BAM
Bundesanstalt für Materialforschung und -prüfung

Sicherheit in Technik und Chemie

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CIRCULAR ECONOMY IN DER ESPR

vom Rechtstext in die Praxis

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Einleitung



Einleitung



Ecodesgn for Sustainable Products Regulation (ESPR)

- Proposal, 03/2022, Introduction, 2. Absatz

"[…] The proposal seeks to make sustainable products the norm in the EU. It addresses product design, setting new requirements to make products ***more durable, reliable, reusable, upgradable, reparable, easier to maintain, refurbish and recycle****, and energy and resource efficient […]"*

Einleitung

Ecodesgn for Sustainable Products Regulation (ESPR)

- Konsolidierte Fassung EP, 04/2024, Präambeln + Artikel 5



(6) "[…] setting of new ecodesign requirements to improve product ***durability, reliability, repairability, upgradability, reusability and recyclability****, improve possibilities for the* ***refurbishment*** *and maintenance of products […]"*

(30) "[…] his Regulation should enable the establishment of ***repairability or durability scores*** *[…]"*

Einleitung

Beispiele neuer Produktanforderungen (über Energieeffizienz hinaus)

- Smartphones und Tablets
  - ***reparability*** → Ersatzteilverfügbarkeit, Reparaturanleitungen, Lieferzeiten
  - ***durability*** → Degradation als f(Ladezyklen), Wasser- und Staubeintrag, Stoßfestigkeit, software updates

- PCs, Wäschetrockner, Staubsauger
  - In Diskussion → Orientierung an Produktanforderungen zu Smartphone und Tablets

Einleitung

Produktanforderungen

- Weitere Produkteigenschaften folgen
  - Working Plan: Recycled content, durability, Firmware und Software, CRM

Typology of requirement	Energy saving potential 2030 (related to use or material efficiency)
Recycled content	160PJ (material content)
Durability, firmware and software	At least 175-1 052 PJ (material content)
Scarce, environmentally relevant and critical raw materials	High resource potential

The requirements are theoretically applicable to all energy related products; dedicated preparatory studies will be needed to help identifying the product categories that are most relevant for potential regulatory approaches.

5.2. *Standardisation work*

Enforcing ecodesign requirements or labelling of products based on their respective characteristics requires clear definitions of how performance is defined and can be tested for any given product. To this end, harmonised technical standards defining suitable test methods can help manufacturers – if they apply the methods therein - enjoy 'presumption of conformity' for demonstrating compliance with legal requirements. Technical standardization work is a vital but often overlooked part of implementation, and the recent experience demonstrates the importance of initiating this work as early as possible in parallel with the preparation of the

Einleitung



Vom Rechtstext in die Praxis..

..durch rechtsetzungsbegleitende..

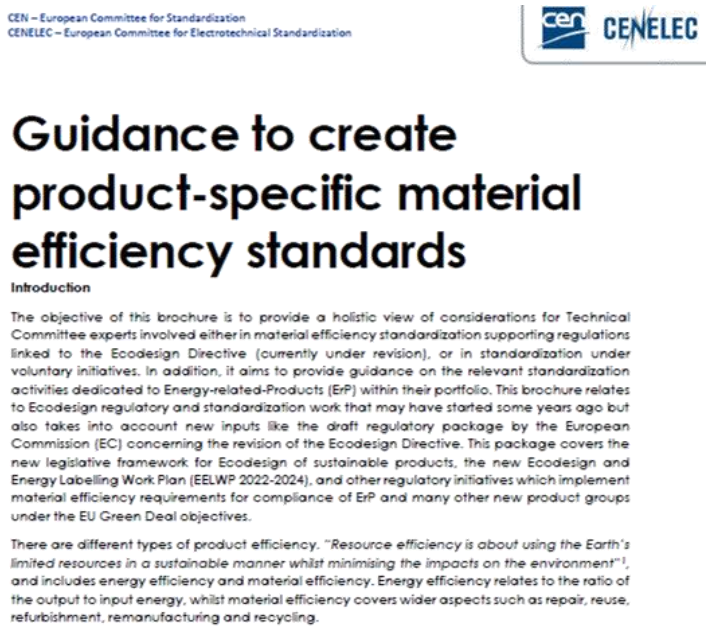
..sowie proaktive Normungsarbeit!

