THE INTERNATIONAL EPD® SYSTEM

FOOTWEAR

PRODUCT CATEGORY CLASSIFICATION: UN CPC 293, 2941, 2949, 295

PCR 2024:04
VERSION 1.0.0

VALID UNTIL 2028-06-19

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1 INTRODUCTION

This document constitutes Product Category Rules (PCR) developed in the framework of the International EPD System: a programme for type III environmental declarations[1] according to ISO 14025:2006, ISO 14040:2006, ISO 14044:2006, and product-specific standards such as EN 15804 and ISO 21930 for construction products. Environmental Product Declarations (EPD) are voluntary documents for a company or organisation to present transparent, consistent and verifiable information about the environmental performance of their products (goods or services).

The rules for the overall administration and operation of the programme are the General Programme Instructions (GPI), publicly available on www.environdec.com. A PCR complements the GPI and the normative standards by providing specific rules, requirements and guidelines for developing an EPD for one or more specific product categories (see Figure 1). A PCR should enable different practitioners using the PCR to generate consistent results when assessing products of the same product category.

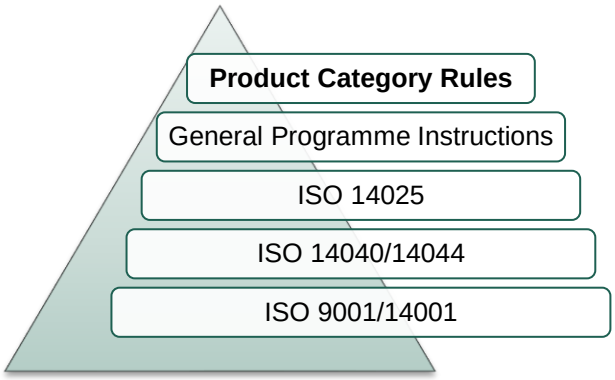

Figure 1 The hierarchy between PCRs, standards and other documents. EN 15804 and ISO 21930 are normative standards for construction products only.

Within the present PCR, the following terminology is adopted:

- The term “shall” is used to indicate what is obligatory, i.e. a requirement.
- The term “should” is used to indicate a recommendation, rather than a requirement. Any deviation from a “should” requirement shall be justified in the PCR development process.
- The terms “may” or “can” is used to indicate an option that is permissible.

For definitions of further terms used in the document, see the normative standards.

A PCR is valid for a pre-determined period of time to ensure that it is updated at regular intervals. The latest version of the PCR is available on www.environdec.com. Stakeholder feedback on PCRs is very much encouraged. Any comments on this PCR may be sent directly to the PCR Moderator and/or the Secretariat during its development or during its period of validity.

Any references to this document shall include the PCR registration number, name and version.

The programme operator maintains the copyright of the document to ensure that it is possible to publish, update, and make it available to all organisations to develop and register EPDs. Stakeholders participating in PCR development should be acknowledged in the final document and on the website.

[1] Type III environmental declarations in the International EPD System are referred to as EPDs, Environmental Product Declarations.

2 GENERAL INFORMATION

2.1 ADMINISTRATIVE INFORMATION

Name:	Footwear
Registration number and version:	2024:04, version 1.0.0
Programme:	THE INTERNATIONAL EPD® SYSTEM
Programme operator:	EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden. Website: www.environdec.com E-mail: support@environdec.com
PCR Moderator:	Assunta Filareto, Life Cycle Engineering S.p.A., filareto@studiolce.it
PCR Committee:	Golden Goose S.p.A., TOD'S S.p.A. and Life Cycle Engineering S.p.A.
Date of publication and last revision:	2024-06-19 (version 1.0.0) See Section 9 for a version history of the PCR.
Valid until:	2028-06-19
Schedule for renewal:	A PCR is valid for a pre-determined time period to ensure that it is updated at regular intervals. When the PCR is about to expire, the PCR Moderator shall initiate a discussion with the Secretariat how to proceed with updating the PCR and renewing its validity. A PCR may also be updated without prolonging its period of validity, provided significant and well-justified proposals for changes or amendments are presented. See www.environdec.com for the latest version of the PCR. When there has been an update of the PCR, the new version should be used to develop EPDs. The old version may however be used for 90 days after the publication date of the new version, as long as the old version has not expired.
Standards and documents conformance:	▪ General Programme Instructions of the International EPD System, version 4.0, based on ISO 14025 and ISO 14040/14044 ▪ PCR 2011:13 Finished bovine leather product, category classification: UN CPC 2912; version 3.0.3. ▪ PCR 2021:04 Rubber articles for footwear product, category classification: UN CPC 3627; version 1.0, 2021-06-21. ▪ PCR 2013:15 Leather footwear, product category classification: UN CPC 2933; version 2.11
PCR language(s):	At the time of publication, this PCR was available in English. If the PCR is available in several languages, these are available at www.environdec.com. In case of translated versions, the English version takes precedence in case of any discrepancies.

2.2 SCOPE OF PCR

2.2.1 PRODUCT CATEGORY DEFINITION AND DESCRIPTION

This document provides the Product Category Rules (PCR) for the assessment of the environmental performance of *Footwear* and the declaration of this performance by an EPD.

