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Committee Ref: SDS/003/05

Date: 2019/01/16

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Dear Member,

DOCUMENT FOR FINAL VOTE AND APPROVAL TO PUBLISH

DEFAULT UK VOTE: Approval
COMMENTS TO christina.allen@bsigroup.com BEFORE 2019/02/22

Please find attached: FprEN 45556 , General method for assessing the proportion of reused components in energy-related products

This document is circulated to National Committees for approval to progress to publication.

- If the UK votes yes or abstains, it is BSI's policy to implement this document as a British Standard with no further input from the Committee.
- If the UK votes no, we have to provide a technical justification at this stage and this will form the basis of additional information in the National Foreword of any resulting British Standard implementation.
- Additional texts to the National Foreword or National Annex will require endorsement from your Committee Chairman.

Note 1) Only technical comments accompanying a negative vote can be submitted at this stage and they have to be submitted on the correct [comment template](#). If you have any queries on how to use the template then please do not hesitate to contact your Committee Secretary.

Note 2) We are obliged to implement all European Standards and our policy is to implement as full a package of International Standards as possible.

Note 3) If you do not consider an International Standard suitable as a British Standard please discuss with your Committee Secretary.

Please notify your Committee 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.

If we do not hear from you by the above date we shall submit a vote of approval to CEN on behalf of the UK committee.

Yours sincerely

Christina Allen
Secretary to SDS/003/05

January 2019

ICS 13.030.50; 29.020; 31.020

English Version

General method for assessing the proportion of reused components in energy-related products

Méthode générale d'évaluation de la proportion de composants réutilisés dans les produits liés à l'énergie

Allgemeines Verfahren zur Bewertung des Anteils an wiederverwendeten Komponenten in energieverbrauchsrelevanten Produkten

This draft European Standard is submitted to CENELEC members for formal vote. Deadline for CENELEC: 2019-03-08.

It has been drawn up by the Technical Committee CEN/CLC/JTC 10. If this draft becomes a European Standard, CEN and 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 CEN and CENELEC in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN and CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN and CENELEC members are the national standards bodies and national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and 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

| | | |
|----|---|-----------|
| 1 | Contents | Page |
| 2 | European foreword | 3 |
| 3 | Introduction | 4 |
| 4 | 1 Scope | 5 |
| 5 | 2 Normative references | 5 |
| 6 | 3 Terms and definitions | 5 |
| 7 | 4 Assessment method for the proportion of reused components in an energy-related | |
| 8 | product | 5 |
| 9 | 4.1 General considerations | 5 |
| 10 | 4.2 Calculation of the proportion of reused components | 6 |
| 11 | 4.2.1 Proportion of reused components by mass on product level | 6 |
| 12 | 4.2.2 Proportion of reused components by number on product level | 6 |
| 13 | 4.2.3 Proportion of reused components by mass balance | 7 |
| 14 | 4.2.4 Proportion of reused components by number balance | 7 |
| 15 | 5 Documenting the assessment of the proportion of reused components | 8 |
| 16 | 5.1 General | 8 |
| 17 | 5.2 Elements of the assessment | 8 |
| 18 | Bibliography | 10 |
| 19 | | |

20 European foreword

21 This document (FprEN 45556:2019) has been prepared by CEN/CLC/JTC 10 “energy-related products -
22 Material Efficiency Aspects for Ecodesign”.

23 This document is currently submitted to the Formal Vote.

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 (to be confirmed or
withdrawn modified when voting)

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

27 The dual logo CEN-CENELEC standardization deliverables, in the numerical range of 45550 – 45559, have
28 been developed under standardization request M/543 of the European Commission and are intended to
29 potentially apply to any product within the scope of the energy-related products (ErP) Directive (2009/125/EC).

30 Topics covered in the above standardization request are linked to the following material efficiency aspects:

31 a) Extending product lifetime.

32 b) Ability to reuse components or recycle materials from products at end-of-life.

33 c) Use of reused components and/or recycled materials in products.

34 These standards are general in nature and describe or define fundamental principles, concepts, terminology or
35 technical characteristics. They can be cited together with other product-specific or product-group standards,
36 e.g. developed by product technical committees.

37 This document is intended to be used by product technical committees when producing product-specific, or
38 product-group, standards.

