



**SLOVENSKI STANDARD**  
**SIST EN IEC 62512:2021/oprAB:2023**

**01-februar-2023**

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**Električni pralno-sušilni stroji za uporabo v gospodinjstvu - Metode za merjenje lastnosti - Dopolnilo AB**

Electric clothes washer-dryers for household use - Methods of measuring the performance

Elektrische Wasch-Trockner für den Hausgebrauch - Prüfverfahren zur Bestimmung der Gebrauchseigenschaften

Lavantes-séchantes électriques à usage domestique - Méthodes de mesure de l'aptitude à la fonction

**Ta slovenski standard je istoveten z: EN IEC 62512:2020/prAB**

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**ICS:**

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English Version

## Electric clothes washer-dryers for household use - Methods of measuring the performance

Lavantes-séchantes électriques à usage domestique -  
Méthodes de mesure de l'aptitude à la fonction

Elektrische Wasch-Trockner für den Hausgebrauch -  
Prüfverfahren zur Bestimmung der  
Gebrauchseigenschaften

This draft amendment prAB, if approved, will modify the European Standard EN IEC 62512:2020; it is submitted to CENELEC members for enquiry.

Deadline for CENELEC: 2023-03-17.

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

If this draft becomes an amendment, CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration.

This draft amendment 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.

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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.

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

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**EN IEC 62512:2020/prAB:2022 (E)**

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## 20 European foreword

21 This document (EN IEC 62512:2020/prAB:2022) has been prepared by CLC/TC 59X "Performance of  
22 household and similar electrical appliances".

23 This document is currently submitted to the Enquiry.

24 The following dates are proposed:

- latest date by which the existence of this (doa) dor + 6 months  
document has to be announced at national  
level
- latest date by which this document has to be (dop) dor + 12 months  
implemented at national level by publication of  
an identical national standard or by  
endorsement
- latest date by which the national standards (dow) dor + 36 months  
conflicting with this document have to be  
withdrawn (to be confirmed or  
modified when voting)

25 This document introduces the following technical modifications:

26 a) adjusted precision for washing efficiency index;

27 b) in normative clauses undated references were dated;

28 c) references to new amendment EN 60456:2016/prAB:2022 were updated.

29 This document is read in conjunction with EN IEC 62512:2020 and EN IEC 62512:2020/A11:2020.

30 Clauses, notes, tables, figures and annexes which are additional to those in IEC 62512:2012 are prefixed "Z".

31 This document has been prepared under a Standardization Request given to CENELEC by the European  
32 Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s)  
33 / Regulation(s).

34 For relationship with EU Directive(s) / Regulation(s), see informative Annexes ZZA and ZZB, which are an  
35 integral part of this document.

## EN IEC 62512:2020/prAB:2022 (E)

36 **1 Modifications to Clause 2, “Normative references”**37 *In Clause 2, delete*38 CLC/TS 50677, *Clothes washing machines and washer-dryers for household and similar use — Method for the*  
39 *determination of rinsing effectiveness by measurement of the surfactant content at textile materials*40 CLC/TS 50707:2020, *Clothes washing machines and washer-dryers for household and similar use — Method*  
41 *for the determination of the maximum temperature inside the load”.*42 **2 Modifications to Clause 4, “Requirements”**43 *In 4.1, replace the 1<sup>st</sup> paragraph with the following:*44 **“4.1 General**45 The requirements shall be in accordance with Clause 4 of EN 60456:2016<sup>1</sup> and of EN 61121:2013<sup>2</sup> as  
46 appropriate.47 *In Clause 4.2, replace the last paragraph as follows:*48 **“4.2 Rated capacity**49 If the **rated washing capacity** in kg at 0,5 kg intervals is not declared, it shall be deduced from the volume of  
50 the drum according to EN 60456:2016<sup>1</sup>, Annex N.”51 **3 Modifications to Clause 5, “Test conditions, materials, equipment and**  
52 **instrumentation”**53 *In 5.1, replace the paragraph as follows:*54 "Test conditions, materials, equipment and instrumentation shall be in accordance with Clause 5 of  
55 EN 60456:2016<sup>1</sup>; however, 5.2.2 and 5.2.3 of the same standard are modified as follows."56 *In 5.2, replace the paragraph as follows:*57 "The water supply shall be in accordance with 5.2.2 of EN 60456:2016<sup>1</sup>Error! Bookmark not defined.."58 *In 5.4, replace the paragraph as follows:*59 "The specifications for base loads, stain test strips and detergent used for testing **washer-dryers** shall be in  
60 accordance with 5.3 of EN 60456:2016<sup>1</sup>."61 *In 5.5, replace entire text as follows:*62 "The specification for the **reference machine** is given in 5.4.2 of EN 60456:2016<sup>1</sup>. The type 1 **reference**  
63 **machine** according to Annex D of EN 60456:2016<sup>1</sup> shall be used.64 Specifications for other specialized test equipment required for **washer-dryer** testing to this document, including  
65 the spectrophotometer, equipment for **conditioning** the **base load** and the iron shall be in accordance with  
66 5.4.3, 5.4.4 and 5.4.6 of EN 60456:2016<sup>1</sup> and in accordance with 5.5 of EN 61121:2013<sup>2</sup>. Where these two  
67 standards give different values, the smaller value shall apply.68 A checklist of other laboratory equipment which could be required for **washer-dryer** testing is provided in 5.4.8  
69 of EN 60456:2016<sup>1</sup>."70 *In 5.6, replace the paragraph as follows:*71 "Instruments used and measurements made according to this document shall comply with the specifications  
72 given in 5.5.2 and 5.5.3 of EN 60456:2016<sup>1</sup> and EN 61121:2013<sup>2</sup>, 5.5, whichever is more precise."