The scope of the PCR **includes** the products under the following UN CPC groups and classes:

- 293 - Footwear, with outer soles and uppers of rubber or plastics, or with uppers of leather or textile materials, other than sports footwear, footwear incorporating a protective metal toe- cap and miscellaneous special footwear, including all the classes (2931, 2932, 2933, 2934)
- 2942 - Tennis shoes, basketball shoes, gym shoes, training shoes and the like
- 2949 - Other sports footwear, except skating boots
- 295 - Other footwear, except asbestos footwear, orthopaedic footwear and skating boots) including all the classes (2951, 2952).

The table below lists all CPC codes along with their subsection, division, groups and classes. For the aim of this PCR, the list shall be intended as exhaustive. Therefore, for any footwear product which is not included within these CPC classes, it is recommended to create a complementary PCR (c-PCR). This requires that the present PCR is updated to a main PCR. Contact the Secretariat if you are interested in an EPD of a footwear not covered by any of the below CPC codes, and not covered by any other PCR.

CPC classification hierarchy		Name
-	Section: 2	Food products, beverages and tobacco; textiles, apparel and leather products
↓	Division: 29	Leather and leather products; footwear
↓	Groups: 293; 294; 295	Footwear, with outer soles and uppers of rubber or plastics, or with uppers of leather or textile materials, other than sports footwear, footwear incorporating a protective metal; Sports footwear, except skating boots; Other footwear, except asbestos footwear, orthopedic footwear and skating boots
↓	Classes: 2931, 2932, 2933, 2934 2942, 2949 2951, 2952	Waterproof footwear, with outer soles and uppers of rubber or plastics, other than footwear incorporating a protective metal toe-cap; Footwear with outer soles and uppers of rubber or plastics, other than waterproof footwear or sports footwear; Footwear with uppers of leather, other than sports footwear, footwear incorporating a protective metal toe-cap and miscellaneous special footwear; Footwear with uppers of textile materials, other than sports footwear; Tennis shoes, basketball shoes, gym shoes, training shoes and the like; Other sports footwear, except skating boots; Footwear incorporating a protective metal toe-cap, except those covered in subclass 29320; Wooden footwear, miscellaneous special footwear and other footwear n.e.c.

The scope of the PCR **excludes** the products under the following UN CPC groups and classes:

- 2941 - Ski-boots, snowboard boots and cross-country ski footwear
- 296 - Parts of footwear; removable insoles, heel cushions and similar articles; gaiters, leggings and similar articles, and parts thereof, and the related class 2960

Further information is available at the following link https://unstats.un.org/unsd/classifications/Family/Detail/1074.

2.2.2 GEOGRAPHICAL SCOPE

This PCR may be used globally.

2.2.3 EPD VALIDITY

An EPD based on this PCR shall be valid for a 5-year period starting from the date of the verification report (“approval date”), or until the EPD has been de-registered from the International EPD System.

An EPD shall be updated and re-verified during its validity if changes in technology or other circumstances have led to:

- an increase of 10% or more of any of the declared indicators of environmental impact,
- errors in the declared information, or
- significant changes to the declared product information, content declaration, or additional environmental, social or economic information.

If such changes have occurred, but the EPD is not updated, the EPD owner shall contact the Secretariat to de-register the EPD.

3 PCR REVIEW AND BACKGROUND INFORMATION

This PCR was developed in accordance with the PCR development process described in the GPI of the International EPD System, including open consultation and review.

3.1 OPEN CONSULTATION

3.1.1 VERSION 1.0.0

This PCR was available for open consultation from 2023-12-13 until 2024-02-12, during which any stakeholder was able to provide comments by contacting the PCR Moderator and/or the Secretariat.

Stakeholders were invited via e-mail or other means to take part in the open consultation and were encouraged to forward the invitation to other relevant stakeholders. The following stakeholders provided comments during the open consultation and agreed to be listed as contributors in the PCR and at www.environdec.com :

- James Cooper, Isaac Emery, Mukunth Natarajan, Julie Sinistore (WSP USA)

3.2 PCR REVIEW

3.2.1 VERSION 1.0.0

PCR review panel:	The Technical Committee of the International EPD System. A full list of members is available at www.environdec.com. The review panel may be contacted via support@environdec.com. Members of the Technical Committee were requested to state any potential conflict of interest with the PCR Committee, and if there were conflicts of interest they were excused from the review.
Chair of the PCR review:	Gorka Benito
Review dates:	2024-03-20 until 2024-04-17

3.3 EXISTING PCRS FOR THE PRODUCT CATEGORY

As part of the development of this PCR, existing PCRs and other internationally standardized methods that could potentially act as PCRs were considered to avoid unnecessary overlaps in scope and to ensure harmonisation with established methods of relevance for the product category. The existence of such documents was checked among the following EPD programmes and international standardisation bodies:

- International EPD System. www.environdec.com.
- European Commission www.pefapparelandfootwear.eu and www.eplca.jrc.ec.europa.eu/EnvironmentalFootprint.html
- PEP ecopassport program http://www.pep-ecopassport.org//
- Epd-norge, the Norwegian EPD Foundation https://www.epd-norge.no/
- EPD Italy https://www.epditaly.it/
- AENOR, Global EPD https://www.en.aenor.com/
- Kiwa-Ecobility Experts https://www.kiwa.com/de/en/themes/ecobility-experts/ecobility-experts-epd-program/
- Global GreenTag International EPD Program https://www.globalgreentag.com/epd-program.html
- EPD China http://www.epdchina.cn/
- EPD Hub https://www.epdhub.com

. Table 1 lists the identified PCRs and other standardized methods.

