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English Version

## General method for assessing the proportion of re-used components in energy-related products

To be completed

To be completed

This draft European Standard is submitted to CENELEC members for enquiry. Deadline for CENELEC: 2018-11-09.

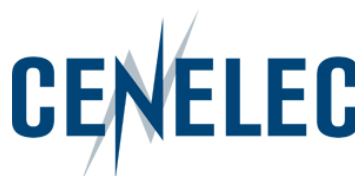
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European Committee for Electrotechnical Standardization  
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## 16 European foreword

17 This document (prEN 45556:2018) has been prepared by CEN/CLC/JTC 10 "Energy-related products - Material  
18 Efficiency Aspects for Ecodesign".

19 This document is currently submitted to the Enquiry.

20 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withdrawn modified when voting)

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

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

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

27 a) Extending product lifetime.

28 b) Ability to re-use components or recycle materials from products at end-of-life.

29 c) Use of re-used components and/or recycled materials in products.

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

33 The present standard is intended to be used by product technical committees when producing product-specific  
34 or product group standards.

## Introduction

This documents provides a general methodology for assessing the proportion of **re-used components** in an Energy-related Product. Two calculation methods based on mass of re-used components and the number of **re-used components** are presented. While writing Product specific standards on assessing the proportion of **re-used components** product specific technical committees should apply the most suitable methods for their product group.

## 1 Scope

This document deals with the assessment of the proportion of **re-used components** in energy-related products on a generic level. All energy-related products are in the scope of this standard.

## 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 45559:<sup>1</sup>, *Methods for providing information relating to material efficiency aspects of Energy-related products*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply. See CLC/TR 45550:<sup>2</sup> for additional definitions related to Material Efficiency.

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

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

### 3.1

#### **component**

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

[SOURCE: IEC 62542 definition 3.3, modified]

### 3.2

#### **reuse**

#### **re-use**

operation by which a product or a part is used again by another user for the same purpose or another purpose for which it was conceived, or by the same user, for another purpose

[SOURCE: EN 45554, definition 3.7]

## 4 Assessment method for the proportion of re-used components in an Energy-related product

### 4.1 General considerations

As there are no methods currently available for directly measuring via a physical test, the number of **re-used components** in a product, this can be only determined indirectly via documental proof, provided by the manufacturer. This requires

1. A consistent approach to categories **re-used components** in a product.
2. A transparent management system to trace the origin of **re-used component** inputs, including an identification number.

<sup>1</sup> Under preparation. Stage at the time of publication: prEN 45559:2018

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

When information is missing, it is assumed the components origin is new. There is no obligation to collect information for all components, but only components that are documented with verifiable re-use as their origin can be accounted as **re-used components**.

NOTE As the amount of re-used components differ depending on the technical lifecycle state the product is in, this assessment can be done during every stage of lifecycle state or when legislation requires it.

## 4.2 Calculation of re-used component index

Product specific technical committees shall apply one of the here presented **re-used component** index ( $R_{com}$ ,  $R_{con}$ ) to calculate the proportion of **re-used components** in an energy related product in their product specific standard. Calculation and verification of the **re-used components** in an Energy-related Product can be based on balancing the mass or number of production input with the output over a certain accounting period not exceeding one year, or on product level by assessing each product on its own.

1) Mass of **re-used components** based index

$$R_{com} = \left( \frac{\sum_k m_{re\ k}}{m_{tot}} \right) \times 100\%$$

where

$m_{re}$  is the mass of **re-used components** used to manufacture the product(s)

$m_{tot}$  is the total mass of the product(s)

$R_{com}$  is the **re-used component** index of a product

NOTE 1 All masses are expressed in the same unit.

NOTE 2 Component mass based calculation ensures a percentage which could be approached consistently across different products. Nevertheless, mass and economic value of components or environmental impact of components may not be well linked for some product groups.

2) Number of **re-used components** based index

$$R_{con} = \left( \frac{\sum_k n_{re\ k}}{n_{tot}} \right) \times 100\%$$

where

$n_{re}$  is the number of **re-used components** used to manufacture the product(s)

$n_{tot}$  is the total number of components in the product(s)

$R_{con}$  is the **re-used component** index of a product

NOTE Component number based calculation ensures a percentage which could be approached consistently across different products. Nevertheless, it is essential that product specific TC's agree on a common way to count components.

## 5 Reporting the proportion of re-used components aspects

### 5.1 General

The product or product-group standard writers shall ensure that their standards include requirements for reporting material efficiency aspects as follows:

- 109 • The assessment of the proportion of reused components in energy-related products prEN 45556 shall be  
110 documented in a report.
- 111 • The assessment report itself is likely to be considered as data sensitivity level <3> in accordance to EN  
112 45559:–<sup>1</sup>.
- 113 • The assessment report shall also include data and information of importance for any results published in  
114 data sensitivity levels <2 and / or 1>, for the different stakeholders.
- 115 • Special care shall be taken to demonstrate transparency and the correlation between information on the  
116 results of the assessment and the input data and assumptions used.

## 117 5.2 Elements of the assessment report

118 The product or product-group standard writers shall ensure that their standard(s) sufficiently cover that when  
119 reporting material efficiency aspects results, data, methods, assumptions, limitations and conclusions shall be  
120 completely and accurately reported.

121 The project report shall follow the following structure:

### 122 a. General aspects

- 123 1. Instigator of the assessment
- 124 2. Date of report, Place, etc.
- 125 3. List of standards applicable to the assessment

### 126 b. Scope of assessment

- 127 1. Description of product assessed
- 128 2. Description of cut-off rules applied

### 129 c. Input data for the assessment

- 130 1. Description of data and other information used/needed for the assessment
- 131 2. Calculations or scoring when relevant
- 132 3. Methods or Tools used in the assessment

### 133 d. Output of the assessment

- 134 1. Result of the assessment covering a list of qualitative and quantitative material efficiency content that  
135 could be reported for different stakeholders
- 136 2. List of applicable references (incl. standards, requirements and policies)

137

## Bibliography

138 CLC/TR 45550:–<sup>2</sup>, *Definitions related to material efficiency*