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Responsible committee: CPL/59 Performance of household electrical appliances

Interested committees:

Title: Draft BS EN 50731 Durability - Measurement method for the assessment of the reliability of washing machines for household use.

Please notify the secretary if you are aware of any keywords that might assist in classifying or identifying the standard or if the content of this standard

- i) has any issues related to 3rd party IPR, patent or copyright
- ii) affects other national standard(s)
- iii) requires additional national guidance or information

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Full document details: 24/30464890 DC

Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	

English Version

Durability - Measurement method for the assessment of the reliability of washing machines for household use

Durabilité - Méthode de mesure pour l'évaluation de la fiabilité des machines à laver pour usage domestique

Funktionsbeständigkeit - Messverfahren zur Bewertung der Zuverlässigkeit von Waschmaschinen für den Hausgebrauch

This draft European Standard is submitted to CENELEC members for enquiry.
Deadline for CENELEC: 2024-07-26.

It has been drawn up by CLC/TC 59X.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CENELEC 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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



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

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42 **European foreword**

43 This document (prEN 50731:2024) has been prepared by CLC/TC 59X "Performance of household and similar
44 electrical appliances".

45 This document is currently submitted to the Enquiry.

46 The following dates are proposed:

- | | | |
|---|-------|--|
| <ul style="list-style-type: none"> • latest date by which the existence of this document has to be announced at national level | (doa) | dor + 6 months |
| <ul style="list-style-type: none"> • latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement | (dop) | dor + 12 months |
| <ul style="list-style-type: none"> • latest date by which the national standards conflicting with this document have to be withdrawn | (dow) | dor + 36 months
(to be confirmed or modified when voting) |

47 Introduction

48 As energy-related products (ErP) can often not be completely recycled, and the benefits associated with material
49 recovery cannot fully compensate the energy and material demand of the whole production chain, each
50 disposed ErP also means losses in energy and materials. Therefore, increasing the durability of ErPs can
51 contribute to a reduction in the quantity of raw materials used and energy required for the production and end-
52 of-life treatment of ErPs and consequently reduces adverse environmental impacts.

53 Due to the general longevity of washing machines and their long running hours per annum the assessment of
54 the durability, or reliability, of these products can be very time-consuming and costly. Methods and approaches
55 that may be used to quantify these aspects are included in this document. The transportation and storage of
56 washing machines is usually considered as a separate aspect from the durability and reliability of the product.
57 It is generally expected that the product will arrive at the end consumer in a state where it can fulfil its intended
58 function.

1 Scope

This document provides a measurement method to assess the reliability of washing machines for household use. This document defines the functional analysis, limiting events/states, environmental conditions and test conditions of washing machines. It also elaborates on the level of confidence on the measurement results.

NOTE 1 The method is based on EN 45552 (General method for the assessment of the durability of energy-related products) and takes into account EN 45554 (General methods for the assessment of the ability to repair, reuse and upgrade energy-related products).

This document provides information about the interrelations of reliability, reparability and upgradeability with consideration towards a durability assessment for washing machines for household use.

This document provides input/results about the investigation on the assessment of reparability and upgradeability for washing machines for household use.

Secretary NOTE: Investigations are planned to consider the most important issues identified in CLC/TR 50727.

This document is not intended to be used to assess the reliability of:

- washing machines, intended for commercial or industrial use;
- washer-dryers.

This document does not address the ability of washing machines to be reused.

Product functions related to the safety of washing machines are out of the scope of this document.

NOTE 2 EN 60335-2-7 addresses safety requirements for household appliances. It includes aging tests that are relevant to safety.

This document is intended to be used for the verification of a reliability declaration.

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 60456:2016¹, *Clothes washing machines for household use - Methods for measuring the performance*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp/>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

durability

<of a part or a product> ability to function as required, under defined conditions of use, maintenance and repair, until a limiting state is reached

Note 1 to entry: The degree to which maintenance and repair are within the scope of durability will vary by product or product-group.

¹ As impacted by EN 60456:2016/A11:2020 and EN 60456:2016/A12:2023.

94 Note 2 to entry: Durability can be expressed in units appropriate to the part or product concerned, e.g. calendar time,
95 operating cycles, distance run, etc. The units should always be clearly stated.

96 [SOURCE: EN 45552:2020, 3.1.1.1, Note 2 to entry deleted]

97 **3.2**

98 **reliability**

99 probability that a product functions as required under given conditions, including maintenance, for a given
100 duration without a limiting event

101 Note 1 to entry: The intended function(s) and given conditions are described in the information for use provided with the
102 product.

103 Note 2 to entry: Duration can be expressed in units appropriate to the part or product concerned, e.g. calendar time,
104 operating cycles, distance run, etc. The units should always be clearly stated.

105 [SOURCE: EN 45552:2020, 3.1.1.2]

106 **3.3**

107 **limiting event**

108 occurrence which results in a primary or secondary function no longer being delivered

109 Note 1 to entry: Examples of limiting events are failure, wear-out failure or deviation of any analogue signal.

110 [SOURCE: EN 45552:2020, 3.1.1.3]

111 **3.4**

112 **limiting state**

113 condition after one or more limiting event(s)

114 Note 1 to entry: A limiting state can be changed to a functional state by maintenance or repair of the appliance.

115 Note 2 to entry: A limiting state can change to EoL-status, if maintenance or repair is no longer viable due to socio-
116 economic or technical reasons.

117 [SOURCE: EN 45552:2020, 3.1.1.4]

118 **3.5**

119 **primary function**

120 function fulfilling the intended use

121 Note 1 to entry: There can be more than one primary function.

122 [SOURCE: EN 45552:2020, 3.1.2.1]

123 **3.6**

124 **secondary function**

125 function that enables, supplements or enhances the primary function(s)

126 [SOURCE: EN 45552:2020, 3.1.2.2]

127 **3.7**

128 **tertiary function**

129 function other than a primary or a secondary function

130 [SOURCE: EN 45552:2020, 3.1.2.3]

3.8**maintenance**

action carried out to retain a product in a condition where it is able to function as required

Note 1 to entry: Examples of such actions include inspection, adjustments, cleaning, lubrication, testing, software update and replacement of a wear-out part. Such actions could be performed by users in accordance with instructions provided with the equipment (e.g. replacement or recharging of batteries); or the actions could be performed by service personnel in order to ensure that parts with a known time to failure are replaced in order to keep the product functioning.

[SOURCE: EN 45552:2020, 3.1.3.4]

3.9**repair**

process of returning a faulty product to a condition where it can fulfil its intended use

[SOURCE: EN 45554:2020, 3.1.4]

3.10**part**

hardware, firmware or software constituent of a product

[SOURCE: EN 45554:2020, 3.1.1]

3.11**washing cycle**

complete washing process as defined by a selected programme, consisting of a series of different operations including washing, rinsing, and spinning procedure

3.12**reference test**

initial procedure for determining the reference values of monitored parameters in the programs used for conducting the reliability test

3.13**parameter monitoring**

procedure for monitoring defined parameters and assessing deviation from reference values

3.14**time tracking**

recording of values of defined parameters in relation to the test time

3.15**cotton base load**

specified load

Note 1 to entry: The cotton load shall be in accordance with EN 60456:2016, C.1.

3.16**spin speed**

rotational frequency of a drum during spin extraction

[SOURCE: EN 60456:2016, 3.1.17]

3.17**rinse and spin cycle**

programme with the purpose of rinsing and spin drying the load