Table 1. Existing PCRs and other internationally standardized methods that were considered to avoid overlap in scope and to ensure harmonisation with established methods.

NAME OF PCR/STANDARD	PROGRAMME/ STANDARDISATION BODY	REGISTRATION NUMBER, VERSION NUMBER/DATE OF PUBLICATION	SCOPE
Leather footwear (expired) PCR 2013:15	International EPD System	2013:15 Version 2.11, 2019-09-06	This document provides Product Category Rules (PCR) for the assessment of the environmental performance of footwear with uppers of leather other than sports footwear, footwear incorporating a protective metal toe-cap and miscellaneous special footwear and the declaration of this performance by an EPD.
Rubber articles for footwear PCR 2021:04	International EPD System	PCR 2021:04 Version 1.0, 2021-06-21	This document provides Product Category Rules (PCR) for the assessment of the environmental performance of rubber articles for footwear and the declaration of this performance by an EPD.
Finished bovine leather PCR 2011:13	International EPD System	PCR 2011:13 Version 3.0.3, 2022-04-20	This document provides Product Category Rules (PCR) for the assessment of the environmental performance of finished bovine leather and the declaration of this performance by an EPD
Meat of mammals PCR 2012:11	International EPD System	PCR 2012:11 Version 3.1.2, 2022-02-02	This document provides Product Category Rules (PCR) for the assessment of the environmental performance of meat of mammals (fresh or frozen) and the declaration of this performance by an EPD.
Jackets, coats and other similar outdoor garments PCR 2019:04	International EPD System	PCR 2019:04 Version 1.0.3, 2022-10-28	This document provides Product Category Rules (PCR) for the assessment of the environmental performance of jackets, coats and other similar outdoor garments and the declaration of this performance by an EPD.
Sweaters, jerseys, pullovers, cardigans, fleeces and similar garments PCR 2019:05	International EPD System	PCR 2019:05 Version 1.0.4, 2022-10-28	This document provides Product Category Rules (PCR) for the assessment of the environmental performance of sweaters, jerseys, pullovers, cardigans, fleeces and similar garments and the declaration of this performance by an EPD.
Draft product environmental footprint representative product (PEF-RP) study report. Apparel and footwear.	Sustainable Apparel Coalition (SAC) European Commission EF Team, European Environmental Bureau (EEB)	Version 2.0 18 March 2024	The goal of this apparel and footwear PEF-RP study is to test the PEFCR for apparel and footwear that is currently under development by calculating the environmental footprints (EFs) for the 13 virtual representative products (RPs) that were defined by the Technical Secretariat (TS), including open and closed-toed shoes and boots.

3.4 REASONING FOR DEVELOPMENT OF PCR

This PCR was developed to enable publication of EPDs for this product category based on ISO 14025 and ISO 14040/14044. The PCR enables different practitioners to generate consistent results when assessing the environmental impact of products of the same product category, and thereby it supports comparability of products within a product category.

The development of this PCR aims at substituting PCR 2013:15 Leather footwear, extending the scope to all footwear products other than leather and promoting environmental product declarations for the fashion industry. This new PCR not only updates the previous one on leather shoes but aims at encompassing the broader shoes sectors aligning with the recent apparel and footwear draft PEFCR within the pilot studies supported by the European Commission to further promote the growth of a shared framework for this type of products.

3.5 UNDERLYING STUDIES USED FOR PCR DEVELOPMENT

The methodological choices made during the development of this PCR (declared/functional unit, system boundary, allocation methods, impact categories, data quality rules, etc.) were primarily based on the following underlying studies:

- Anna Karin Dahlberg - Chemical Analysis of Organic Compounds in Footwear - Degree Project in Environmental Chemistry, 30 hp - Swedish Environmental Research Institute Ltd. - 2010
- Annekatrin Lehmann, Vanessa Bach and Matthias Finkbeiner - Sustainability Commentary - EU Product Environmental Footprint-Mid-Term Review of the Pilot Phase - Sustainability 2016, 8, 92; doi:10.3390/su8010092
- B. Rivela, M. T. Moreira, C. Bornhardt, R. Meä Ndez, and G. Feijoo. Life Cycle Assessment as a Tool for the Environmental Improvement of the Tannery Industry in Developing Countries (Environ. Sci. Technol. 2004).
- Calculation of a Corporate Carbon Footprint (CCF) for a leather factory with evaluation of internal energy consumption in comparison to the BEET energy benchmark (Best Energy Efficiency for Tanning), 2011.
- Camillo De Camillis, Pere Fullana, Bruno Notarnicola,Rita Puig, Andrea Raggi, Antoni Rius, Giuseppe Tassielli. Life cycle assessment of Italian and Spanish bovine leather production systems. Afinidad LXVIII, 553, Mayo - Junio 2011.
- Carlo Brondi, Rosanna Fornasiero, Manfredi Vale, Ludovico Vidali and Federico Brugnoli. Modular framework for reliable LCA-based indicators supporting supplier selection within complex supply chains. (APMS-2012)
- D. Pernigotti, C. Rose; Life Cycle Assessment of finished bovine leather (December 2006)
- D. Pernigotti, C. Rose; Carbon Footprint of product of finished bovine leather (June 2011)
- D. Pernigotti, M. Mancin; EPD Process of finished bovine leather (February 2017)
- ECO2L, Energy Controlled Leather. Calculation of a Corporate Carbon Footprint (CCF) for a leather factory with evaluation of internal energy consumption in comparison to the BEET energy benchmark (Best Energy Efficiency for Tanning) (Oct. 2011)
- Ecolabel, Study for the Footwear Criteria Revision produced for the European Commission by Life Cycle Engineering, 2008.
- European Commission Joint Research Centre Institute for Environment and Sustainability H08 Sustainability Assessment Unit. (Ispra, Italy, November 2011). Analysis of Existing Environmental Footprint Methodologies for Products and Organizations: Recommendations, Rationale, and Alignment.
- European Trade Union and COTANCE. Social and Environmental Report - the European leather industry, 2012.
- F. Brugnoli, I. Krá? - Life Cycle Assessment/Carbon Footprint in the Leather Processing - Eighteenth Session of the Leather and Leather Products Industry Panel Shanghai, China, 01 - 05 September 2012
- FAO - Food and Agriculture Organization Of The United Nations - World statistical compendium for raw hides and skins, leather and leather footwear 1992-2011
- Joseph, K., & Nithya, N. (2009). Material flows in the life cycle of leather. Journal of Cleaner Production, 17(7), 676–682.
- Kılıç, E., McLaren, S., Holmes, G., Fullana–i–Palmer, P., & Puig, R. (2023). Product environmental footprint of New Zealand leather production. International Journal of Life Cycle Assessment, 28(4), 349–366.
- Kurian Joseph, N. Nithya. Material flows in the life cycle of leather. (Journal of Cleaner Production 17 (2009) 676-682)
- Kyle Albers, Peter Canepa, Jennifer Miller. Analyzing the Environmental Impacts of Simple Shoes (March 2008).
- LCA of Italian and Spanish bovine leather production systems in an industrial ecology perspective, 2011.
- Life Cycle Assessment/Carbon Footprint in the Leather Processing, 2012.
- Lloren; Mil., Xavier Domnech, laJoanRieradevall, Pere Fullana, Rita Puig. Application of Life Cycle Assessment to Footwear [Int. J. LCA 3 (4) 203 - 208 (1998)].

- Maciel, V. G., De Avila Bockorny, G., Domingues, N. S., Scherer, M. B., Zortea, R. B., & Seferin, M. (2017). Comparative Life Cycle Assessment among Three Polyurethane Adhesive Technologies for the Footwear Industry. ACS Sustainable Chemistry & Engineering, 5(9), 8464–8472.
- Navarro, D., Wu, J., Lin, W., Fullana–i–Palmer, P., & Puig, R. (2020). Life cycle assessment and leather production. Journal of Leather Science and Engineering, 2(1).
- Notarnicola Bruno, Puig Rita, Raggi Andrea, Tarabella Angela, Petti Luigia, Rius Antoni, Tassielli Giuseppe, De Camillis Camillo, Mongelli Ignazio. LCA of Italian and Spanish bovine leather production systems in an industrial ecology perspective
- Rossi, M., Papetti, A., Marconi, M., & Germani, M. (2021). Life cycle assessment of a leather shoe supply chain. International Journal of Sustainable Engineering, 14(4), 686–703.
- Sandrine Pesnel - (PEFCR). Pilot T-shirts. Study of existing PCRs, draft scope, representative product, minutes of the consultation meeting, comments from stakeholder. First physical public consultation. June 2014
- Shahin Rahimifard, Theodoros Staikos, Dr Gareth Coates. Recycling of Footwear Products. Centre for Sustainable Manufacturing and Reuse/recycling Technologies (SMART), Loughborough University (2007)
- Technical Committee CEN/TC 309 "Footwear". Footwear - Critical substances potentially present in footwear and footwear component - Definitions and requirements, Working document: TC 309 WI (2009).
- The Life Cycle of a Typical Leather Manufacturing Waste, 2011.
- Unido -CTC- Wastes Generated in The Leather Products Industry- Fourteenth Session of the Leather and Leather Products Industry Panel, Zlin, Czech Republic 13-15 December 2000

4 GOAL AND SCOPE, LIFE CYCLE INVENTORY AND LIFE CYCLE IMPACT ASSESSMENT

The goal of this section is to provide specific rules, requirements and guidelines for developing an EPD for the product category as defined in Section 2.2.1.

4.1 FUNCTIONAL UNIT

The functional unit is one use of a pair of footwear, including its packaging and any additional element included in the sold unit (e.g., extra laces etc.)[2].

The function of the product shall be further defined in the product information section in accordance with Section 5.4.3. The functional unit shall be stated in the EPD. The environmental impact shall be given per functional unit.

4.2 TECHNICAL SPECIFICATION AND LIFESPAN

For the purpose of the present PCR, estimating a standard lifespan for different footwear products (e.g., X years or Y number of uses) is a complex task, which can vary between all the footwear categories listed.

To overcome this limit and provide guidance on how to define the durability of a pair of footwear, two possible options are taken into consideration, in line with the Draft PEFCR Apparel and footwear.

- The durability of the product shall be declared based on the number of wears per product duration service described in Table 2. Data present in the table are average values based on expert judgement.
- Durability can be modified only employing multipliers methodology, described in Sections 3.3.3. and 3.3.4 of the Draft PEFCR Apparel and footwear. This methodology states a calculation method based on the score obtained after performing durability tests, described in Annex V of Apparel and footwear's PEFCR Draft.

