

© Copyright SEK Svensk Elstandard. Reproduction in any form without permission is prohibited.

Produktkategoriregler för livscykelanalys av elektroniska och elektriska produkter och system

Product category rules for life cycle assessments of electronic and electrical products and systems

Som svensk standard gäller europastandarden EN 50693:2019. Den svenska standarden innehåller den officiella engelska språkversionen av EN 50693:2019.

ICS 13.020.20; 29.020.00

Denna standard är fastställd av SEK Svensk Elstandard, som också kan lämna upplysningar om **sakinnehållet** i standarden.
Postadress: Box 1284, 164 29 KISTA
Telefon: 08 - 444 14 00.
E-post: sek@elstandard.se. Internet: www.elstandard.se

Standarder underlättar utvecklingen och höjer elsäkerheten

Det finns många fördelar med att ha gemensamma tekniska regler för bl a mätning, säkerhet och provning och för utförande, skötsel och dokumentation av elprodukter och elanläggningar.

Genom att utforma sådana standarder blir säkerhetsfordringar tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

Många standarder inom elområdet beskriver tekniska lösningar och metoder som åstadkommer den elsäkerhet som föreskrivs av svenska myndigheter och av EU.

SEK är Sveriges röst i standardiseringsarbetet inom elområdet

SEK Svensk Elstandard svarar för standardiseringen inom elområdet i Sverige och samordnar svensk medverkan i internationell och europeisk standardisering. SEK är en ideell organisation med frivilligt deltagande från svenska myndigheter, företag och organisationer som vill medverka till och påverka utformningen av tekniska regler inom elektrotekniken.

SEK samordnar svenska intressenters medverkan i SEKs tekniska kommittéer och stödjer svenska experters medverkan i internationella och europeiska projekt.

Stora delar av arbetet sker internationellt

Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

Standardiseringsarbetet inom SEK är organiserat i referensgrupper bestående av ett antal tekniska kommittéer som speglar hur arbetet inom IEC och CENELEC är organiserat.

Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

Var med och påverka!

Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

SEK Svensk Elstandard

Box 1284
164 29 Kista
Tel 08-444 14 00
www.elstandard.se

English Version

Product category rules for life cycle assessments of electronic and electrical products and systems

Règles de définition des catégories de produits pour l'analyse du cycle de vie des produits et systèmes électriques et électroniques

Verfahren zur quantitativen, umweltgerechten Produktgestaltung durch Ökobilanzen und Umweltdeklarationen mittels Produktkategorieeregeln für elektronische und elektrotechnische Geräte

This European Standard was approved by CENELEC on 2019-08-12. 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.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists 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.

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



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

Contents

Page

European foreword.....	4
Introduction.....	5
1 Scope	6
2 Normative references	6
3 Terms and definitions	6
4 Product life cycle assessment	12
4.1 General.....	12
4.2 Product Category Rules.....	13
4.2.1 General.....	13
4.2.2 Functional unit and reference flow description	13
4.2.3 System boundary	15
4.2.4 Life cycle inventory.....	17
4.2.5 Allocation rules.....	19
4.2.6 Units	19
4.2.7 Data quality	19
4.3 Development of scenarios	20
4.3.1 General.....	20
4.3.2 Transportation scenarios.....	21
4.3.3 Use scenarios	21
4.3.4 End-of-life scenarios	21
4.4 Life cycle impact assessment	22
4.5 LCA report	23
4.5.1 General.....	23
4.5.2 Scope of the study	23
4.5.3 Life cycle inventory.....	23
4.5.4 Environmental impact assessment	23
4.5.5 Additional environmental information.....	24
5 Requirements for the development of PSR for EEPS.....	25
Annex A (normative) Additional Rules	26
A.1 Rule(s) for extrapolation to a homogenous product family	26
A.2 Rules applying for the aggregation of environmental impacts on system level	26
Annex B (informative) Recommended impact categories.....	27
B.1 General.....	27
B.2 Additional environmental information.....	30
Annex C (informative) Correlation with the Product Environmental Footprint (PEF) Initiative of the European Commission	31

