SLOVENSKI STANDARD
oSIST prEN 15804:2008

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Trajnost gradbenih objektov - Okoljske deklaracije na proizvodih - Pravila za kategorije proizvodov

Sustainability of construction works - Environmental product declarations - Product category rules

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13.020.99	Drugi standardi v zvezi z varstvom okolja	Other standards related to environmental protection
91.040.01	Stavbe na splošno	Buildings in general

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ICS

English Version

Sustainability of construction works - Environmental product declarations - Product category rules

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 350.

If this draft becomes a European Standard, CEN 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.

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Foreword

This document (prEN 15804:2008) has been prepared by Technical Committee CEN/TC 350 “Sustainability of construction works”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

Introduction

This European standard provides Product Category Rules for all construction products. It provides a structure to ensure that all Environmental Product Declarations (EPD) of construction products, services and construction processes are derived, controlled and presented in a harmonised way.

The standardisation process has taken place in an open consultation, as required in ISO 14025. All common issues are covered horizontally (all product types) as far as possible, which minimises vertical (sector specific) deviations.

The EPD information is expressed in information modules, which allows easy organisation and expression of data packages throughout the life cycle of the product. The approach requires that the underlying data should be consistent, reproducible and comparable.

The EPD is expressed in a form that allows aggregation (summation) to provide complete information for buildings. This standard does not deal with aggregation for the building level nor does this standard describe the rules for applying EPD in building assessment. These rules will be found in the future standard WI 350003, „Use of EPD”.

This standard does not define requirements for developing and operating EPD programs. These requirements are found in ISO 14025.

The standard deals only with a limited number of indicators for which quantification is available with sufficient experience. Future revisions may incorporate further agreed indicators.

This European Standard is part of a suite of standards that are intended to provide the means for the declaration of environmental performance of building products.

Other relevant standards are the future standards:

— prEN 15643-1, Sustainability of construction works - Integrated assessment of building performance - Part 1: General framework

— prEN 15643-2, Sustainability of construction works - Integrated assessment of building performance - Part 2: Framework for the assessment of environmental performance

— WI 350002 Sustainability of construction works – Assessment of environmental performance of buildings – Calculation methods

— WI 350003 Sustainability of construction works - Assessment of environmental performance of buildings - Use of the EPD

— WI 350006 TR Generic data

— WI 350005 EN Communication format

1 Scope

This voluntary European standard provides product category rules for Type III environmental declarations for all European construction products and services.

The PCR:

— defines the indicators and other parameters to be declared and the way in which they are collated and reported,

— includes the rules for calculating the Life Cycle Assessment, Life Cycle Inventory or the information modules underlying an EPD, including the specification of the quality of the applied data,

— describes which stages of a product's life cycle are considered in the EPD and which processes are included in the life cycle stages,

— defines rules for the development of scenarios,

— includes the rules for calculating and reporting any relevant additional environmental information for a product, construction process and service where necessary,

— defines the conditions under which construction products can be compared based on the information provided by EPD.

For the EPD of services the same rules and requirements apply as for the EPD of construction products.

NOTE In this standard the EPD is an abbreviation for 'environmental product declaration', which is intended to be synonymous with the designation 'Type III environmental declaration'. In the practice of developing Type III environmental declarations, programs or their declarations are referred to by various names such as eco-profile, environmental declaration of product, environmental product declaration (EPD), or environmental profile.

2 Normative references

The following referenced documents are indispensable for the application 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.

ISO 15686-1, *Buildings and constructed assets — Service life planning — Part 1: General principles*

ISO/DIS 15686-8, *Buildings and constructed assets — Service life planning — Part 8: Reference service life and service-life estimation*

ISO 21930:2007-10, *Sustainability in building construction — Environmental declaration of building products (ISO 21930:2007)*

ISO 14025:2006-07, *Environmental labels and declarations — Type III environmental declarations — Principles and procedures (ISO 14025:2006)*

ISO 14040:2006-07, *Environmental management — Life cycle assessment — Principles and framework (ISO 14040:2006)*

ISO 14044:2006-07, *Environmental management — Life cycle assessment — Requirements and guidelines (ISO 14044:2006)*

3 Terms and definitions

3.1
ancillary input:
material input that is used by the unit process producing the product, but which does not constitute part of the product

[ISO 14040]

3.2
product category rules
PCR
set of specific rules, requirements and guidelines for developing Type III environmental declarations for one or more product categories

[ISO14025]

3.3
type III environmental declaration
environmental declaration providing quantified environmental data using predetermined parameters and, where relevant, additional environmental information

NOTE 1 The predetermined parameters are based on the ISO 14040 series of standards, which is made up of ISO 14040, ISO 14041, ISO 14042 and ISO 14043.

