

; cgdX]b'g_]VcVbUgh'gi y]b]_]g'd`]bg_]a 'c[fYj Ub^Ya 'h]dcj '6 &&8 'jb'6 &' 8 'n
]a Ybg_c'a c 'c'Xc'j_'1 bc'*_'K 'E'&'XY.'Ga c]fbUfUVUYbYf[]Y

Domestic direct gas-fired tumble dryers of types B22D and B23D, of nominal heat input not exceeding 6kW - Part 2: Rational use of energy

Direkt gasbeheizte Haushalts-Trommeltrockner der Typen B22D und B23D mit Nennwärmebelastungen nicht über 6 kW - Teil 2: Rationelle Energieverwendung

Seche-linge domestiques a tambour rotatif a chauffage direct utilisant les combustibles gazeux, de types B22D et B23D, de débit calorifique nominal ne dépassant pas 6 kW - Partie 2: Utilisation rationnelle de l'énergie

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English version

Domestic direct gas-fired tumble dryers of types B22D and
B23D, of nominal heat input not exceeding 6kW - Part 2:
Rational use of energy

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 2: Utilisation rationnelle de l'énergie

Direkt gasbeheizte Haushalts-Trommeltrockner der Typen
B22D und B23D mit Nennwärmebelastungen nicht über 6
kW - Teil 2: Rationelle Energieverwendung

This European Standard was approved by CEN on 19 May 1999.

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.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

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

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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 January 2000, and conflicting national standards shall be withdrawn at the latest by January 2000.

This European Standard 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).

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.

The Directive makes no specification in respect of the maximum rating of appliances falling within its scope. However, the scope of this standard has been limited to appliances having heat inputs not greater than 6 kW.

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"*.

For Gas-fired type B tumble dryers of nominal heat input not exceeding 20 kW, see EN 12752-1 and EN 12752-2.

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 standard covers type testing only.

1 Scope

This part 2 of EN 1458 specifies the requirements and test methods for rational use of energy 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 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 standard covers type testing only.

2 Normative references

This Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate place in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For the undated references, incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

EN 1458-1	Domestic direct gas-fired tumble dryers, of types B_{22D} and B_{23D} , of nominal heat input not exceeding 6 kW - Part 1: Safety
EN 20139	Textiles - Standard atmospheres for conditioning and testing (ISO 139)
EN 60456	Electric clothes washing machines for household use - Methods for measuring the performance (IEC 60456)
EN 60734:1993	Hard water to be used for testing the performance of some household electrical appliances (IEC 60734: 1993)
EN 61121	Method for measuring the performance of tumble dryers for household use (IEC 61121)

3 Definitions

For the purposes of this standard, the definitions of EN 1458-1 and the following definitions apply:

3.1 automatic tumble dryer: Appliance which switches off the drying process at a preselected moisture content of the load.

3.2 non-automatic tumble dryer: Appliance which does not switch off the drying process at a preselected moisture content of the load.

3.3 rated capacity: Maximum conditioned (method specified in EN 20139) mass of textile material, in kilograms, which is either declared by the manufacturer as suitable to be treated in a single operation or cycle of operations or determined from the capacity/drum volume ratio 1 kg/(24 l).

3.4 drum volume: Internal net volume in litres of the drum in which the textile is placed.

4 Energy consumption

4.1 Requirements

The appliance shall have a gas consumption (based on gross calorific value) not exceeding 4,0 MJ/kg of standard load.

4.2 Tests

4.2.1 General test conditions

4.2.1.1 Test appliance

The test is carried out on the same appliance as used for the tests specified in part 1. It shall be connected to a standardized exhaust (see annex A) during the measurements.

The appliance is loaded with the standard load (see 4.2.1.8) and operated on the standard programme (see 4.2.1.7).

4.2.1.2 Test gases

The tests shall be carried out with all reference gases according to the category of the appliance (see EN 1458-1).

4.2.1.3 Supply voltage and frequency

The supply voltage and frequency shall be maintained at the rated values $\pm 2\%$.

4.2.1.4 Ambient temperature

The ambient temperature of the room shall be maintained at $(20 \pm 2) ^\circ\text{C}$ throughout the measurements.

4.2.1.5 Ambient humidity

The ambient humidity of the room shall be maintained at $(65 \pm 5) \%$ throughout the measurements.

4.2.1.6 Water condition

For the washing machine used for wetting the test load by rinsing and centrifuging as specified in 4.2.1.9, the water temperature shall be $(15 \pm 2) ^\circ\text{C}$ and the hardness of the water should not exceed 0,50 mmol/l (Ca + Mg) (see 3.2 of EN 60734: 1993).

4.2.1.7 Standard programme

The programme for dry cotton loads (dried down to conditioned mass) as specified in the manufacturer's instructions, shall be used with either the standard load I or the standard load II specified in 4.2.1.8.

4.2.1.8 Standard load

For the determination of the gas consumption of the programme for dry cotton, standard load I or II can be used in accordance with EN 61121.

4.2.1.8.1 Standard load I

The textiles shall be white cotton terry towelling, conforming with the following specifications:

mass per unit area:	380 g/m ² \pm 5 % (of finished fabric)
main warp:	11,5 threads/cm of 50 tex
map warp:	11,5 threads/cm of 36 tex
weft:	17 threads/cm of 50 tex
height of nap:	1 : 6

The size of the pieces of the load shall be approximately:

1 000 mm \times 1 500 mm and
500 mm \times 1 000 mm and
375 mm \times 500 mm

The dimensions refer to hemmed and sewn pieces.

Different size pieces are used as given in table 1.

Table 1: Standard load I for cotton (dry cotton load programme)

Approximate size	Approximate mass of each piece	Rated capacity (kg)	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5
Bath towel 1 000 mm × 1 500 mm	570 g	Number of pieces	1	1	2	2	2	3	3	3
		Mass of pieces (g)	570	570	1 140	1 140	1 140	1 710	1 710	1 710
Terry towel 500 mm × 1000 mm	190 g	Number of pieces	4	6	6	7	8	8	11	12
		Mass of pieces (g)	760	1 140	1 140	1 330	1 520	1 520	2 090	2 280
Small terry towel 375 mm × 500 mm	70 g		Number required to make up total mass							

4.2.1.8.2 Standard load II

The standard load shall consist of cotton sheets, cotton pillowcases and cotton huckaback hand-towels conforming with the following specifications.

a) Sheets and pillowcases:

Bleached cotton

Weave in plain: 1/1
 Mass per unit area: 185 g/m² ± 5 % (of finished fabric)
 Warp: 23 threads/cm of 36 tex
 Weft: 23 threads/cm of 36 tex
 Sheet size: 1 500 mm × 2 600 mm (approximately)
 Pillowcase size: pieces of 800 mm × 800 mm approximately, folded in half and sewn along the three open edges so as to form a double thickness of fabric.

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b) Hand-towels

Bleached cotton

Weave-huckaback

Mass per unit area: 230 g/m² ± 5 % (of finished fabric)
 Warp: 19 threads/cm of 36 tex
 Weft: 13 threads/cm of 90 tex
 Size: 1 000 mm × 460 mm approximately