39 **Introduction**

40 This document provides general methods for assessing the proportion of reused components in an energy-
41 related product. Four calculation methods based on mass of re-used components and the number of reused
42 components are presented. Other methods may exist and be more suitable for certain products or product-
43 groups. While writing product standards on assessing the proportion of reused components product technical
44 committees should apply the most suitable methods for their product-group.

45 **1 Scope**

46 This document deals with the assessment of the proportion of reused components in energy-related products
47 on a generic level, which can be applied at any point in the life of the product.

48 This document is intended to be used by product technical committees when producing product, or product-
49 group, standards.

50 This document can be applied where no product-specific standard exists.

51 Aspects like performance, validation, verification and suitability of reused components are not in the scope of
52 this document.

53 **2 Normative references**

54 The following documents are referred to in the text in such a way that some or all of their content constitutes
55 requirements of this document. For dated references, only the edition cited applies. For undated references, the
56 latest edition of the referenced document (including any amendments) applies.

57 EN 45559:⁻¹, *Methods for providing information relating to material efficiency aspects of energy-related products*

58 **3 Terms and definitions**

59 For the purposes of this document, the following terms and definitions apply. ISO and IEC maintain
60 terminological databases for use in standardization at the following addresses:

61 — IEC Electropedia: available at <http://www.electropedia.org/>

62 — ISO Online browsing platform: available at <http://www.iso.org/obp>

63 Note See CLC/TR 45550:⁻² for additional definitions related to Material Efficiency.

64 **3.1**

65 **component**

66 hardware constituent of a product that cannot be taken apart without destruction or impairment of its intended
67 use

68 Note 1 to entry: A component which is used again with or without alteration is considered a reused component

69 [SOURCE: IEC 62542 definition 3.3, modified “electronic” removed, “device” replaced by “hardware
70 constituent of a product”, Example removed, and Note 1 to entry replaced by “A component which is used again
71 with or without alteration is considered a reused component”]

72 **4 Assessment method for the proportion of reused components in an energy- 73 related product**

74 **4.1 General considerations**

75 As there are no methods available for directly measuring the proportion of reused components in a product it
76 can be only determined indirectly. Therefore, the verification is by means of documented evidence from the
77 manufacturer, supplier and/or authorized distributor. Aspects of traceability, including identification of the reused
78 component or groups of reused components, shall be included in the documentation.

79 There is no obligation to collect information for all components, but only components verified as used can be
80 accounted for as reused components.

¹ Under preparation. Stage at the time of publication: FprEN 45559:2018

² Under preparation. Stage at the time of publication: CLC/prTR 45550:2018

81 NOTE 1 A component which is used again with or without alteration is considered a reused component.

82 NOTE 2 Performance characteristics of reused components can change over time and could be relevant for some
83 product groups. For this document, performance characteristics of components are not taken into account.

84 4.2 Calculation of the proportion of reused components

85 The user of this document shall apply at least one of the here presented formulas to calculate the proportion of
86 reused components in an energy related product in their product standard. Assessment of the proportion of
87 reused components in energy-related products can be based on product level, by assessing each product on
88 its own (as given in 4.2.1 and 4.2.2) or, it can be based on a mass balance or number balance over a period of
89 time (4.2.3 and 4.2.4).

90 The period accounted shall be specified, not exceed one year and shall be representative for the production
91 volume.

92 4.2.1 Proportion of reused components by mass on product level

93 The following formula shall be applied to obtain the proportion of reused components by mass on a product
94 level:

$$95 \quad R_{pm} = \left(\frac{\sum_k m_{re-k}}{m_{tot}} \right) \times 100 \%$$

96 where

97 m_{re} is the mass of the used components or groups of components in the assessed product

98 m_{tot} is the total mass of the product

99 R_{pm} is the proportion of reused components by mass of the product

100 NOTE 1 All masses are expressed in the same unit.

101 NOTE 2 Components mass based calculation is easy to apply consistently across different products within a product
102 group.

103 NOTE 3 In some cases, the mass of a component or a group of components does not correlate to its economic value or
104 environmental impact.