Table 2. Average number of wears per product duration of service per UN CPC code.

Product category	UN CPC code	Number or wears per product duration service
Open-toed shoes	2931, 2932	50
Closed-toed shoes	2931, 2932, 2933, 2934, 2942, 2949	100
Boots	2949, 2951, 2952	100

The expected lifespan of the product shall be declared in the EPD, including the foreseen number of uses and the foreseen use conditions, if available. It should be stated on which basis the assumptions for the product use are made, whether the generic number of wears from Table 2 have been used or a specific number have been calculated by using the multiplier methodology defined in Draft PEFCR Apparel and footwear.

In addition to the methodology based on Table 2, the most reliable term of comparison is represented by the technical properties of the product. The mechanical and physical properties of the product presented in Table 3 should be declared in the EPD independently from the test chosen (which can be different from the ones stated below), according to Section 5.4.3 and **Error! Reference source not found.**.

Table 3 below reports:

- The list of parameters that should be measured.
- An illustrative but not exhaustive list of recognized standards for the assessment of each parameter.

[2] It is important to define the function of footwear. However, number of uses of a pair of footwear has a wide variability and it is important to detail the technical characteristics linked to durability, as better detailed in section 4.2, aligned with Draft PEFCR Apparel and Footwear.

All the standards have been chosen to provide a quantitative measurement of footwear durability; therefore, the qualitative ones are excluded from the assessment. The standards in Table 3 are suggested to measure the parameters listed, but one can choose to follow other international or national recognised standards, such as ISO standards or the ones listed in Annex V of Draft PEFCR Apparel and footwear. The regulatory requirements for the specific footwear category are considered satisfied a priori as they are mandatory and are therefore excluded from the assessment.

The measurement could be referred either to the specific product or to the family product to which the product belongs, provided that the material composition is coherent.

Table 3. Parameters to be assessed through reference standards.

Parameters that should be measured and declared in EPD	**Example of reference standards for the assessment of each parameter**
Mechanical properties	
Abrasion resistance	GB/T 3903.2-2017 - Test methods for whole shoe - Abrasion resistance.
	ISO 20871:2018 - Test methods for outsoles - Abrasion resistance.
	EN 13520:2004 - Test methods for uppers, lining and insocks - Abrasion resistance.
	ISO 17704:2004 - Test methods for uppers, linings and insocks Abrasion resistance.
Flex resistance	GB/T 3903.1-2017 - Test methods for whole shoe - Flexing resistance.
	EN 17707:2005 - Test methods for outsoles - Flex resistance.
	EN ISO 17694:2016 - Test methods for uppers and lining - Flex resistance.
	EN ISO 24266:2020 - Test methods for whole shoe - Flexing durability.
	SATRA TM92 - Resistance of footwear to flexing.
	HG/T 2871-20022 - Test method for flexing of whole rubber shoes.
Outsoles and upper tear strength	GB/T 39093.29-2022 – Test methods for outsoles – Determination of split tear strength and delamination resistance.
	EN ISO 17696:2018 - Test methods for uppers, linings and insocks - Tear strength (ISO 17696:2004).
	ISO 20872:2018 - Test methods for outsoles - Tear strength.
	EN 12771:2000 - Test methods for outsoles - Tear strength.
Upper sole adhesion	ISO 17708:2018 - Test methods for whole shoe - Upper sole adhesion.
	GB/T 3903.3-2011 - Footwear. General test methods - Peeling strength.
	GB/T 21396-2022 - Test Methods for While Shoe - Upper Sole Adhesion.
Heel resistance (if applicable)	UNI EN 12785
	ISO 19956:2004
Physical properties	
Color fastness	QB/T 2882-2007 - Test Methods for Uppers, Linings and Insocks – Colour Fastness to Rubbing.
	ISO 17228:2015 | IULTCS/IUF 412 – Leather, Tests for colour fastness – Change in colour with accelerated ageing
Resistance to weather conditions	ISO 105–B02:2014 Colour fastness to artificial light: Xenon arc fading lamp test (suggested for white or clear colors)
	EN 12749 – Footwear - Ageing conditioning
	ISO 20870:2017 – Footwear – Ageing conditioning

4.3 SYSTEM BOUNDARY

The scope of this PCR and EPDs based on it is cradle-to-grave.

4.3.1 LIFE-CYCLE STAGES

For the purpose of different data quality rules and for the presentation of results, the life cycle of the product is divided into three life cycle stages:

- Upstream processes (from cradle-to-gate)
- Core processes (from gate-to-gate)
- Downstream processes (from gate-to-grave)

In the EPD, the environmental performance associated with each of the three life-cycle stages above shall be reported separately and in aggregated form. The processes included in the scope of the PCR and belonging to each life cycle stage are described in Sections 4.3.1.1–4.3.1.3.

4.3.1.1. Upstream processes

The following unit processes are part of the product system and shall be classified as upstream processes:

- leather production (if leather is used in the declared unit),
- extraction and processing of footwear manufacturing materials (i.e., material specific for the Footwear sector such as cotton, rubber, polyester, polyurethane, etc.),
- extraction and processing of secondary raw materials (i.e., material not specific for Footwear sector),
- recycling processes of secondary materials from other product life cycles,
- production of input components,
- relevant services, such as transport of raw materials and components along the upstream supply chain to a distribution point (e.g., a stockroom or warehouse),
- production of distribution and consumer packaging, and
- generation of electricity and production of fuels, steam and other energy carriers used in upstream processes.

