

**Majapidamis- ja muud taolised elektriseadmed. Ohutus.  
Erinõuded kaubanduslikele elektrilistele  
trummelkuivatitele**

**Household and similar electrical appliances - Safety -  
Particular requirements for commercial electric tumble  
dryers**

## EESTI STANDARDI EESSÕNA

See Eesti standard EVS-EN 50570:2013 sisaldab Euroopa standardi EN 50570:2013 ingliskeelset teksti.

Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.

Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 22.11.2013.

Standard on kättesaadav Eesti Standardikeskusest.

## NATIONAL FOREWORD

This Estonian standard EVS-EN 50570:2013 consists of the English text of the European standard EN 50570:2013.

This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.

Date of Availability of the European standard is 22.11.2013.

The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile [standardiosakond@evs.ee](mailto:standardiosakond@evs.ee).

ICS 97.060

### Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:  
Aru 10, 10317 Tallinn, Eesti; [www.evs.ee](http://www.evs.ee); telefon 605 5050; e-post [info@evs.ee](mailto:info@evs.ee)

### The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:  
Aru 10, 10317 Tallinn, Estonia; [www.evs.ee](http://www.evs.ee); phone 605 5050; e-mail [info@evs.ee](mailto:info@evs.ee)

**Household and similar electrical appliances -  
Safety -  
Particular requirements for commercial electric tumble dryers**

Appareils électrodomestiques et  
analogues -  
Sécurité -  
Règles particulières pour les sèche-linge à  
tambour à usage collectif

Sicherheit elektrischer Geräte für den  
Hausgebrauch und ähnliche Zwecke -  
Besondere Anforderungen für elektrische  
Trommeltrockner für den gewerblichen  
Gebrauch

This European Standard was approved by CENELEC on 2013-06-10. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

**CENELEC**

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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B - 1000 Brussels**

## Contents

|   |           |
|---|-----------|
| <b>Foreword .....</b>   | <b>4</b>  |
| <b>Introduction .....</b>   | <b>5</b>  |
| <b>1 Scope .....</b>  | <b>6</b>  |
| <b>2 Normative references .....</b>   | <b>6</b>  |
| <b>3 Terms and definitions .....</b>  | <b>7</b>  |
| <b>4 General requirement .....</b>  | <b>8</b>  |
| <b>5 General conditions for the tests .....</b>   | <b>8</b>  |
| <b>6 Classification .....</b>   | <b>8</b>  |
| <b>7 Marking and instructions .....</b>   | <b>8</b>  |
| <b>8 Protection against access to live parts .....</b>  | <b>12</b> |
| <b>9 Starting of motor-operated appliances .....</b>  | <b>12</b> |
| <b>10 Power input and current .....</b>   | <b>12</b> |
| <b>11 Heating .....</b>   | <b>12</b> |
| <b>12 Void .....</b>  | <b>13</b> |
| <b>13 Leakage current and electric strength at operating temperature .....</b>  | <b>13</b> |
| <b>14 Transient overvoltages .....</b>  | <b>13</b> |
| <b>15 Moisture resistance .....</b>   | <b>13</b> |
| <b>16 Leakage current and electric strength .....</b>   | <b>14</b> |
| <b>17 Overload protection of transformers and associated circuits .....</b>   | <b>14</b> |
| <b>18 Endurance .....</b>   | <b>14</b> |
| <b>19 Abnormal operation .....</b>  | <b>15</b> |
| <b>20 Stability and mechanical hazards .....</b>  | <b>16</b> |
| <b>21 Mechanical strength .....</b>   | <b>17</b> |
| <b>22 Construction .....</b>  | <b>18</b> |
| <b>23 Internal wiring .....</b>   | <b>20</b> |
| <b>24 Components .....</b>  | <b>20</b> |
| <b>25 Supply connection and external flexible cords .....</b>   | <b>20</b> |
| <b>26 Terminals for external conductors .....</b>   | <b>20</b> |
| <b>27 Provision for earthing .....</b>  | <b>20</b> |
| <b>28 Screws and connections .....</b>  | <b>21</b> |
| <b>29 Clearances, creepage distances and solid insulation .....</b>   | <b>21</b> |
| <b>30 Resistance to heat and fire .....</b>   | <b>21</b> |
| <b>31 Resistance to rusting .....</b>   | <b>21</b> |
| <b>32 Radiation, toxicity and similar hazards .....</b>   | <b>21</b> |
| <b>Annex AA (normative) Rinsing agent .....</b>   | <b>23</b> |
| <b>Annex BB (normative) Appliances that use a refrigerating system incorporating sealed motor-compressors for carrying out the drying process .....</b> | <b>24</b> |
| <b>Annex CC (normative) Non-sparking “n” electrical apparatus .....</b>   | <b>31</b> |
| <b>Annex DD (normative) Emission of acoustical noise .....</b>  | <b>32</b> |
| <b>Annex ZE (informative) Specific additional requirements for appliances and machines intended for commercial use .....</b>                            | <b>34</b> |

|  |           |
|--|-----------|
| <b>Annex ZZ (informative) Coverage of Essential Requirements of EU Directives.....</b> | <b>35</b> |
| <b>Bibliography .....</b>  | <b>36</b> |

## Figures

|  |           |
|--|-----------|
| <b>Figure 101 — Probe for measuring surface temperatures .....</b> | <b>22</b> |
| <b>Figure 201 — Symbol: Caution: Risk of fire.....</b>             | <b>26</b> |

## Tables

|  |    |
|--|----|
| Table 3 — Maximum normal temperature rises .....             | 13 |
| Table AA.1 — Rinsing agent .....                             | 23 |
| Table 201 — Maximum temperatures for motor-compressors ..... | 26 |
| Table 202 — Refrigerant flammability parameters .....        | 29 |

This document is a preview generated by EVS

## Foreword

This document (EN 50570:2013) has been prepared by CLC/TC 61, "Safety of household and similar electrical appliances".

