

Household and similar electrical appliances — Safety —

Part 2-11: Particular requirements for tumble dryers

ICS 97.060; 13.120

National foreword

This British Standard is the UK implementation of EN 60335-2-11:2003+A2:2006, incorporating corrigendum July 2003 and A11:2008. It is derived from IEC 60335-2-11:2002, incorporating amendments 1:2003 and 2:2006. It supersedes BS EN 60335-2-11:2001 which is withdrawn.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to IEC text carry the number of the IEC amendment. For example, text altered by IEC amendment 1 is indicated by **A1** **A1**.

The CENELEC common modifications have been implemented at the appropriate places in the text. The start and finish of each common modification is indicated in the text by tags **C** **C**.

Where a common modification has been introduced by amendment, the tags carry the number of the amendment. For example, the common modifications introduced by CENELEC amendment A11 are indicated by **C11** **C11**.

The UK participation in its preparation was entrusted by Technical Committee CPL/61, Safety of household and similar electrical appliances, to Subcommittee CPL/61/14, Home laundry appliances and dishwashers.

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

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

Amendments/corrigenda issued since publication

Amd. No.	Date	Comments
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14650 Corrigendum No. 2	20 October 2003	Change to withdrawal date in EN foreword
15460	3 December 2004	Changes to subclauses 7.12.1 , 20.101 , 20.102 and addition of subclause 30.101
16276 Corrigendum No. 3	6 March 2006	Correction to clause 20.101
16650	31 October 2006	See national foreword
17139 Corrigendum No. 4	29 June 2007	Correction to date of withdrawal in national foreword
	31 October 2009	Implementation of CENELEC amendment A11:2008

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English version

Household and similar electrical appliances —
Safety —
Part 2-11: Particular requirements for tumble dryers

Appareils électrodomestiques et
analogues — Sécurité
Partie 2-11: Règles particulières
pour les sèche-linge à tambour

Sicherheit elektrischer Geräte für den
Hausgebrauch und ähnliche Zwecke
Teil 2-11: Besondere Anforderungen für
Trommeltrockner

This European Standard was approved by CENELEC on 2003-03-01, amendment A1 was approved by CENELEC on 2004-03-01. CENELEC 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 CENELEC 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 CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B-1050 Brussels

Foreword

The text of document 61/2097/FDIS, future sixth edition of IEC 60335-2-11, prepared by the IEC Technical Committee 61, was submitted to the IEC-CENELEC parallel vote.

As a result of the Kista meeting of CENELEC TC 61 in May 2002, a draft amendment prAA containing the relevant existing common modifications was submitted to the formal vote.

The texts of the FDIS and the prAA were approved by CENELEC as a new edition of EN 60335-2-11 on 2003-03-01.

This European Standard replaces EN 60335-2-11:2001 + A1:2001 + A11:2002.

The following dates are applicable:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2004-03-01
- date on which national standards
conflicting with the EN have to be withdrawn (dow) 2007-08-01

This part 2 has to be used in conjunction with EN 60335-1, Household and similar electrical appliances – Safety – Part 1: General requirements. It was established on the basis of the 2002 edition of that standard. Amendments and revisions of Part 1 have also to be taken into account and the dates when such changes become applicable will be stated in the relevant amendment or revision of Part 1.

This part 2 supplements or modifies the corresponding clauses of EN 60335-1, so as to convert it into the European Standard: Safety requirements for electric tumble dryers.

When a particular subclause of Part 1 is not mentioned in this part 2, that subclause applies as far as is reasonable. When this standard states "addition", "modification" or "replacement", the relevant text of Part 1 is to be adapted accordingly.

NOTE 1 The following numbering system is used:

- subclauses, tables and figures that are numbered starting from 101 are additional to those in Part 1;
- unless notes are in a new subclause or involve notes in Part 1, they are numbered starting from 101, including those in a replaced clause or subclause;
- additional annexes are lettered AA, BB, etc.;
- subclauses, notes and annexes that are additional to those in the IEC standard are prefixed with the letter Z.

NOTE 2 The following print types are used:

- requirements: in roman type;
- *test specifications: in italic type*;
- notes: in small roman type.

Words in **bold** in the text are defined in Clause 3. When a definition concerns an adjective, the adjective and the associated noun are also in bold.

There are no special national conditions causing a deviation from this European Standard, other than those listed in Annex ZA to EN 60335-1.

There are no national deviations from this European Standard, other than those listed in Annex ZB to EN 60335-1.

Annex AA is normative and forms an integral part of this standard.

Introduction

An investigation by CENELEC TC 61 has shown that all risks from products within the scope of this standard are fully covered by the Low Voltage Directive, 73/23/EEC. For products having mechanical moving parts, a risk assessment in accordance with the Machinery Directive, 98/37/EC, has shown that the risks are mainly of electrical origin and consequently this directive is not applicable. However, the relevant essential safety requirements of the Machinery Directive are covered by this standard together with the principal objectives of the Low Voltage Directive.