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<sup>1</sup> As amended by EN 60456:2016/prAB:2022.<sup>2</sup> As amended by EN 61121:2013/A11:2019.

#### 73 **4 Modifications to Clause 7, “Performance measurements — General requirements”**

74 *In Clause 7, replace the 1<sup>st</sup> paragraph as follows:*

75 "The requirements in EN 60456:2016<sup>1</sup>, Clause 7 related to the combined **test series** of the **eco 40-60**  
76 **programme** with **full load**, **half load** and **quarter load** according to  
77 EN 60456:2016<sup>1</sup>, Annex ZA is also applicable for the **washer-dryer** to measure the performance of the washing  
78 program.

79 *In Clause 7, replace the 5<sup>th</sup> paragraph as follows:*

80 "The following parameters shall be measured for the **reference washing machine** using a **test series**  
81 consisting of 5 runs as set out in EN 60456:2016<sup>1</sup>, Clause 8 and using a 5,0 kg cotton **test load** as defined for  
82 the **reference washing machine**:

- 83 — washing performance;
- 84 — water extraction performance;
- 85 — spin speed;
- 86 — **programme time**;
- 87 — energy consumption;
- 88 — water consumption."

89 *In Clause 7, replace the 6<sup>th</sup> paragraph as follows:*

90 The evaluation of these parameters for the **washer-dryer** is specified in Annex ZA. The evaluation of these  
91 parameters for the **reference washing machine** is specified in EN 60456:2016<sup>1</sup>, Clause 9.

92 *In Clause 7, replace the 10<sup>th</sup> paragraph as follows:*

93 Selected water hardness shall be hard water; refer to 5.2.2.2 of EN 60456:2016<sup>1</sup>.

#### 94 **5 Modifications to Clause 8, “Tests for performance”**

95 *In 8.2, replace the first paragraph as follows:*

96 "The rinsing effectiveness measurement for the combined **test series** of the **eco 40-60 programme** with **full**  
97 **load**, **half load** and **quarter load** according to Annex ZA of EN 60456:2016<sup>1</sup> and for the **test series** of the  
98 **wash and dry cycle** with **full load** and **half load** according to Annex ZA of this document shall be done in  
99 accordance with ZA.4.9."

100 *In 8.2, replace the last paragraph as follows:*

101 "For the test according to Annex ZA, the determination of the low power modes shall be made according to  
102 ZA.4.9 of EN 60456:2016<sup>1</sup>."

#### 103 **6 Modifications to Clause 9, “Assessment of performance”**

104 *In 9.1, replace the 4<sup>th</sup> paragraph as follows:*

105 *In bullets 2, 4 and 6 of step 3 in 9.1, add the phrase: “(in accordance with Clause 9 of EN 60456:2016<sup>1</sup>Error!*  
106 **Bookmark not defined.)” after “according to 8.3.2”.**

107 *In 9.1, replace the 8<sup>th</sup> paragraph as follows:*

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108 "Noise emission values shall be measured in accordance with EN 60704-2-16:2019<sup>3</sup>.