NOTE 2 The additional environmental information may be quantitative or qualitative.

[ISO14025]

3.4
life cycle assessment
LCA
compilation and evaluation of the inputs, outputs and the potential environmental impacts of a product system throughout its life cycle

[ISO14044]

3.5
life cycle inventory analysis
LCI
phase of life cycle assessment involving the compilation and quantification of inputs and outputs for a product throughout its life cycle

[ISO 14040]

3.6
information module
compilation of data to be used as a basis for a Type III environmental declaration covering a unit process or a combination of unit processes that are part of the life cycle of a product

[ISO 14025]

3.7
construction product
item manufactured or processed for incorporation in *construction works*

3.8
construction services
activities that support the construction process or its maintenance

3.9
environmental performance of construction products
effectiveness of a construction product relative to a some notional scale of environmental behaviour

3.10
scenarios
collection of assumptions concerning future behaviour resulting from an imagined sequence of possible events

3.11
elements of construction
parts of a construction having a number of products in established ratios to each other

3.12
additional technical information
information that forms part of the EPD by providing a basis for comparability and for the development of scenarios

3.13
upstream, downstream process
process(s) that either precedes (upstream) or follows (downstream) a given life cycle stage

3.14
functional unit:
quantified performance of a product system for use as a reference unit

NOTE Adapted from ISO 14025.

3.16
product system
collection of unit processes with elementary and product flows, performing one or more defined functions, and which models the life cycle of a product

[ISO 14040]

3.17
declared unit
quantity of a construction product for use as a reference unit in an EPD (3.17) for an environmental declaration based on an information module (3.6)

EXAMPLE Mass (kg), Volume (m^3)

NOTE Adapted from ISO 21930.

3.18
validity of the EPD
period during which an EPD is considered effective without further revision

3.19
average data
data representative of a product, product group or service, provided by more than one supplier

NOTE The product group or service can contain similar products or services.

3.20
specific data
data representative of a product, product group or service, provided by one supplier

3.21
programme operator
body or bodies that conduct a Type III environmental declaration programme (3.3)

3.22
third party
person or body that is recognized as being independent of the parties involved, as concerns the issues in question

NOTE "Parties involved" are usually supplier ("first party") and purchaser ("second party") interests.

4 Symbols and Abbreviations

EPD Environmental Product Declaration,

PCR Product category rules,

LCA Life Cycle Assessment,

LCI Life Cycle Inventory,

LCIA Life Cycle impact Assessment,

RSL Reference Service Life,

ESL Estimated Service Life,

NPD not provided data.

5 General aspects for Product Category Rules for EPD of construction products and services

5.1 Objectives

The objective of an EPD is to provide an environmental quantification for a product. The purpose of EPD in the construction sector is to provide the basis for assessing buildings and identifying those, which cause less stress to the environment. This is accomplished through the communication of verifiable, accurate, not misleading environmental information for the products and their applications, thereby supporting scientifically based, fair choices and stimulating the potential for market-driven continuous environmental improvement.

The objective of the PCR is to provide the rules to ensure:

— the provision of verifiable, consistent and comparable data for EPD, based on LCA (covering the whole life cycle), describing the environmental performance of construction products on a fair and scientific basis;

— the provision of verifiable, consistent and comparable product related technical data or scenarios for the assessment of the environmental performance of buildings;

— the provision of verifiable, consistent and comparable product related technical data or scenarios for the assessment of the health and comfort performance of buildings;

— informed comparisons between construction products in the context of their application in a building for purchasers and users of construction products;

— the communication of the environmental performance of construction products in particular from business to business, e.g. along the supply chain;

— the communication of the environmental performance of construction products to consumers if relevant, e.g. in a “do it yourself” store.

Declarations based on these PCR are not comparative assertions.

