

STN	Elektrické spotrebiče pre domácnosť a na podobné účely Metódy merania funkčných vlastností bubnových sušičov na komerčné použitie	STN EN 50594 36 1071
------------	--	--

Household and similar electric appliances - Methods for measuring the performance of tumble dryers intended for commercial use

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 10/18

Obsahuje: EN 50594:2018

Oznámením tejto normy sa od 23.04.2019 ruší
STN P CLC/TS 50594 (36 1071) zo septembra 2015

127390

EUROPEAN STANDARD

EN 50594

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2018

ICS 97.060

Supersedes CLC/TS 50594:2015

English Version

Household and similar electric appliances - Methods for measuring the performance of tumble dryers intended for commercial use

Appareils électrodomestiques et analogues - Méthodes de mesure de l'aptitude à la fonction pour les sèche-linge à tambour à usage commercial

Elektrische Geräte für den Hausgebrauch und ähnliche Zwecke - Verfahren zur Messung der Gebrauchseigenschaften für Wäschetrockner für den gewerblichen Gebrauch

This European Standard was approved by CENELEC on 2018-04-23. 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents	Page
European foreword	5
1 Scope	6
2 Normative references	6
3 Terms, definitions and symbols	6
3.1 Terms and definitions	6
3.2 List of symbols	8
4 Requirements	10
4.1 General.....	10
4.2 Rated capacity	11
4.3 Dimensions	11
5 Test conditions, materials, equipment and instrumentation	12
5.1 General.....	12
5.2 Ambient conditions	12
5.2.1 <i>Electricity supply</i>	12
5.2.2 <i>Water supply</i>	12
5.2.3 <i>Ambient temperature and humidity</i>	13
5.3 Test materials.....	13
5.3.1 <i>General</i>	13
5.3.2 <i>Test load</i>	13
5.3.3 <i>Detergent</i>	13
5.4 Equipment	13
5.4.1 <i>Equipment for normalization</i>	13
5.4.2 <i>Equipment for conditioning the test load</i>	14
5.4.3 <i>Equipment for wetting the test load prior to a test</i>	14
5.4.4 <i>Equipment for measurement</i>	14
5.5 Instrumentation and accuracy.....	15
6 Preparation for testing	15
6.1 General.....	15
6.2 Test specifications from manufacturers	15
6.3 Installation of the tumble dryer	16
6.4 Preparation of the tumble dryer for a test series.....	16
6.5 Preparation of the tumble dryer for a test run	16
6.5.1 <i>General</i>	16
6.5.2 <i>Preparation requirements for all heating alternatives except for heat pump equipped tumble dryers</i>	16
6.5.3 <i>Preparation requirements for heat pump equipped tumble dryers</i>	16
6.6 Preparation of test loads	17

6.6.1	<i>General</i>	17
6.6.2	<i>Pre-treatment of new test load items prior to use</i>	17
6.6.3	<i>Requirements regarding the age of test load items</i>	17
6.6.4	<i>Normalization of test load items</i>	17
6.6.5	<i>Conditioning of test load items</i>	18
6.6.6	<i>Test load composition</i>	18
6.6.7	<i>Wetting</i>	21
7	Performance measurements – General requirements	21
8	Tests for performance	22
8.1	<i>General</i>	22
8.2	<i>Test procedure for performance tests</i>	22
8.2.1	<i>Test conditions, materials and preparation for testing</i>	22
8.2.2	<i>Test programme</i>	22
8.2.3	<i>Test load</i>	23
8.2.4	<i>Test procedure</i>	23
8.2.5	<i>Validity of a test run</i>	23
8.2.6	<i>Validity of a test series</i>	23
8.3	<i>Measurements to determine water and energy consumption and cycle time</i>	24
8.3.1	<i>General</i>	24
8.3.2	<i>Procedure</i>	24
8.4	<i>Measurements to determine condensation efficiency</i>	24
8.4.1	<i>General</i>	24
8.4.2	<i>Procedure</i>	24
8.5	<i>Measurements to determine exhaust air volume</i>	25
8.6	<i>Performance measurement at maximum exhaust duct pressure</i>	25
8.7	<i>Measurement of the textile drying temperature</i>	25
9	Assessment of performance	25
9.1	<i>General</i>	25
9.2	<i>Final moisture content of the load</i>	25
9.3	<i>Total energy</i>	26
9.4	<i>Corrected energy</i>	26
9.5	<i>Corrected water consumption</i>	27
9.6	<i>Corrected cycle time</i>	27
9.7	<i>Condensation efficiency</i>	28
9.8	<i>Evaporation capacity</i>	28
9.9	<i>Exhaust air volume</i>	29
10	Data to be reported	29
Annex A (normative) Reference list		30
Annex B (normative) Exhaust ducts for tumble dryer testing		31
Annex C (informative) Flow diagrams		35
Annex D (normative) Test report – Data to be reported		36