109 *In 9.1, replace the 9<sup>th</sup> paragraph as follows:*

110 "For **test runs** according to ZA noise emission values shall be measured in the **eco 40-60 programme** using  
111 the full **rated washing capacity** in accordance to EN 60704-2-16:2019<sup>3</sup>."

## 112 7 Modifications to Clause 10, "Data to be reported"

113 *In Clause 10, replace the paragraph as follows:*

114 "For the **test series** for the **wash and dry cycle** with **full load** and **half load** according to Annex ZA, data to be  
115 reported for the test **washer-dryer** are included in ZA.6. The relevant data for the **reference machine** shall be  
116 reported according to Annex S of EN 60456:2016<sup>1</sup>."

## 117 8 Modification of Annex ZA, "Test procedure for assessing the performance of a 118 washer-dryer with respect to the eco 40-60 programme and with respect to the 119 wash and dry complete operation cycle"

120 *In ZA.1.1:*

121 *add the following paragraph above the first paragraph:*

122 "Annex ZA sets out the procedure to be applied for testing according to Commission Regulations with regard to  
123 energy labelling and ecodesign and provides all necessary links to all relevant clauses of this document."

124 *replace a) as follows:*

125 "  
126 a) **Full load, half load** and **quarter load** for the **washing cycle** of a **washer-dryer**. Testing of the **washing**  
127 **cycle** of the **washer-dryer** shall be performed according to EN 60456:2016<sup>1</sup>."

128 *In ZA.2, replace the entire text as follows:*

129 "The requirements for the preparation of the **full load** and **half load** used in the test **washer-dryer** and the **test**  
130 **load** used in the **reference machine** shall be in accordance with Clause 6 of EN 60456:2016<sup>1</sup>. All requirements  
131 of 6.4 of EN 60456:2016<sup>1</sup> are applied to define the **full load** for a **test series**. For the **test runs** with **half load**  
132 the **full load** shall be split into two parts. ZA.2 of EN 60456:2016<sup>1</sup> defines the splitting of the **full load** into the  
133 two **half loads (part A and part B)**."

134 *In ZA.3, replace the 1<sup>st</sup> paragraph as follows:*

135 "The complete energy label test consists of 2 **test series**. One is the **eco 40-60 programme** and the other is  
136 the **wash and dry cycle**. The preparation of the test **washer-dryer** following Clause 6.2.1.3 of EN 60456:2016<sup>1</sup>  
137 is applicable for both **test series** regardless which the first in the performance test is. For the **test series** of the  
138 **wash and dry cycle** additionally Clause 6.4 of EN 61121:2013<sup>2</sup> shall be applied."

139 *In ZA.3, replace the 3<sup>rd</sup> paragraph as follows:*

140 "In one **combined test series** with 3 **treatments** with 10 **test runs**, the performance of the **eco 40-60**  
141 **programme** with **full load, half load** and **quarter load** shall be measured according to ZA.4 of  
142 EN 60456:2016<sup>1</sup>. The evaluation of these parameters for the **test machine** is specified in ZA.5 of  
143 EN 60456:2016<sup>1</sup>. The data to be reported for this **test series** are specified in ZA.6 of EN 60456:2016<sup>1</sup>."

144 *In ZA.3, replace the 5<sup>th</sup> paragraph as follows:*

145 "For each **test series** performance parameters shall be measured for the **reference washing machine** using  
146 a single **test series** consisting of a total of 5 **test runs** as set out in Clause 8 of EN 60456:2016<sup>1</sup>. The order of

<sup>3</sup> As amended by EN 60704-2-16:2019/A11:2020.



147 **test runs** for the **reference washing machine** and for the test series of the **wash and dry cycle** is set out in  
148 ZA.4.4.”

149 *In ZA.3, replace the last paragraph as follows:*

150 “The evaluation of these parameters for the **reference washing machine** is specified in Clause 9 of  
151 EN 60456:2016<sup>1</sup>.”

152 *In ZA.4.2, replace the paragraph as follows:*

153 “The test load composition and the loading sequence shall be in accordance with ZA.4.2 of EN 60456:2016<sup>1</sup>.”