Endorsement notice

The text of the International Standard IEC 60335-2-11:2002 was approved by CENELEC as a European Standard with agreed common modifications.

Foreword to amendment A1

The text of amendment 1:2003 to IEC 60335-2-11:2002 prepared by the IEC Technical Committee 61, was submitted to the Unique Acceptance Procedure and was approved by CENELEC as amendment A1 to EN 60335-2-11:2003 on 2004-03-01.

The following dates are applicable:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2005-03-01
- date on which national standards conflicting with the amendment have to be withdrawn (dow) 2007-08-01

This amendment supplements or modifies the corresponding clauses of EN 60335-2-11:2003.

As a consequence of endorsing amendment 1:2003 to IEC 60335-2-11:2002, the common modifications in EN 60335-2-11:2003 concerning subclauses 20.101 and 20.102 are replaced by IEC text and therefore withdrawn.

There are no special national conditions causing a deviation from this amendment.

There are no national deviations from this amendment.

Endorsement notice

The text of amendment 1:2003 to the International Standard IEC 60335-2-11:2002 was approved by CENELEC as an amendment to the European Standard without any modification.

Foreword to amendment A2

The text of document 61/2991/FDIS, future amendment 2 to IEC 60335-2-11:2002, prepared by IEC Technical Committee 61, Safety of household and similar electrical appliances, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as amendment A2 to EN 60335-2-11:2003 on 2006-05-01.

The following dates are applicable:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2007-02-01
- date on which national standards conflicting with the amendment have to be withdrawn (dow) 2009-05-01

This amendment supplements or modifies the corresponding clauses of EN 60335-2-11:2003.

There are no special national conditions causing a deviation from this amendment.

There are no national deviations from this amendment.

Endorsement notice

The text of amendment 2:2006 to the International Standard IEC 60335-2-11:2002 was approved by CENELEC as an amendment to the European Standard without any modification.

Foreword to amendment A11

This amendment to the European Standard EN 60335-2-11:2003 was prepared by the Technical Committee CENELEC TC 61, Safety of household and similar electrical appliances.

Document CLC/TC61(SEC)1551 was discussed during the Malaga meeting of CENELEC TC 61 in June 2006, when it was decided to submit a draft for an amendment to the Unique Acceptance Procedure.

This draft was circulated to the Unique Acceptance Procedure in December 2007 and was approved by CENELEC as amendment A11 to EN 60335-2-11:2003 on 2008-07-01.

The following dates were fixed:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2009-07-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2011-07-01

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INTRODUCTION

It has been assumed in the drafting of this International Standard that the execution of its provisions is entrusted to appropriately qualified and experienced persons.

This standard recognizes the internationally accepted level of protection against hazards such as electrical, mechanical, thermal, fire and radiation of appliances when operated as in normal use taking into account the manufacturer's instructions.  It also covers abnormal situations that can be expected in practice and takes into account the way in which electro-magnetic phenomena can affect the safe operation of appliances. 

This standard takes into account the requirements of IEC 60364 as far as possible so that there is compatibility with the wiring rules when the appliance is connected to the supply mains. However, national wiring rules may differ.

If an appliance within the scope of this standard also incorporates functions that are covered by another part 2 of IEC 60335, the relevant part 2 is applied to each function separately, as far as is reasonable. If applicable, the influence of one function on the other is taken into account.

This standard is a product family standard dealing with the safety of appliances and takes precedence over horizontal and generic standards covering the same subject.

An appliance that complies with the text of this standard will not necessarily be considered to comply with the safety principles of the standard if, when examined and tested, it is found to have other features which impair the level of safety covered by these requirements.

An appliance employing materials or having forms of construction differing from those detailed in the requirements of this standard may be examined and tested according to the intent of the requirements and, if found to be substantially equivalent, may be considered to comply with the standard.

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-11: Particular requirements for tumble dryers

1 Scope

This clause of Part 1 is replaced by the following.

This International Standard deals with the safety of electric **tumble dryers** intended for household and similar purposes, their **rated voltage** being not more than 250 V for single-phase appliances and 480 V for other appliances.

NOTE 101 This standard applies to the drying function of washing machines having a drying cycle.

Appliances not intended for normal household use but which nevertheless may be a source of danger to the public, such as appliances intended to be used by laymen in shops, in light industry and on farms are within the scope of this standard.

NOTE 102 Examples of such appliances are **tumble dryers** for communal use in blocks of flats or in launderettes.

As far as is practicable, this standard deals with the common hazards presented by appliances that are encountered by all persons in and around the home. However, in general, it does not take into account

- the use of appliances by young children or infirm persons without supervision;
- playing with the appliance by young children.