The following dates are fixed:

- latest date by which this document has to be implemented (dop) 2014-06-10  
at national level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with (dow) 2016-06-10  
this document have to be withdrawn

EN 50570:2013 is to be read in conjunction with EN 60335-1:2012 and its amendments, which is referred to in this text as "Part 1". This standard supplements or modifies the corresponding clauses of Part 1 as indicated in the text.

NOTE 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.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of this document.

---

## Introduction

This European Standard has been prepared to provide a means of conforming to essential safety requirements of the Machinery Directive 2006/42/EC. Other requirements and other EU Directives may be applicable to the machines within the scope of this standard.

This standard is a product family standard dealing with the safety of commercial electric **tumble dryers** and takes precedence over horizontal and generic standards covering the same subject.

This standard recognises the level of protection against hazards such as electrical, mechanical, thermal, fire and radiation of commercial electric **tumble dryers** when operated as in normal use taking into account the manufacturer's instructions. It also covers any reasonably foreseeable misuse of the machinery and takes into account the way in which electromagnetic phenomena can affect the safe operation of commercial electric **tumble dryers**.

A commercial electric **tumble dryer** 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 that impair the level of safety covered by these requirements.

This standard takes into account the requirements of HD 60364-1 as far as possible so that there is compatibility with the wiring rules when the machinery is connected to the supply mains. However, national wiring rules may differ.

## 1 Scope

*Replace this clause of Part 1 by the following:*

This European Standard deals with the safety of electrical operated **tumble dryers** intended to be used by trained users in i.e. hotels, hospitals, factories, in light industry and on farms. It also covers **tumble dryers** which are declared for commercial use **in public areas** and operated by lay persons e.g. in laundrettes, communal laundry rooms. The rated voltage shall not be more than 250 V for single phase and 480 V for others.

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

This standard also covers **tumble dryers** making use of other energy sources. It does not cover requirements for these other energy sources. However the influence of these other energy sources on the machines is covered.

This standard deals with the common hazards presented by **tumble dryers** that are encountered by all persons. However, in general, it does not take into account:

a) persons (including children) whose:

- 1) physical, sensory or mental capabilities, or
- 2) lack of experience and knowledge

prevents them from using the **tumble dryers** safely without supervision or instruction;

b) children playing with the **tumble dryer**.

Attention is drawn to the fact that:

- for commercial electric **tumble dryers** 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.

This European Standard does not apply to:

- c) industrial laundry machinery (EN ISO 10472-4),
- d) **tumble dryers** intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere (dust, vapour or gas).

For the purpose of this standard, the term “appliance” as used in Part 1 is to be read as “**tumble dryers** intended for commercial use”.

## 2 Normative references

This clause of Part 1 is applicable except as follows.

*Addition:*

EN 60204-1:2006/A1:2009, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2005/A1:2008)*

EN 60335-1:2012, *Household and similar electrical appliances — Safety — Part 1: General requirements (IEC 60335-1:2010, modified)*

EN 60704-1:2010, *Household and similar electrical appliances — Test code for the determination of airborne acoustical noise — Part 1: General requirements (IEC 60704-1:2010)*

EN 60730-2-12:2006, *Automatic electrical controls for household and similar use — Part 2-12: Particular requirements for electrically operated door locks (IEC 60730-2-12:2005, modified)*

EN ISO 3744, *Acoustics — Determination of sound power levels and sound energy levels of noise sources*



*using sound pressure — Engineering methods for an essentially free field over a reflecting plane (ISO 3744)*

EN ISO 3746, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Survey method using an enveloping measurement surface over a reflecting plane (ISO 3746)*

EN ISO 4871, *Acoustics — Declaration and verification of noise emission values of machinery and equipment (ISO 4871)*

EN ISO 9614-2:1996, *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 2: Measurement by scanning (ISO 9614-2:1996)*

EN ISO 11201, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions in an essentially free field over a reflecting plane with negligible environmental corrections (ISO 11201)*

EN ISO 11203, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions from the sound power level (ISO 11203)*

EN ISO 11688-1, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 1: Planning (ISO/TR 11688-1)*

Replace the reference to EN 62233 by:

EN 62233:2008, *Measurement methods for electromagnetic fields of household appliances and similar apparatus with regard to human exposure (IEC 62233:2005, modified)*

### 3 Terms and definitions

This clause of Part 1 is applicable except as follows:

#### 3.1.9 normal operation

*Addition:*

The appliance is 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/m<sup>2</sup> and 175 g/m<sup>2</sup> 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.

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.

*Addition:*

#### 3.1.101 tumble dryer

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

#### 3.1.102 condensation-type tumble dryer

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

#### 3.1.103 guard

part of the appliance specifically designed to provide protection by means of a physical barrier