154 *In ZA.4.4, below “A test run shall be considered to be invalid if one or more of the following occurs” replace  
155 the 3<sup>rd</sup> bullet point as follows:*

156 “

157 — the reference machine operated in parallel fails to perform within the tolerances specified in  
158 EN 60456:2016<sup>1</sup>, Annex D;”

159 *In ZA.4.5, replace the paragraph as follows:*

160 “To assess washing performance, measurements shall be carried out as specified in 8.3.3 of EN 60456:2016<sup>1</sup>  
161 and ZA.4.5 of EN 60456:2016<sup>1</sup>.”

162 *In ZA.4.7, replace the paragraph as follows:*

163 “During the **test runs** instrumentation for the measurement of water volume, water temperature and electrical  
164 energy shall record the required parameters in accordance with ZA.4.8 of EN 60456:2016<sup>1</sup>.”

165 *In ZA.4.8, replace the paragraph as follows:*

166 “Measurement to determine the power in low power modes shall be in accordance with the requirements of  
167 Annex ZD of EN 60456:2016<sup>1</sup>.”

168 *In ZA.4.9, replace the paragraph as follows:*

169 “Measurement to determine the rinsing effectiveness shall be in accordance with the requirements of Annex ZF  
170 of EN 60456:2016<sup>1</sup>.”

171 *In ZA.4.10, replace the paragraph as follows:*

172 “Measurement to determine the temperature inside the load shall be in accordance with the requirements of  
173 Annex ZE of EN 60456:2016<sup>1</sup>.”

174 *In ZA.5.1, replace the last paragraph as follows:*

175 “Under no circumstances shall any data from an invalid **test run** in either the **test machine** or the **reference  
176 machine** be used for evaluation. For detailed definition of invalid **test runs** for the **test series** refer to ZA.4.4.”

177 *In ZA.5.2., e), delete the whole paragraph.*

178 *In ZA.5.3., b), replace the paragraph as follows:*

179 “

180 b) The Washing Efficiency Index  $I_{W,z}$  shall be calculated per **treatment** as follows:

181 
$$I_{W,z} = \frac{C_z}{C_{ref}}$$

182 where

$C_z$  is the average value for the sum of the reflectance values for **treatment z** ( $z = full, 1/2$ );

$C_{ref}$  is the average sum of the reflectance values for the **reference machine** out of all  
5 **test runs** (as calculated in 9.2c of EN 60456:2016<sup>1</sup>).”

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183 In **ZA.5.3**, **replace** c) as follows:

184 “  
 185 c) The washing efficiency index  $I_W$  for the **test series** shall be calculated as follows and rounded to three  
 186 decimal places:

$$187 \quad I_W = \min\left(I_{W,full}, I_{W,\frac{1}{2}}\right)$$

188 where

$I_{W,\frac{1}{2}}$  is the washing efficiency index for **treatment half**;

$I_{W,full}$  is the washing efficiency index for **treatment full**.

189 In **ZA.6.1**, **replace** the first paragraph as follows:

190 “This clause presents the data to be reported for the test **washer-dryer**. The data to be reported for the  
 191 **reference machine** is the same as shown in Annex S of EN 60456:2016<sup>1</sup>.”

192 In **ZA.6.2**, **replace** the first paragraph as follows:

193 “The data for the test **washer-dryer** can be reported in Table ZA.15 of EN 60456:2016<sup>1</sup>.”

194 In **ZA.6.3**, **replace** the first paragraph as follows:

195 “For a **test series** used to determine the performance parameters of a test **washer-dryer** when applying the  
 196 combined **test series** of the **eco 40-60 programme** with **full load**, **half load** and **quarter load** according to  
 197 Annex ZA of EN 60456:2016<sup>1</sup>, the data shown in Table ZA.16, Table ZA.17 and Table ZA.18 of  
 198 EN 60456:2016<sup>1</sup> shall be reported.”

199 In **ZA.6.3**, **replace** the second paragraph as follows:

200 “For **test runs** carried out on the reference machine, the data shown in Table S.2a of EN 60456:2016<sup>1</sup> shall be  
 201 reported.”

202 In **ZA.6.3**, **replace** Table ZA.19 and Table ZA.20 as follows: <https://standards.iteh.ai/catalog/standards/sist/1d92a519-fa07-4716-b4fa-7c7bef01cc95/sist-en-iec-62512-2021-a12-2023>

203 “  
<https://standards.iteh.ai/catalog/standards/sist/1d92a519-fa07-4716-b4fa-7c7bef01cc95/sist-en-iec-62512-2021-a12-2023>