

**Majapidamis- ja muud taolised elektriseadmed. Ohutus.
Osa 2-11: Erinõuded trummelkuivatitele**

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

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 60335-2-11:2010 sisaldab Euroopa standardi EN 60335-2-11:2010 ingliskeelset teksti.

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**Household and similar electrical appliances -
Safety -
Part 2-11: Particular requirements for tumble dryers
(IEC 60335-2-11:2008, modified)**

Appareils électrodomestiques
et analogues - Sécurité -
Partie 2-11: Règles particulières
pour les sèche-linge à tambour
(CEI 60335-2-11:2008, modifiée)

Sicherheit elektrischer Geräte
für den Hausgebrauch und ähnliche
Zwecke -
Teil 2-11: Besondere Anforderungen
für Trommeltrockner
(IEC 60335-2-11:2008, modifiziert)

This European Standard was approved by CENELEC on 2010-04-01. 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, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

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Foreword

The text of document 61/3646/FDIS, future edition 7 of IEC 60335-2-11, prepared by IEC Technical Committee 61, Safety of household and similar electrical appliances, was submitted to the IEC-CENELEC parallel vote.

A draft amendment was prepared by the Technical Committee CENELEC TC 61, Safety of household and similar electrical appliances. It was discussed during the meeting of CENELEC TC 61 in Kista in June 2008, when it was decided to submit a draft for an amendment to the Unique Acceptance Procedure.

The combined texts were approved by CENELEC as EN 60335-2-11 on 2010-04-01.

This European Standard supersedes EN 60335-2-11:2003 + corr. July 2003 + A1:2004 + A2:2006 + A11:2008.

The principal changes compared to EN 60335-2-11:2003 and its amendments are as follows (minor changes are not listed):

- aligns the text with EN 60335-1:2002 and its amendments,
- some notes have been converted to normative text.

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

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) 2011-04-01
- date on which national standards
conflicting with the EN have to be withdrawn (dow) 2015-04-01

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.

p NOTE In this document, p is used in the margin to indicate instructions for preparing the printed version.

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Endorsement notice

The text of the International Standard IEC 60335-2-11:2008 was approved by CENELEC as a European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS

15 Moisture resistance

p **15.2** *Add before the last paragraph:*

For appliances having a working surface, the test is repeated with the appliance tilted at an angle of 2° in relation to the position of normal use in the direction which is likely to be the most unfavourable.

The lid of top loading appliances is considered as a working surface if it is flat enough to put something on.

19 Abnormal operation

Add the following new subclause:

19.Z101 The appliance is supplied at **rated voltage** and operated under **normal operation**.

Any fault condition or unexpected operation that may be applied in normal use is introduced.

NOTE 1 Examples of fault conditions and unexpected operations are:

- the programmer stopping in any position;
- disconnection and reconnection of one or more phases of the supply during any part of the programme;
- open-circuiting or short-circuiting of components.

NOTE 2 In general, tests are limited to the fault conditions that may be expected to give the most unfavourable results. The simulation of component faults is limited to those that could expose the user to a hazard.

NOTE 3 If the appliance stops at any particular point in the programme, the test with that fault condition is considered to be ended.

NOTE 4 The fault condition with

- thermal controls short-circuited is covered by 19.4;
- motor capacitors short-circuited or open-circuited is covered by 19.7.

24 Components

Add:

24.1.3 *Addition:*

The number of cycles of operation for the switching device in door interlocks is 30 000.

Add the following new subclause:

24.Z101 Switches complying with IEC 61058-1 are not short-circuited during the tests of Clause 19. The tests of IEC 61058-1 are carried out under the conditions occurring in the appliance.

Bibliography

p **Add the following notes to the standards mentioned:**

IEC 60079 series	NOTE	Harmonized in EN 60079 series (not modified)
IEC 60436	NOTE	Harmonized as EN 50242/EN 60436
IEC 60584-1	NOTE	Harmonized as EN 60594-1
ISO 13732-1	NOTE	Harmonized as EN ISO 13732-1

p Add:

Annex ZC
(normative)**Normative references to international publications
with their corresponding European publications***Addition:*

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO 3864-1	-	Graphical symbols – Safety colours and safety signs – Design principles for safety signs in workplaces and public areas	–	–

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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 electromagnetic 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.

When a part 2 standard does not include additional requirements to cover hazards dealt with in Part 1, Part 1 applies.

NOTE 1 This means that the technical committees responsible for the part 2 standards have determined that it is not necessary to specify particular requirements for the appliance in question over and above the general requirements.

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.

NOTE 2 Horizontal and generic standards covering a hazard are not applicable since they have been taken into consideration when developing the general and particular requirements for the IEC 60335 series of standards. For example, in the case of temperature requirements for surfaces on many appliances, generic standards, such as ISO 13732-1 for hot surfaces, are not applicable in addition to Part 1 or part 2 standards.

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.

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.

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

- persons (including children) whose
 - physical, sensory or mental capabilities; or
 - lack of experience and knowledge
 prevents them from using the appliance safely without supervision or instruction;
- children playing with the appliance.

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;
- 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.

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

This clause of Part 1 is applicable except as follows.

Addition:

ISO 3864-1, *Graphical symbols – Safety colours and safety signs – Part 1: Design principles for safety signs in workplaces and public areas*

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.