5.2 Information modules of construction products

In the development of EPD, all relevant environmental aspects of the product throughout its life cycle shall be taken into consideration and become part of the declaration. If the aspects considered to be relevant are not calculated for all stages of the life cycle then this shall be stated and justified.

This PCR requires the provision of pre-selected indicators for the “product stage” (see clause 9 for indicators and clause 6.2 for life cycle stages). In this case the EPD is not based on a LCA covering all life cycle stages but only on the product stage information module including raw material supply, transports and manufacturing; it is then said to be “cradle to gate”. There is also the option for calculating pre-selected indicators for other life cycle stages and information modules such as the “construction stage”, “maintenance” “transport” or “final deposition” stages.

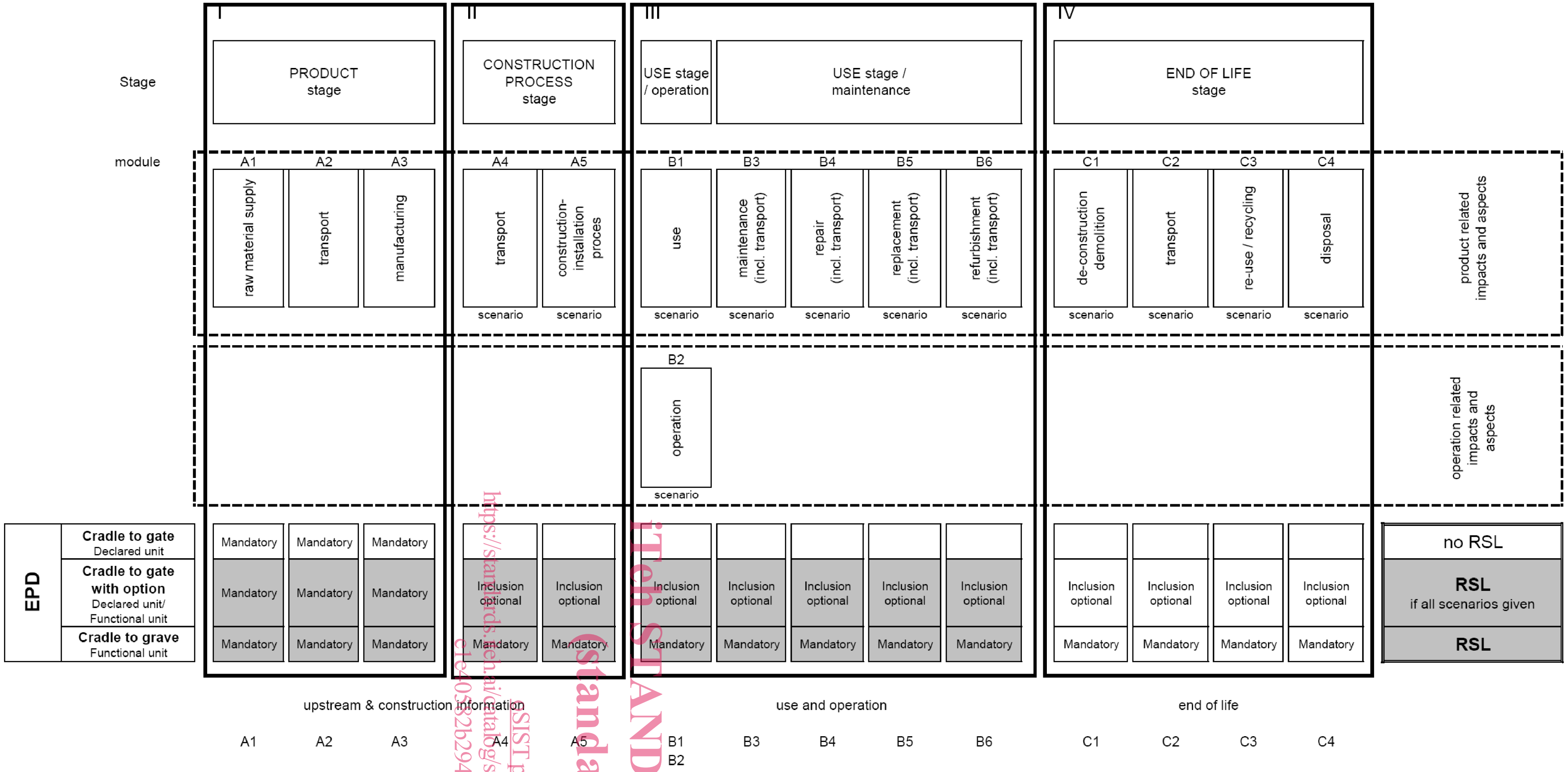
The data from any information module, calculated according to this PCR is addable with data from any other module and if all modules from all life cycle stages are added a complete LCA for the construction product is produced, provided there are no data gaps or overlaps. This is the principle of modularity.