Annex D (informative) Correlation with EN 15804 standard	36
Annex E (informative) General content of a product's environmental declaration	38
E.1 General	38
E.2 List of information in environmental declarations	38
E.2.1 Information about the manufacturer	38
E.2.2 Description of the product family, the reference product and its packaging	38
E.2.3 Constitutive materials and substances	38
E.2.4 Information on life cycle stages and potential impacts	39
Annex F (informative) Example of a product's environmental declaration	40
F.1 General	40
F.2 Basic example	40
Annex G (informative) Recovery activities: Allocation, calculation and default values	44
G.1 Circular formula	44
G.2 Formula without benefits	44
G.3 Formula with benefits	45
G.4 Formula with net benefits	46
G.5 Default values for R_1, R_2 and R_3	47
Bibliography	49

European foreword

This document (EN 50693:2019) has been prepared by CLC/TC 111X "Environment".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2020-08-12
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2022-08-12

The TC 111X Working Group 8 has been assigned to deal with the NWIP to define product category core rules for life cycle assessment as basis for environmental declarations. This document has been elaborated to ensure a harmonized and compatible approach through harmonized methods of assessing the environmental performance and providing environmental declarations for electrical and electronic products and systems (EEPS).

Key points:

- a) requirements how to conduct life cycle assessments for environmental declarations;
- b) requirements how to compile an associated life cycle assessment report;
- c) requirements how to develop product specific rules in vertical, product specific technical committees.

It is the intention of the working group that this document, once finalized as European standard, will be further processed to an international consensus in IEC according to the UAP procedure agreement between CENELEC and IEC.

Future standards defining product specific rules have to be consistent with this standard during their preparation. Any product specific standard already including these topics, e.g. EN 50598-3, should adapt their content to this standard within their usual maintenance circles.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Introduction

In the recent years, environmental aspects of electrical and electronic products and systems gained in importance for interested parties, such as customers and regulators.

In addition to qualitative approaches already widely applied in the context of environmental conscious design process, quantitative information on the potential environmental impacts of the full life cycle of products gained further interest. This generates the need to provide harmonized rules for the underlying life cycle assessment (LCA) in order to provide robust and consistent quantitative environmental data on electrical and electronic products and systems (EEPS), as well as to enable data aggregation at system level, like e.g. buildings, power drive systems and control cabinets.

The definition of product category rules (PCR), derived from EN ISO 14025, is an established method for a consistent approach by setting minimum quality standards for life cycle assessment in context to environmental product declarations (EPD) and hence are now defined as core rules in this standard for the variety of electrical and electronic products and systems.

On the base of the overarching PCR set out as core rules for EEPS, product specific rules (PSR) should be elaborated to further detail the requirements for the LCA in the specific context of the products or systems in scope. This can be done e.g. by product specific standardization committees or environmental declaration programs.

1 Scope

This document defines product category rules (PCR) for electronic and electrical products and systems (EEPS). It specifies the process and requirements on how to conduct life cycle assessment in the context of environmental declarations.

PCR is complemented by additional product-specific rules (PSR), which further define e.g. functional units and default scenarios in the product-specific context. Therefore, it also provides guidance on how to develop PSR in corresponding technical committees.

This document provides common rules for:

- a) life cycle assessment (LCA), including the requirements for developing default scenarios;
- b) the LCA report;
- c) the development of product specific rules.

This document provides further guidelines for environmental declarations.

The basic LCA principles and framework are based on the EN ISO 14040 series of standards (i.e EN ISO 14040 and ISO 14044), and therefore out of scope of the 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 ISO 14040, *Environmental management - Life cycle assessment - Principles and framework (ISO 14040)*

EN ISO 14044:2006, *Environmental management - Life cycle assessment - Requirements and guidelines (ISO 14044:2006)*

EN ISO 14020, *Environmental labels and declarations - General principles (ISO 14020)*

EN ISO 14021:2016, *Environmental labels and declarations - Self-declared environmental claims (Type II environmental labelling) (ISO 14021:2016)*

EN ISO 14025, *Environmental labels and declarations - Type III environmental declarations - Principles and procedures (ISO 14025)*

CEN ISO/TS 14027, *Environmental labels and declarations – Development of product category rules*