105 4.2.2 Proportion of reused components by number on product level

106 The following formula shall be applied to obtain the proportion of reused components by number on a product
107 level:

$$108 \quad R_{pn} = \left(\frac{\sum_k n_{re-k}}{n_{tot}} \right) \times 100 \%$$

109 where

110 n_{re} is the number of the used components or groups of components in the assessed product

111 n_{tot} is the total number of components in the product

112 R_{pn} is the proportion of reused components by number of the product

113 NOTE 1 Assessment based on the number of components can be applied consistently across different products in a
114 product-group.

115 NOTE 2 It is essential that at a product or product-group level, a common way to identify and count components and
116 groups of components are defined.

117 NOTE 3 In some cases, the number of components or a groups of components do not correlate to their economic value
118 or environmental impact.

119 4.2.3 Proportion of reused components by mass balance

120 The following formula shall be applied to obtain the proportion of reused components by mass balance over the
121 defined period of time:

$$122 \quad R_{bm} = \left(\frac{m_{bt}}{n_{units} \times m_{units}} \right) \times 100 \%$$

123 where,

124 m_{bt} is the total mass of used components or groups of components used in the defined period of the
125 products

126 n_{units} is number of units in the defined period

127 m_{units} is the mass per unit

128 R_{bm} is the total proportion of reused components by mass in the defined period for the assessed products

129 Different products can require different forms to obtain the total mass of reused components, depending on e.g.
130 the complexity of the business, weight of the product, number of products handled in the accounted period. The
131 user of this document shall determine the most suitable approach to evaluate the total mass of reused
132 components in the defined period and document the chosen approach accordingly.

133 4.2.4 Proportion of reused components by number balance

134 The following formula shall be applied to obtain the proportion of reused components by number balance over
135 the defined period of time:

$$136 \quad R_{bn} = \left(\frac{n_{bt}}{n_{units} \times n_{components}} \right) \times 100 \%$$

137 where,

138 n_{bt} is the total number of used components or groups of components used in the defined period

139 n_{units} is number of units in the defined period

140 $n_{components}$ is the total number of components per unit

141 R_{bn} is the total proportion of reused components or groups of components by number in the defined period
142 for the assessed products

143 **5 Documenting the assessment of the proportion of reused components**

144 **5.1 General**

145 The assessment of the proportion of the reused components of <product / product-group> shall be documented.

146 The need to report the proportion of the reused components to the different target audiences shall be assessed,
147 and the data classified within the different sensitivity levels 1, 2, and 3. See Clauses 5.1 and 5.2 of EN 45559.

148 Special care shall be taken to demonstrate the correlation between information on the results of the assessment
149 and the input data and assumptions used.

150 **5.2 Elements of the assessment**

151 The documentation shall have the following structure:

152 **A. General**

153 1. Instigator of the assessment

154 2. Date of report, place, etc.

155 **B. Scope of the assessment**

156 1. Description of product assessed

157 2. Description of assumptions applied, e.g. number of products assessed

158 **C. Input data and approach for the assessment of the proportion of the reused components**

159 1. Description of data and other information used/needed for the assessment, e.g.:

160 — Mass of the used components or groups of components in the assessed product

161 — Total mass of the product

162 — Number of the used components or groups of components in the assessed product

163 — Total number of components in the product

164 — Total mass of used components or groups of components used in the defined period of the
165 products

166 — Number of units in the defined period

167 — Mass per unit

168 — Total number of used components or groups of components used in the defined period

169 — Total number of components or groups of components per unit

170 2. Calculations and accounted period if applicable, e.g.:

171 — Calculation

172 — Accounted period

- 173 3. Methods used in the assessment
- 174 — Proportion of reused components by mass on product level
- 175 — Proportion of reused components by number on product level
- 176 — Proportion of reused components by mass balance
- 177 — Proportion of reused components by number balance
- 178 **D. Output of the assessment**
- 179 1. Result of the assessment covering a list of qualitative and quantitative topic-related content that shall
- 180 be reported to the different target audiences e.g.:
- 181 — Proportion of reused components by mass of the product
- 182 — Proportion of reused components by number of the product
- 183 — Total proportion of reused components by mass in the defined period for the assessed products
- 184 — Total proportion of reused components by number in the defined period for the assessed products
- 185 2. List of applicable references (incl. standards, legislation, and other requirements)

186

Bibliography

187

CLC/TR 45550:-2, *Definitions related to material efficiency*

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189

Directive 2009/125/EC, *establishing a framework for the setting of ecodesign requirements for energy-related products*

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