Upstream processes not listed may also be included. All elementary flows at resource extraction shall be included, except for the flows that fall under the general cut-off rule in Section 4.5.

For modelling of infrastructure and capital goods, see Section 4.3.2.

4.3.1.2. Core processes

The following unit processes are part of the product system and shall be classified as core processes:

- transportation of materials and components to the manufacturing of the product under study,
- manufacturing of the main footwear specific components (upper, sole, laces, etc.), for instance:
  - cutting and die-cutting phase,
  - sewing, folding, and binding processes,
  - assembling of the main components (e.g., upper and insole),
  - components' finishing phases, including residues removal (from insole or other components),
- production of the finished footwear, finishing phase, including residues removal (after assembling) and packing,
- end-of-life treatment of manufacturing waste, even if carried out by third parties, including transportation, and
- generation of electricity and production of fuels, steam and other energy carriers used in core processes.

Core processes not listed may also be included. Manufacturing of a minimum of 99% of the total weight of the declared product including packaging shall be included.

The following processes shall not be included:

- business travel of personnel,

- travel to and from work by personnel, and
- research and development activities.

For modelling of infrastructure and capital goods, see Section 4.3.2.

4.3.1.3. Downstream processes

The following unit processes are part of the product system and shall be classified as downstream processes:

- transportation of the product to retailer/consumer,
- end-of-life treatment of the used product and its packaging, including transportation, and
- generation of electricity and production of fuels, steam and other energy carriers used in downstream processes.

It is optional to include:

- product use, e.g., use of electricity, water or chemicals in washing, use activities causing direct emissions,
- maintenance activities, and
- repairing operations, including the production of materials used within these operations.

For modelling of infrastructure and capital goods, see Section 4.3.2.

4.3.2 INFRASTRUCTURE AND CAPITAL GOODS

In general, the production and end-of-life processes of infrastructure or capital goods[3] used in the product system should not be included within the system boundaries. They may be included when infrastructure and capital goods are known to be relevant in terms of their environmental impact, or when a generic LCI dataset includes infrastructure/capital goods, and it is not possible, within reasonable effort, to subtract the data on infrastructure/capital goods from this dataset. If an infrastructure/capital good is produced with the intention to be used one or a few times only (e.g., a manufacturing plant or machinery constructed to produce only one product), this infrastructure/capital good shall be included.

The inclusion or exclusion of infrastructure/capital goods shall be transparently described for upstream, core and downstream processes in the LCA report and in the EPD.

If infrastructure/capital goods are included, the following disclaimer shall be included in the results sections of the LCA report and in the EPD (land use and toxicity indicators shall only be mentioned if declared in the EPD):

The results of the impact categories abiotic depletion of minerals and metals, land use, human toxicity (cancer), human toxicity, non-cancer and ecotoxicity (freshwater) may be highly uncertain in LCAs that include capital goods/infrastructure in generic datasets, in case infrastructure/capital goods contribute greatly to the total results. This is because the LCI data of infrastructure/capital goods used to quantify these indicators in currently available generic datasets sometimes lack temporal, technological and geographical representativeness. Caution should be exercised when using the results of these indicators for decision-making purposes.

4.3.3 OTHER BOUNDARY SETTING

4.3.3.1. Boundary towards nature

Boundaries to nature are defined as where the flows of material and energy resources leave nature and enter the technical system (i.e., the product system). Emissions cross the system boundary to nature when they are emitted to air, soil or water.

[3] Examples of infrastructure and capital goods are the building in which the studied product or upstream materials or components are produced, machinery used in the manufacturing of the product or its materials or components, or vehicles used in transports in the product system. For example, if the EPD is on wind power, the power plant itself is considered the studied product and not infrastructure/capital goods. However, the buildings and machinery that make the wind turbine components are considered infrastructure/capital goods. Similarly, if the EPD is on a means of transport, the vehicle is considered the studied product and not infrastructure/capital goods.

4.3.3.2. Boundary towards other technical systems

Boundaries towards other technical systems define the flow of materials and components to/from the product system under study and from/to other product systems. If there is an inflow of recycled material to the product system in the production/manufacturing stage, the transport from the scrapyard/collection site to the recycling plant, the recycling process, and the transportation from the recycling plant to the site where the material is being used shall be included. If there is an outflow of material or component to recycling, the transportation of the material to the scrapyard/collection site shall be included. The material or component going to recycling is then an outflow from the product system.

See Section 4.6 for further guidance.

4.3.3.3. Temporal boundary

The temporal boundary defines the time period for which the life cycle inventory data is recorded, e.g. for how long emissions from waste deposits are accounted. As default, the time period over which inputs to and outputs from the product system is accounted for shall be 100 years from the year that the LCA model best represents, considering the representativeness of the inventory data. This year shall, as far as possible, represent the year of the publication of the EPD.

4.3.3.4. Geographical boundary

The geographical boundary defines the geographical coverage of the LCA. This shall reflect the physical reality of the product under study, accounting for the representativeness of technology, input materials and input energy.