Vom Rechtstext in die Praxis

EU-Normungsgremien - produktgruppenübergreifend

- **Ecodesign Coordination Group**
  - TF6 Guidance Material- und Ressourceneffizienz
  - Leitfäden mit Fokus Ökodesign-RL / ESPR
  - ESPR führt zwangsläufig zur Scope-Erweiterung

  - Revision in 2024:
    - Berücksichtigung der ESPR-Inhalte
    - Ergänzung der EN45560
    - Aufnahme des TC473 Circular Economy



CEN – European Committee for Standardization
CENELEC – European Committee for Electrotechnical Standardization

Guidance to create product-specific material efficiency standards

Introduction

The objective of this brochure is to provide a holistic view of considerations for Technical Committee experts involved either in material efficiency standardization supporting regulations linked to the Ecodesign Directive (currently under revision), or in standardization under voluntary initiatives. In addition, it aims to provide guidance on the relevant standardization activities dedicated to Energy-related-Products (ErP) within their portfolio. This brochure relates to Ecodesign regulatory and standardization work that may have started some years ago but also takes into account new inputs like the draft regulatory package by the European Commission (EC) concerning the revision of the Ecodesign Directive. This package covers the new legislative framework for Ecodesign of sustainable products, the new Ecodesign and Energy Labelling Work Plan (EELWP 2022-2024), and other regulatory initiatives which implement material efficiency requirements for compliance of ErP and many other new product groups under the EU Green Deal objectives.

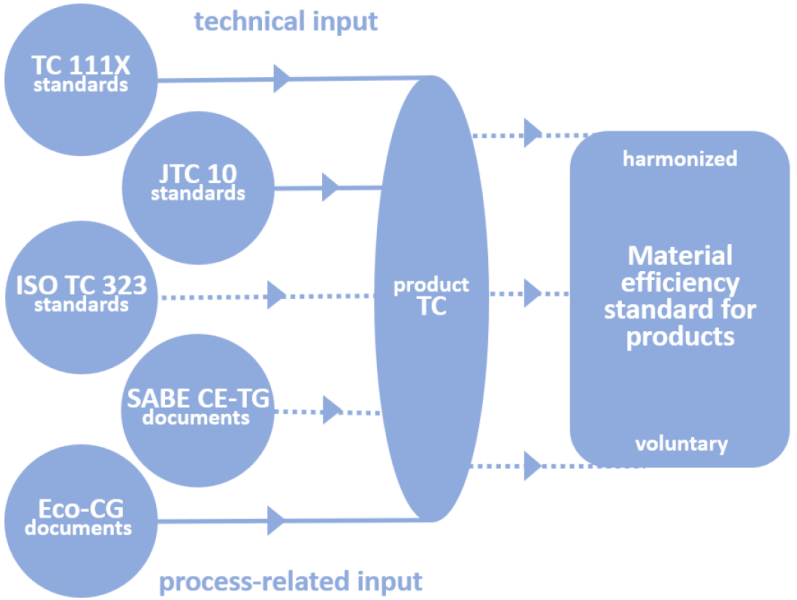
There are different types of product efficiency. *"Resource efficiency is about using the Earth's limited resources in a sustainable manner whilst minimising the impacts on the environment"*[1], and includes energy efficiency and material efficiency. Energy efficiency relates to the ratio of the output to input energy, whilst material efficiency covers wider aspects such as repair, reuse, refurbishment, remanufacturing and recycling.

Vom Rechtstext in die Praxis

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Vom Rechtstext in die Praxis

EU-Normungsgremien – produktgruppenübergreifend + mandatiert

- **JTC10 Material Efficiency Aspects for Ecodesign**
  - Generischen Normen zu Zirkularitätsaspekten von Produkten → EN4555x-Reihe
    - EN 45550 Definitions related to materials efficiency of ErPs
    - EN 45552 General method for the assessment of the durability of ErPs
    - EN 45553 General method for the assessment of the ability to remanufacture ErPs
    - EN 45554 General methods for the assessment of the ability to repair, reuse and upgrade ErPs
    - EN 45555 General methods for assessing the recyclability and recoverability of ErPs
    - EN 45556 General method for assessing the proportion of re-used components of ErPs
    - EN 45557 General method for assessing the proportion of recycled material content of ErPs
    - EN 45558 General method to declare the use of critical raw materials in ErPs
    - EN 45559 Methods for providing information relating to material efficiency aspect of ErPs

Schlegel M.-C., McAlister C., Spiliotopoulos C. Ecodesign spinning towards the circular economy – the contribution of new standards on resource efficiency, 3rd PLATE Conference Berlin, Germany, 18-20 September 2019