A₂ This standard also deals with the safety of **tumble dryers** that use a refrigerating system, incorporating sealed motor-compressors, for drying textile material. These appliances may use **flammable refrigerants**. Additional requirements for these appliances are given in Annex BB. **A₂**

NOTE 103 Attention is drawn to the fact that

- for appliances intended to be used in vehicles or on board ships or aircraft, additional requirements may be necessary;

A₂ – in many countries, additional requirements are specified by the national health authorities, the national authorities responsible for the protection of labour, the national water supply authorities, the national authorities responsible for transportation and the national authorities for buildings. **A₂**

NOTE 104 This standard does not apply to

- appliances intended exclusively for industrial purposes;
- appliances intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere (dust, vapour or gas).

2 Normative references

C This clause of Part 1 is applicable except as follows.

Addition:

IEC 61770, *Electric appliances connected to the water mains - Avoidance of backsiphonage and failure of hose-sets* **C**

3 Definitions

This clause of Part 1 is applicable except as follows.

3.1.9 *Replacement:*

normal operation

operation of the appliance under the following conditions

The appliance is operated filled with textile material having a mass in the dry condition equal to the maximum load stated in the instructions.

The textile material consists of pre-washed double-hemmed cotton sheets having dimensions approximately 70 cm × 70 cm and a specific mass between 140 g/m² and 175 g/m² in the dry condition. The textile material is soaked with water having a temperature of 25 °C ± 5 °C and a mass equal to that of the textile material.

If the drying function can automatically follow the washing function in a washing machine, the appliance is not separately loaded. The appliance is operated with the maximum quantity of textile material stated in the instructions for the combined washing-drying cycle.

NOTE 101 Cotton having a water content not exceeding 10 % is considered to be in the dry condition.

Cotton conditioned for 24 h in still air, having a temperature of 20 °C ± 2 °C, a relative humidity between 60 % and 70 % and a pressure between 860 mbar and 1 060 mbar, will contain approximately 7 % water.

3.101

tumble dryer

appliance in which textile material is dried by tumbling in a rotating drum through which heated air is blown

3.102

condensation-type tumble dryer

tumble dryer in which the air used for the drying process is dehumidified by cooling

4 General requirement

This clause of Part 1 is applicable.

5 General conditions for the tests

This clause of Part 1 is applicable.

6 Classification

This clause of Part 1 is applicable except as follows.

6.2 *Addition:*

Appliances shall be at least IPX4.

7 Marking and instructions

This clause of Part 1 is applicable except as follows.

7.1 *Addition:*

The appliance shall be marked with symbol ISO 7000-0790 (DB:2004-01) or with the substance of the following:

Read the instructions 

7.6 Addition:

 [symbol IEC 60417-5041 (DB:2002-10)]  caution, hot surface

7.10 Addition:

If the **off position** is only indicated by letters, the word "off" shall be used.

7.12 Addition:

The instructions for use shall state

- the maximum mass of dry textile material in kilograms to be used in the appliance;
- that the tumble dryer is not to be used if industrial chemicals have been used for cleaning;
- that the lint trap has to be cleaned frequently, if applicable;
- that lint must not to be allowed to accumulate around the tumble dryer (not applicable for appliances intended to be vented to the exterior of the building);
- that adequate ventilation has to be provided to avoid the back flow of gases into the room from appliances burning other fuels, including open fires.

NOTE 101 This instruction is not required if the **tumble dryer** discharges the air into the room.

 If symbols IEC 60417-5041 (DB:2002-10) or ISO 7000-0790 (DB:2004-01) are used, their meaning shall be explained.

The instructions shall include the substance of the following.

- Do not dry unwashed items in the tumble dryer.
- Items that have been soiled with substances such as cooking oil, acetone, alcohol, petrol, kerosene, spot removers, turpentine, waxes and wax removers should be washed in hot water with an extra amount of detergent before being dried in the tumble dryer.
- Items such as foam rubber (latex foam), shower caps, waterproof textiles, rubber backed articles and clothes or pillows fitted with foam rubber pads should not be dried in the tumble dryer.
- Fabric softeners, or similar products, should be used as specified by the fabric softener instructions.
- The final part of a tumble dryer cycle occurs without heat (cool down cycle) to ensure that the items are left at a temperature that ensures that the items will not be damaged.

The instructions shall include the substance of the following warning:

WARNING: Never stop a tumble dryer before the end of the drying cycle unless all items are quickly removed and spread out so that the heat is dissipated. 

7.12.1 Addition:

The installation instructions shall state

 *Text deleted* 

- the maximum permissible inlet water pressure, in megapascals;
- the minimum permissible inlet water pressure, in megapascals, if this is necessary for correct operation of the appliance;
- for appliances with ventilation openings in the base, that a carpet must not obstruct the openings;