4.4 SYSTEM DIAGRAM

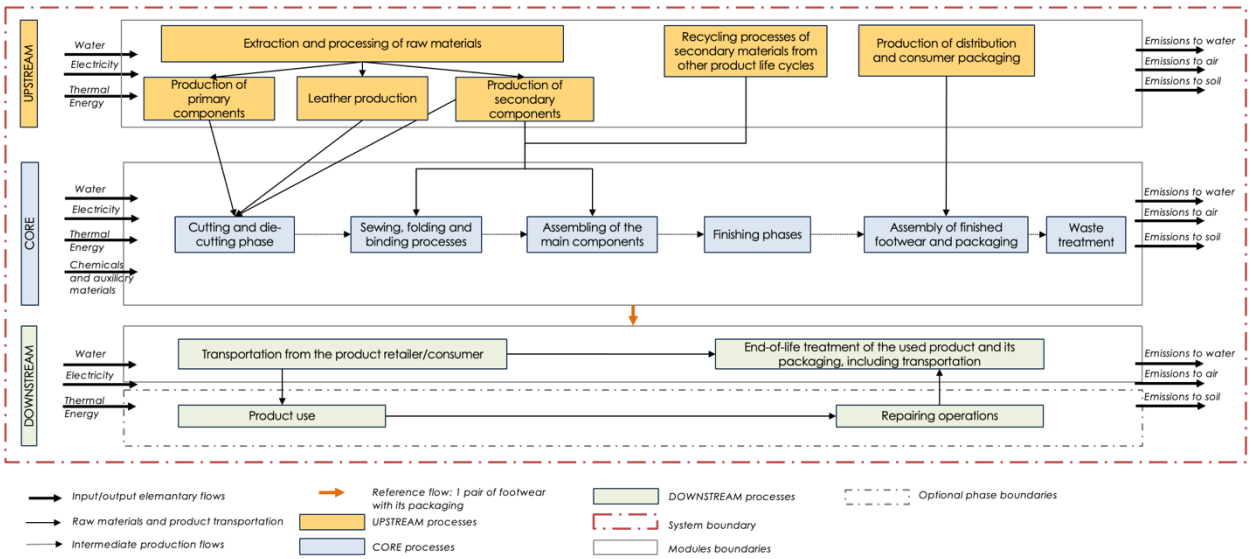

Figure 2. System diagram illustrating the processes that shall be included in the product system, divided into upstream, core and downstream processes. The illustration of processes to include may not be exhaustive.

4.5 CUT-OFF RULES

A cut-off rule of 1% shall be applied. In other words, the included inventory data (not including inventory data of processes that are explicitly outside the system boundary as described in Section 4.3) shall together give rise to at least 99% of the results of any of the environmental impact categories. Also, 99% of the mass of the product content and 99% of the energy use of the product life cycle shall be accounted for. The cut-off of inventory data should, however, be avoided, and all available inventory data shall be used.

The cut-off of inventory data, based on the above cut-off rule, should be an output of a sensitivity analysis, alone or in combination with expert judgment based on experience of similar product systems. Furthermore, the cut-off shall be possible to be verify in the verification

process, hence the exclusion of inventory data based on the cut-off rule shall be documented in the LCA report, and the EPD developer shall provide the information the verifier considers necessary to verify the cut-off.

4.6 ALLOCATION RULES

Allocation can be divided into allocation of co-products, i.e. allocation of unit processes that generate several products, and allocation of waste, i.e. allocation of unit processes that generate materials that are, for example, landfilled recovered, recycled or reused, and which require further processing to cease being waste and become products (see criteria for end-of-waste state in Section 4.6.2).

The principles for allocation of co-products and allocation of waste are described separately in the following subsections.

4.6.1 CO-PRODUCT ALLOCATION

The following hierarchy of allocation methods shall be followed for co-product allocation:

1. Allocation shall be avoided, if possible, by dividing the process to be allocated into sub-processes and collecting the inventory data for each sub-process.
2. If allocation cannot be avoided, the inventory data should be partitioned between the different co-products in a way that reflects the underlying physical relationships between them, i.e. allocation should reflect the way in which the inventory data changes if the quantities of delivered co-products change.
3. If a physical relationship between the inventory data and the delivery of co-products cannot be established, the inventory data should be allocated between the co-products in a way that reflects other relationships between them. For example, inventory data might be allocated between co-products in proportion to their economic values. If economic allocation is used, a sensitivity analysis exploring the influence of the choice of the economic value shall be included in the LCA report.

Regarding allocation of leather components, this PCR is intended to be aligned with the PCR 2011:13 version 3.0.3 (2022-04-20) Finished bovine leather and the Product Environmental Footprint Category Rules (PEFCR) of leather (final Version, 25 April 2018).

4.6.1.1. Leather co-product allocation

As PCR 2011:13 states, “the leather life cycle, as it results from the allocation rules specifically set up for this product category in the PEFCR of leather (final Version, 25 April 2018), includes upstream phases of livestock breeding and slaughter. Therefore, in the leather life cycle, multi-functionality occurs at different life cycle stages:

- At the farming level, where meat and milk are produced.
- At the slaughterhouse level, where fresh meat and edible offal, raw hides and skins and other co & by-products are produced.
- At the tannery level, where finished grain split leather and other co-products (i.e. flesh splits, wool, 525 etc.) are produced.