Vom Rechtstext in die Praxis

EU-Normungsgremien – produktgruppenübergreifend + freiwillige Ergänzung

- **JTC10 Material Efficiency Aspects for Ecodesign** + TF6 Guidance + EN45560
  - Generischen Normen zu Zirkularitätsaspekten von Produkten → EN4555x-Reihe geschlossen
    - EN 45550 Definitions related to materials efficiency of ErPs
    - Ecodesign Coordination Group – TF6 Guidance to create product-related material efficiency standards
    - EN 45552 General method for the assessment of the durability of ErPs
    - EN 45553 General method for the assessment of the ability to remanufacture ErPs
    - EN 45554 General methods for the assessment of the ability to repair, reuse and upgrade ErPs
    - EN 45555 General methods for assessing the recyclability and recoverability of ErPs
    - EN 45556 General method for assessing the proportion of re-used components of ErPs
    - EN 45557 General method for assessing the proportion of recycled material content of ErPs
    - EN 45558 General method to declare the use of critical raw materials in ErPs
    - EN 45559 Methods for providing information relating to material efficiency aspect of ErPs
    - EN 45560 Method to achieve circular designs of products

Schlegel M.-C. & Giegerich, J. Kicking the can down the Circular Economy Road – Basic needs in Standardization for Electronics- and ICT-products, PLATE Product Lifetime and the Environment Conference, 2023

Vom Rechtstext in die Praxis

Neuausrichtung der EN4555x-Reihe

EN 45558 ED. 2 rev.

April 2024

ICS 13.020.30; 29.020; 31.020

English Version

General method to declare the use of critical raw materials in ~~energy-related~~ products

Méthode générale de déclaration de l'utilisation de matières premières critiques dans les produits ~~liés à l'énergie~~

Allgemeines Verfahren zur Deklaration der Verwendung kritischer Rohstoffe in ~~energieverbrauchsrelevanten~~ Produkte

Vom Rechtstext in die Praxis

Neuausrichtung der EN4555x-Reihe

Scope

The main intended use of this document is to provide a means for information on the use of CRMs to be exchanged up and down the supply chain and with other relevant stakeholders.

Potential users of this document are any public, private or social enterprises involved in the production of physical products, such as manufacturers (including SMEs) and other organisations in the product supply chain. It is also relevant to European market surveillance and trade authorities as well as European policy makers.

This document is horizontal in nature and can be applied directly to any type of product that fall under the scope of JTC 10.

This document proposes a standardized format for reporting use of CRMs in products by applying the EN (ISO-)IEC 82474-1 materials declaration standard. However, this document does not provide or determine any specific method or tool to collect CRM data.

Process chemicals, Emissions during product manufacturing and packaging are not in scope of this document.

NOTE For the purpose of this document, the following products are excluded: food, feed, medicinal products for human use, veterinary medicinal products, living plants, animals and microorganisms, products of human origin, products of plants and animals relating directly to their future reproduction.

Vom Rechtstext in die Praxis

EU-Normungsgremien – Anfragen (KOM) + Eigeninitiative (CEN/CLC)

- **Rechtsetzungsbegleitende Normung**, Standardisation Request Ad-hoc Groups
  - Ecodesign requirements for smartphones, mobile phones other than smartphones, cordless phones and slate tablets → Bezug zu EN45552, EN45555 und EN45559
  - Ecodesign requirements for servers and data storage products → Bezug zu EN45555 und EN45559

- **Proaktive Normungsarbeit,** TC59X-WG23 Material Efficiency
  - Funktionsbeständigkeit (durability) von Waschmaschinen, Basis: EN45552 Durability
  - Weitere TC59X-WGs haben die Arbeit aufgenommen..

Zusammenfassung

Transformation der Wirtschaft → Transformation der Produkte

- Legislative setzt zunehmend „Materialeffizienz"anforderungen
  - Bsp.: Smartphones (VO + SReq) → Anzahl Ladezyklen, Software Updates, etc.
- Normung zunehmend an Materialeffizienz interessiert
  - Bsp.: CEN/CLC TC59X-WG23 → Lebensdauertest für Waschmaschinen
- EN4555x-Reihe als Grundlage für Materialeffizienz von Produkten
  - Anpassung der Normenreihe durch Revision
  - JTC10 seitens EU-KOM um Unterstützung bei ESPR-Umsetzung gebeten → zugesagt

Zusammenfassung



Rechtssetzungsbegleitende sowie..

..proaktive Normungsarbeit als Mittel..

.. beiderseitig (KOM+CEN/CLC) erkannt!