EN 50594:2018 (E)

Annex E (normative) Procedure to determine test load size where rated capacity is not declared	40
Annex F (normative) Flexible initial moisture content method	41
Annex G (normative) Performance testing of steam heated tumble dryers.....	43
Annex H (normative) Performance testing of gas heated tumble dryers	50
Annex I (informative) Measurement of exhaust air volume	53
Annex J (informative) Measurement of the textile drying temperature	54
Annex K (normative) Test procedure for a performance test of a cotton dry programme with full load at standard rating conditions	56
Annex L (normative) Reporting of key parameters.....	64
Bibliography.....	65

European foreword

This document (EN 50594:2018) has been prepared by CLC/TC 59X "Performance of household and similar electrical appliances".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2019-04-23
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2021-04-23

This document supersedes CLC/TS 50594:2015.

This document is based on portions of EN 61121:2013.

The procedures described in this European Standard are modified substantially compared to the procedures described in EN 61121. Therefore, results of tests according to this European Standard cannot and are bound not to be compared to results of similar procedures of EN 61121.

Significant technical differences from EN 61121 are:

- a) test procedures for tumble dryers of any size on the market;
- b) test procedure for measuring power consumption also for steam heated and gas heated tumble dryers;
- c) the introduction of a new type of test load;
- d) the introduction of a new initial moisture content level.

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

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association.

EN 50594:2018 (E)**1 Scope**

This European Standard is applicable to **tumble dryers** intended to be used by trained users e.g. in hotels, hospitals, factories, in light industry and on farms. It covers **tumble dryers** declared for commercial use in public areas and operated by lay persons e.g. in laundrettes, apartment houses and communal laundry rooms. This European Standard covers **tumble dryers** which use electricity, gas or steam as a heating source.

The object is to state and define the principal performance characteristics of **tumble dryers** for commercial use of interest to users and to describe standard methods for measuring these characteristics.

NOTE It does not apply to **transfer tumble dryers** or **tumble dryers** only possible to operate with automatic loading and unloading.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 437:2003+A1:2009, *Test gases — Test pressures — Appliance categories*

CEN/TR 1749:2014, *European scheme for the classification of gas appliances according to the method of evacuation of the combustion products (types)*

EN 12953-10, *Shell boilers — Part 10: Requirements for feedwater and boiler water quality*

EN 50570:2013, *Household and similar electrical appliances — Safety — Particular requirements for commercial electric tumble dryers*

EN 50640:2018, *Clothes washing machines for commercial use — Methods for measuring the performance*

EN 60456:2016, *Clothes washing machines for household use — Methods for measuring the performance (IEC 60456:2010, modified)*

EN 60734, *Household electrical appliances — Performance — Water for testing (IEC 60734)*

EN 62053-21, *Electricity metering equipment (a.c.) — Particular requirements — Part 21: Static meters for active energy (classes 1 and 2) (IEC 62053-21)*

ISO 80000-1:2009, *Quantities and units — Part 1: General*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN