Sustainability of construction works - Data quality for environmental assessment of products and construction work - Selection and use of data

#### FFSTI STANDARDI FFSSÕNA

#### NATIONAL FORFWORD

See Eesti standard EVS-EN 15941:2024 sisaldab Euroopa standardi EN 15941:2024 ingliskeelset teksti.

Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.

Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 06.03.2024.

Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.

This Estonian standard EVS-EN 15941:2024 consists of the English text of the European standard EN 15941:2024.

This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.

Date of Availability of the European standard is 06.03.2024.

The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 35.240.67, 91.010.99

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardimis- ja Akrediteerimiskeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardimis-ja Akrediteerimiskeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardimis-ja Akrediteerimiskeskusega: Koduleht <a href="https://www.evs.ee">www.evs.ee</a>; telefon 605 5050; e-post <a href="mailto:info@evs.ee">info@evs.ee</a>

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation and Accreditation No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation and Accreditation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation and Accreditation:

Homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

## EUROPEAN STANDARD

## NORME EUROPÉENNE

### **EUROPÄISCHE NORM**

March 2024

EN 15941

ICS 35.240.67; 91.010.99

Supersedes CEN/TR 15941:2010

#### **English Version**

# Sustainability of construction works - Data quality for environmental assessment of products and construction work - Selection and use of data

Contribution des ouvrages de construction au développement durable - Qualité des données pour l'évaluation environnementale des produits et des ouvrages de construction - Sélection et utilisation des données Nachhaltigkeit von Bauwerken - Datenqualität für die Erfassung der Umweltqualität von Produkten und Bauwerken - Auswahl und Anwendung von Daten

This European Standard was approved by CEN on 10 December 2023.

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. 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 CEN 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 CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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



EUROPEAN COMMITTEE FOR STANDARDIZATION COMITÉ EUROPÉEN DE NORMALISATION EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Cont	tents	Page
Europ	oean foreword	6
1	Scope	7
2	Normative references	
3	Terms and definitions	
4	Abbreviations	
-		
5 5.1	Types of data at product, building and construction works level	
5.1 5.2	GeneralSources of generic data for use at product, building and construction works	
5.2 5.3	Examples of data and their uses at building and construction works level	
5.4	Types of EPD	
6	Data quality criteria and aspects for products and construction works	
6.1	General	
6.2	International Reference Life Cycle Data System datadata	
6.3	Time-related coverage	
6.3.1	General	17
6.3.2	General time related criteria	18
6.3.3	Time-related criteria for construction products and buildings	
6.3.4	Time related meta-data for ILCD data sets	19
6.4	Geographical coverage	20
6.4.1	General geography related criteria	20
6.4.2	Geography related criteria for construction products and buildings	21
6.4.3	Geography related meta-data for ILCD data sets	21
6.5	Technological coverage	22
6.5.1	General	
6.5.2	Technology-related criteria at product level	
6.5.3	Technology related criteria for data quality at building level	
6.5.4	Technology related meta-data for ILCD data sets	
6.6	Aspect of Precision	
6.6.1	General	
6.6.2	Precision related meta-data for ILCD data sets	_
6.7	Aspect of Completeness	
6.7.1	General	
6.7.2	Aspect of Completeness at product level	
6.7.3	Aspect of Completeness at building level	
6.7.4	Completeness related meta-data for ILCD data sets	
6.8	Aspect of Consistency	
6.8.1 6.8.2	General	
6.8.2 6.9	Consistency related meta-data for ILCD data sets  Sources of the data	
6.10	Meta-data for ILCD data sets related to Sources of data	
7	Data Quality at Product level	
, 7.1	Assessing Data Quality at product level	
7.1.1	General	
7.1.2	Relevant data	
·		

7.1.3	Assessing data quality of average or specific data	32
7.1.4	Assessing data quality of generic data	33
7.1.5	Assessing data quality of the final EPD	
7.2	Selecting and Collecting data at product level	
7.2.1	General	
7.2.2	Selecting raw data	
7.2.3	Selection of specific and generic data	
7.3	Reporting data quality at Product Level	
7.3.1	General	
7.3.2	Reporting data quality in the project report	
7.3.3	Reporting data quality in the EPD	
7.3.4	Other data quality information in the EPD	
7.3.5	Providing the EPD in ILCD format	
8	Data quality at building level	
8.1	General	
8.2	Assessment during specific design and decision steps/stages	
8.3	Assessing data quality at building level	
8.3.1	General	
8.3.2	Time related	
8.3.3	Geography related	
8.3.4	Technology Related	
8.3.5	Completeness	
8.3.6	Consistency	47
8.3.7	Plausibility	48
8.3.8	Precision	48
8.4	Selection of quantity data, environmental data and other information	48
8.4.1	General	
8.4.2	Selecting data to describe the building	48
8.4.3	Selection of quantity data for the building assessment	
8.4.4	Selection of environmental data for products and processes for the but assessment	
8.5	Data quality of the assessment results of the building's environmental perform	
8.5.1	General	
8.5.2	Data quality evaluation of quantification	
8.5.3	Data quality evaluation during Type 1 and Type 2 Assessments	
8.5.4	Data quality evaluation during Type 2, Type 3 and Type 4 assessments	
8.5.5	Summarizing data quality	
8.6	Databases, data set providers and tools	
8.7	Reporting data quality generally at building level	
8.8	Verification and review	
9	Data quality at civil engineering works level	
Annex	A (informative) Overview of definitions used in this document and those in EN 1 and PEF and Level(s)	15804
A.1	Overview of definitions	60
A.2	Foreground and background data	65
<b>A.3</b>	Raw data	65
A.4	Specific and generic data	65
Annex	B (informative) Mass Balance at product level	66

Annex	C (informative) Examples of reporting data quality in EPD	69
	D (informative) Examples of the use of a data selection at building level depending goal and scope and data quality assessment	
D.1	General	71
<b>D.2</b>	Early-stage design - no materials chosen	71
D.3	Early-stage design - Some materials chosen	<b>72</b>
<b>D.4</b>	Detailed Design Stage - Cladding comparison	<b>73</b>
D.5	Building Assessment for planning or regulatory purposes	74
D.6	Building Completion - As built assessment	74
Annex	E (normative) Avoiding double counting in the selection of specific and generic da for energy at product and building level	
E.1	General	
E.1.1	General guidance	<b>75</b>
E.1.2	Overarching requirements for avoiding double counting in the selection of speciand generic data for energy at product and building level	
E.1.2.1	Avoiding double counting	<b>75</b>
Ensuri	ng transparency	75
Use of	Contractual instruments	75
	Avoiding double counting in the selection of specific and generic data for energy product and building level	
E.2.1	Overarching Principles	75
E.2.1.1	General	75
E.2.1.2	Requirements for contractual instruments	<b>76</b>
E.2.1.3	Requirement for residual mix	77
E.2.1.4	Recommendation for consistent use of contractual instruments and residual mix	<b>78</b>
	Product level Electricity – modelling foreground, upstream and downstream processes within control of the manufacturer(s)	<b>78</b>
	General	
	Electricity from the grid	
E.2.2.3	Electricity from a directly connected supplier	<b>78</b>
E.2.2.4	Internally generated electricity	79
E.2.2.5	Requirement for modelling of electricity with contractual instruments	79
E.2.2.6	Requirement for transparency	79
E.2.3	Product level Biogas and the gas network – modelling foreground, upstream a downstream data within the control of the manufacturer(s)	
E.2.3.1	General	<b>7</b> 9
E.2.3.2	Biogas from the gas network	79
E.2.3.3	Biogas from a directly connected supplier	79

