



BSI Standards Publication

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

National foreword

This British Standard is the UK implementation of EN 1458-2:2011. It supersedes BS EN 1458-2:1999 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee GSE/37, Gas fired sorption and laundering appliances.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Amendments issued since publication

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English Version

Domestic direct gas-fired tumble dryers of types B22D and B23D, of nominal heat input not exceeding 6 kW - 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 25 September 2011.

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Foreword

This document (EN 1458-2:2011) 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of an identical text or by endorsement, at the latest by May 2012, and conflicting national standards shall be withdrawn at the latest by May 2012.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 1458-2:1999.

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).

The main purpose of this edition is to align the method of test more closely with that given in the equivalent electrical appliance standard, EN 61121.

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 437:2003+A1:2009.

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 and a method of measuring the gas and electrical energy consumptions which enables comparison of gas and electrical Tumble dryers.

This standard covers type testing only.

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1 Scope

This European Standard specifies the requirements and test methods for rational use of energy, including measurement of both gas and electrical energy consumption, 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 1458-1:2011, *Domestic direct gas-fired tumble dryers, of types B22D and B23D, of nominal heat input not exceeding 6 kW — Part 1: Safety*

EN 61121, *Tumble dryers for household use — Methods for measuring the performance (IEC 61121, modified)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1458-1:2011 apply.

4 Energy consumption

4.1 Requirements

The gas and electrical energy consumptions of the appliance shall be determined in kW/h in accordance with the method of test given in 4.2.

The gas energy consumption of the appliance shall be recorded separately from the electrical energy consumption.

The appliance shall have a gas energy consumption (based on gross calorific value) not exceeding 1,11 kWh/kg of standard load.

4.2 Method of test

4.2.1 General test conditions

The electrical energy consumption shall be measured in accordance with EN 61121 and the energy consumption recorded in kWh.

The volume of gas utilised during this test is measured with a gas meter and the gas energy consumption (in kW/h) determined as described in 4.2.2.

The tests shall be carried out with all reference gases according to the category of the appliance (see EN 1458-1:2011).

4.2.2 Determination of gas energy consumption

The gas energy consumption, E_g , is determined in kW/h using the following equation:

$$E_g = 0,278V_c \times H_s \quad (1)$$

where

V_c is the volume of dry gas consumed, corrected to reference conditions (15 °C and 1 013,25 mbar), in cubic metres;

H_s is the gross calorific value of the dry test gas under reference conditions (15 °C and 1 013,25 mbar), in megajoule per cubic metre.

NOTE Where the test gas G 20 has a methane content of less than 99,5 % care should be taken to ensure that the calorific value of this gas is known and used in the above equation.

V_c is determined from the measured volume, by the following equation:

$$V_c = V_{mes} \times \frac{p_a + p - p_w}{1013,25} \times \frac{288,15}{273,15 + t_g} \quad (2)$$

where

V_{mes} is the measured gas volume, in cubic metres;

p_a is the atmospheric pressure, in millibars;

p is the gas supply pressure measured at the same point as that used in the heat input determination, in millibars;

p_w is the partial vapour pressure, in millibars;

t_g is the gas temperature measured at the same point as that used in the heat input determination, in degrees Celsius.

Bibliography

- [1] EN 60456:2005, *Clothes washing machines for household use — Methods for measuring the performance (IEC 60456:2003, modified)*
- [2] EN 60734:2003, *Household electrical appliances — Performance — Hard water for testing (IEC 60734:2001)*
- [3] EN ISO 139:2005, *Textiles — Standard atmospheres for conditioning and testing (ISO 139:2005)*

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