly of several parts, generally of metal, e.g. cone seated joint, O-ring joint, flat faced washered joint.

3.3.1.3 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.

3.3.1.4 gas rate adjuster: Component intended for the manufacturer or installer to set the gas rate to each burner at a predetermined value according to the supply conditions.

The adjustment may be progressive (screw adjuster) or discontinuous (changing restrictors).

The adjuster of an adjustable governor is regarded as a gas rate adjuster.

The action of setting this device is called "setting the gas rate".