E.2.3.4	Internally generated biogas	80
E.2.3.5	Requirement for modelling of biogas with contractual instruments	81
E.2.3.6	Requirement for transparency	81
	Product level - Other energy - modelling foreground, upstream and downstream in the control of the manufacturer(s)	
E.2.4.1	General	81
E.2.4.2	Requirement for modelling of other energy with contractual instruments	81
E.2.4.3	Requirement for transparency	81
	Product level - Energy - modelling upstream data (A1-A3) not in the control manufacturer(s)	
E.2.6	Product Level Energy - modelling downstream data (A4-C4 and Module D)	81
	Building Level Energy - modelling energy use in the building in the Constr Stage, Use Stage, End-of-life stage and Module D2	82
	Transparency	
	Reporting at product level in the Project Report	
E.2.8.2	Reporting in EPD	83
	Reporting at Building Level in the Project Report	
E.2.8.4	Reporting in Building Level Communication	83
	F (informative) Data quality scheme for building level based on Level(s)	
Bibliog	graphy	85
	graphy	5

#### **European foreword**

This document (EN 15941:2024) has been prepared by Technical Committee CEN/TC 350 "Sustainability of construction works", the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2024, and conflicting national standards shall be withdrawn at the latest by August 2024.

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

This document supersedes CEN/TR 15941:2010.

In comparison with the previous edition, the following technical modifications have been made. The document:

- addresses both specific and generic data;
- addresses the assessment of data quality in relation to time, geography, technology, precision, completeness, consistency and sources of data;
- addresses the selection of data based on the assessment of data quality through guidance on the generation of a hierarchy;
- addresses the assessment, selection and use of data at both product and building level, and its applicability to all construction works including civil engineering works;
- addresses the avoidance of double counting through the selection of data, particularly in relation to electricity;
- addresses the reporting of data quality at product level in the Project Report and in the Environmental Product Declaration (EPD);
- addresses ease of data transfer at product level by addressing the use of a common Life Cycle Inventory (LCI) – nomenclature;
- addresses the reporting and communication of data quality information at building level;
- addresses the responsibilities of data providers to make data quality information available;
- no longer provides guidance on the pre-verification of generic data.

This document has been prepared under a Mandate given to CEN by the European Commission and the European Free Trade Association.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

#### 1 Scope

This document specifies the data quality assessment and selection of data for Environmental Product Declarations (EPD) according to the core product category rules of EN 15804 and for the environmental performance assessment of buildings according to EN 15978 in a consistent way. It can also be used to assess and select data for the environmental assessment of civil engineering works according to EN 17472.

It defines data quality requirements with respect to temporal, technological and geographical representativeness for the data used to calculate the Life Cycle Assessment (LCA) based indicator results of the EPD and for construction works when applying EPD, life cycle inventory data or other LCA based information, and gives guidance for the generation of a hierarchy to support the selection of the most appropriate data regarding data quality. It also addresses the reporting of data quality at product and building level.

#### 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~15804:2012+A2:2019, Sustainability~of~construction~works-Environmental~product~declarations-Core~rules~for~the~product~category~of~construction~products

EN 15978, Sustainability of construction works - Assessment of environmental performance of buildings - Calculation method

CEN ISO/TS 14071, Environmental management — Life cycle assessment — Critical review processes and reviewer competencies: Additional requirements and guidelines to ISO 14044:2006 (ISO/TS 14071)

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

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

EN ISO 14067:2018, Greenhouse gases - Carbon footprint of products - Requirements and guidelines for quantification (ISO 14067:2018)

ISO 21930:2017, Sustainability in buildings and civil engineering works — Core rules for environmental product declarations of construction products and services

European Commission — Joint Research Centre — *Institute for Environment and Sustainability. International Reference Life Cycle Data System (ILCD) Handbook* — *Nomenclature and other conventions.* 2010. EUR 24384 EN. Luxembourg. Publications Office of the European Union; 2010, ISBN 978-92-79-15861-2