An EPD that includes all life cycle stages, such as the product stage, installation into the building, use and maintenance, replacements, demolition, recycling and disposal is said to be „cradle to grave” and becomes an EPD of construction products based on a LCA. Information modules and „cradle to grave” EPD are illustrated in Figure 1.

The EPD of an assembly or element of construction shall incorporate the results of the EPD or information modules of all the assembled materials, construction products and processes.

NOTE 1 The EPD of an assembly or element of construction can incorporate the results of the EPD or information modules of services, e.g. maintenance.

NOTE 2 Information modules can supply information for processes for which there is no EPD available, e.g. a cleaning process.



Key

A1 raw material supply
A2 transport
A3 manufacturing
A4 transport
A5 construction - installation process

B1 Use; installed product
B2 Operational Energy Use
B2 Operational Energy Use
B2.1 Operational Energy Use – heating
B2.2 Operational Energy Use – cooling
B2.3 Operational Energy Use – ventilation
B2.4 Operational Energy Use - hot water
B2.5 Operational Energy Use – lighting
B2.6 Operational Energy Use - building automation and control

B3 Maintenance
B4 Repair
B5 Replacement

C1 deconstruction
C2 transport
C3 recycling / re-use
C4 Disposal

Figure 1 — Illustration of mandatory and optional elements and information modules for construction products

NOTE 3 It is possible to have an EPD for a substance or preparation (e.g. cement), for a product (e.g. window), for a service (e.g. cleaning service as part of maintenance) and for an assembly and/or a construction element (e.g. wall) or a technical construction service (e.g. elevator).

The requirements of this standard apply to the EPD of construction products. They also apply to EPD of elements of construction. However the EPD of the element takes into account the quantities of the individual products included in the element of construction. The same logic applies for complete buildings.

5.3 Comparability of EPD of construction products

Comparison of the environmental performance of construction products using the information supplied by EPD shall only be carried out on building level. This means comparisons shall be based on

— A common functional unit (see 6.4.1);

— Consideration of all stages of the product's life cycle;

— The functional equivalent of the building, where relevant to the product.

For example:

— Comparisons carried out using cradle to gate EPD require additional scenarios for the use stage and end of life stage;

— Comparisons of construction products shall be based on the same conditions for use in the building.

Comparability of EPD of construction products shall be in accordance with the requirements for comparability as described in the general principle of 5.6 of ISO 14025:2006-07, and detailed in clause 6.7.2. Data comparability can only be expected between EPD based on the same PCR document. The information provided for such comparison shall be transparent in order to allow the purchaser or user to understand the limitations of comparability inherent in the EPD. In order to compare EPD based on information modules, either the environmental impacts of omitted life cycle stages of the products shall not be significant, or the data of omitted life cycle stages shall be identical for the compared products within the accepted uncertainty of the data.

NOTE EPD not covering all life cycle stages may be declarations that have limited or no comparability.

5.4 Additional information

Additional information related to environmental aspects, other than the environmental information derived from LCA, LCI or information modules is used to complement the pre-set parameters based on LCA, where the LCA does not cover all relevant environmental aspects of the product's Life Cycle. In this PCR the following categories of additional information are addressed:

— Additional technical information, consisting of physical data characterising the product's environmental performance during those life cycle stages that are not mandatory, e.g. the use and end of life stage. It is optional information intended to support the development of scenarios on building level;

— Additional information on emissions to indoor air, soil and water during the use stage, describing emissions to indoor air, soil and water which are not covered by LCIA. This additional information is mandatory information addressed quantitatively in compliance with results from CEN TC 351;

5.5 Ownership, responsibility and liability for the EPD

The manufacturer, a group of manufacturers or their authorised representatives are the owners of the declaration and take liability and responsibility for it. Apart from the manufacturer or group of manufacturers or their authorised representatives no one is authorised to declare the environmental performance of the construction product.