

SLOVENSKI STANDARD oSIST prEN 45555:2018

01-november-2018

Splošne metode za ocenjevanje možnosti za recikliranje proizvodov, vezanih na energijo

General methods for assessing the recyclability and recoverability of energy related products

Allgemeines Verfahren zur Bewertung der Rezyklierbarkeit und Wiederverwertbarkeit energieverbrauchsrelevanter Produkte

Méthodes générales pour l'évaluation de la recyclabilité et de la valorisabilité des produits liés à l'énergie

Ta slovenski standard je istoveten z: prEN 45555

<u>ICS:</u>

13.020.20 Okoljska ekonomija. Trajnostnost Environmental economics. Sustainability

oSIST prEN 45555:2018

en,fr,de

oSIST prEN 45555:2018



EUROPEAN STANDARD NORME EUROPÉENNE EUROPÄISCHE NORM

DRAFT prEN 45555

August 2018

ICS 13.020.20

English version

General methods for assessing the recyclability and recoverability of energy related products

Allgemeines Verfahren zur Bewertung der Rezyklierbarkeit und Wiederverwertbarkeit energieverbrauchsrelevanter Produkte

This draft European Standard is submitted to CEN members for enquiry. 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. 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.





oSIST prEN 45555:2018

prEN 45555:2018 (E)

Contents

Page

European foreword	
Introduction 4	
1	Scope
2	Normative references
3	Terms and definitions
4	General assessment procedure
5	End-of-life treatment scenario10
6	Design related criteria affecting recyclability and recoverability13
7	Assessment of the recyclability and recoverability of an energy-related product14
8	Assessment of the recyclability and recoverability of critical raw materials20
9	Reporting recyclability and recoverability aspects
Annex	A (informative) Relationship with environmental impacts of recycling and recovery
Bibliography23	

European foreword

This document (prEN 45555:2018) has been prepared by Technical Committee CEN/CLC/JTC 10 "Energy-related products – Material Efficiency Aspects for Ecodesign", the secretariat of which is held by NEC.

This document is currently submitted to the CEN Enquiry.

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

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

a) Extending product lifetime

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

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

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

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

prEN 45555:2018 (E)

Introduction

To close the loop to a circular economy, amongst other measures, an efficient handling of waste is paramount. Recovering materials and energy can reduce environmental impacts over the lifecycle, including reduced extraction of natural resources and associated emissions of primary material production. To judge the recycling potential of an ErP in terms of how easy it is to recycle/recover materials from the product or to what degree a product can undergo recycling/recovery, the concepts of recyclability and recoverability are introduced/used.

NOTE The waste hierarchy, introduced in Directive 2008/98/EC, ranks different waste management principles (from highest to lowest priority): prevention, preparing for re-use, recycling, recovery, disposal.

Once an ErP has reached its end-of-life (EoL) and has become waste, the ErP can be either prepared for re-use, recycled and/or recovered. This document elaborates on the product characteristics which are relevant for recyclability and recoverability of a whole ErP. Focus is therefore on abilities of the product itself and not on recycling and recovery processes. However, the availability and efficiencies of state-of-the art recyclability rate of an ErP. The outcome of the recyclability and recoverability assessment may be affected by for instance technological changes over time or from the location, where the actual end-of-life process is operated. For the assessment of the recyclability/recoverability of an ErP, it is assumed that the whole ErP undergoes the respective EoL treatment process. It is assumed that no re-use takes place in this assessment. In order to be able to compare recyclability and recoverability rates of different products, one EoL treatment scenario needs to be used. Selection of the EoL treatment scenarios should be done by the user of this document.

This document describes how an end-of-life (EoL) treatment scenario has to be chosen (Clause 5) by the user of this document. Based on this scenario, the recyclability/recoverability rate of an ErP can be assessed. While Clause 6 describes design related considerations to set criteria for the recyclability and recoverability assessment of an ErP, subclause 7.1 presents the general considerations for quantifying the recyclability/recoverability. A detailed recyclability/recoverability assessment (see subclause 7.2) and a simplified recyclability/recoverability assessment (see subclause 7.3) are described in Clause 7. Further considerations on the assessment of the recyclability and recoverability of critical raw materials are given in Clause 8. Provisions on the communication of the result of the recyclability/recoverability assessment are shown in Clause 9.

1 Scope

This document provides a general methodology for:

- Assessing the recyclability of energy-related products;
- Assessing the recoverability of energy-related products;
- Assessing the ability to access or remove certain components, assemblies, materials or substances from products to facilitate their extraction at the end-of-life for ease of treatment, recycling and other recovery operations;
- Assessing the recyclability of critical raw materials from energy-related products.

This document defines generic methods and parameters which are applicable for the development of product-specific standards in order to calculate product-specific recyclability and recoverability rates. This document cannot be applied directly to a product-group because a correct assessment can only be done in a product-specific way. This document defines a series of parameters which may be considered to calculate product-specific recyclability and recoverability indices.

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 45558:—,¹ General method to declare the use of critical raw materials in energy-related products

EN 45559:—², 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.

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

NOTE See CLC/prTR 455501 for additional definitions.

3.1

end-of-life treatment

operation of any kind by which an end-of-life product that has become waste is recovered or disposed

3.2

end-of-life treatment scenario

description of a process flow resulting from end-of-life treatment including the data needed to calculate recyclability and recoverability rates

 $^{^{\}rm 1}$ Under preparation. Stage at time of publication: prEN 45558

² Under preparation. Stage at time of publication: prEN 45559

prEN 45555:2018 (E)

3.3

energy recovery

production of useful energy through direct and controlled combustion or other processing of waste

[SOURCE: IEC 62635:2012, modified Note 1 to entry deleted]

3.4

material recovery

recovery operation of any kind, excluding energy recovery and the reprocessing into materials which are to be used as fuel

[SOURCE: EN 50625-1:2014, 3.23, modified formatting and sentence structure]

3.5

recovery

operation of any kind, the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy

Note 1 to entry: Recovery operations include material recovery and energy recovery

[SOURCE: Directive 2008/98/EC, modified: addition of Note 1 to entry]

3.6

recoverability

ability of a waste product to be recovered

[SOURCE: IEC 62635:2012, modified "based on actual practices" deleted]

3.7

recoverability rate

ratio of the sum of recoverable products, product parts, materials mass to total waste product mass reprocessed

[SOURCE: IEC 62635:2012, modified "the sum of" added]

3.8

recycling

recovery operation of any kind, by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes

Note 2 to entry: It includes organic recycling but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations

[SOURCE: Directive 2008/98/EC, modified: moved second sentence of definition to Note 1 to entry]

3.9

recyclability

ability of a product to be recycled at end-of-life

[SOURCE: IEC 62635:2012, modified "based on actual practices" replaced by "at end-of-life"]