To manage multi-functionality, the approaches reported below shall be applied. Approaches for farming and slaughtering are taken from the PEFCR of leather (final Version, 25 April 2018)[4]”.

Table 4. Allocation for farming and slaughtering processes.

Process	Allocation rule	Modelling instructions
Bovine farming	Biophysical	Subdivision shall be used for processes that can be directly attributed to certain outputs (e.g. energy use and emissions related to milking processes). When the processes cannot be subdivided due to the lack of separate data or because technically impossible, the upstream burden, e.g. feed production, shall be allocated to farm outputs using a biophysical allocation method. Default values shall be used by PEF studies unless company-specific data are collected. The change of allocation factors is allowed only when company-specific data are collected and used for the farm module. In case generic data are used for the farm module, no change of allocation factors is allowed and the ones listed below shall be used:

[4] The PEFCR Leather adopts for all bovine, both dairy cattle and beef cattle, the allocation proposed in the PEFCR of the dairy products and in the IDF (2015) for the dairy sector. For this reason, the present PCR introduces on this point a deviation from the PECFR Leather adopting this approach only for dairy cattle (reproductive mammals) and an 100% allocation of the cattle for the beef cattle (non-reproductive mammals). As a consequence, on this specific point there is not 100% consistency with the PEFCR Leather.

		▪ Milk: 88.0% ▪ Live animal to slaughter: 12.0%
Caprine and ovine farming	Biophysical	Subdivision shall be used for processes that can be directly attributed to certain outputs (e.g. energy use and emissions related to milking processes). When the processes cannot be subdivided due to the lack of separate data or because technically impossible, the upstream burden, e.g. feed production, shall be allocated to farm outputs using a biophysical allocation method. Default values shall be used by PEF studies unless company-specific data are collected. The change of allocation factors is allowed only when company-specific data are collected and used for the farm module. In case generic data are used for the farm module, no change of allocation factors is allowed and the ones listed below shall be used: ▪ Milk: 73.85% ▪ Wool: 23.64% ▪ Live animal to slaughter: 2.51% For non-reproducing mammal 100% of the impact should be allocated to the “live animal to slaughter”.
Bovine slaughtering	Economic	Subdivision shall be used for processes that can be directly attributed to certain outputs. When the processes cannot be subdivided, the remaining (e.g. excluding that already allocated to milk for milk producing system and/or to wool for wool producing system) upstream burden shall be allocated to slaughterhouse and rendering outputs using the economic allocation method. The default values that shall be used for economic allocation are reported below: ▪ Fresh meat and edible offal: 92.9% ▪ Hides and skins: 3.5% ▪ Food grade fat: 1.8% ▪ Food grade bones: 1.0% ▪ Cat. 3 slaug. By-products: 0.8% ▪ Cat 1/2 material & waste: 0.0% No change of allocation factors is allowed.
Caprine and ovine slaughtering	Economic	Subdivision shall be used for processes that can be directly attributed to certain outputs. When the processes cannot be subdivided, the remaining (e.g. excluding that already allocated to milk for milk producing system and/or to wool for wool producing system) upstream burden shall be allocated to slaughterhouse and rendering outputs using the economic allocation method. The default values that shall be used for economic allocation are reported below: ▪ Fresh meat and edible offal: 97.8% ▪ Hides and skins: 1.6% ▪ Cat. 3 slaug. By-products: 0.618% ▪ Food grade fat: 0.19% ▪ Food grade bones: 0.0127% ▪ Cat 1/2 material & waste: 0.0% No change of allocation factors is allowed.

Table 5. Allocation rules for tanning processes.

Process	Allocation method	Modelling instructions
Bovine raw hides tanning	Hide substance content	Allocation in leather tanning processes between full grain leather and its co-products shall be based on the hide substance content. See Table 6.
Caprine skins tanning	Hide substance content	Allocation in leather tanning processes between full grain leather and its co-products shall be based on the hide substance content. See Table 7.
Ovine skins tanning	Hide substance content	Allocation in leather tanning processes between full grain leather and its co-products shall be based on the hide substance content. See Table 8.

Regarding the hide substance content method referred to in Table 5, The PEFCR (final version, 25 April 2018) of leather specifies the following:

"The calculation of simplified sets of average and approximate allocation factors [see Table 6, Table 7 and Table 8] *was carried out on the basis of the mass balance of the biogenic and bio-based Protein-Nitrogen content (g-N or %) Hide Substance) in the co-products (grain and flesh/middle splits), as well as by-products (hair or wool recovered) and residues (bio-solids and solid waste) generated during the transformation of input processing materials to finished leather and Tannery effluent treatment, respectively.*

The quantities of co-products, by-products and waste can vary significantly as a function of specific input material, output leather article and tannery. The thickness of the output pelts and leathers can result in significant variations of allocated hide substance content."

The allocation factors that should be used reported in Table 6, Table 7 and Table 8; these represent the percentages of total tanning impact that go to finished grain split leather and to recoverable losses. If these allocation factors are not used, deviations shall be justified in accordance with PCR 2011:13:

"The use of allocation factors deviating from the default ones provided in the present document shall be subject to strict review by the verifier, since it greatly influences the results of the study. Indeed, if it can be demonstrated that the hides or skins are obtained from animals that have been killed for eradicating a disease or that died at the farm or that were stillborn, then such animal co-products are legally treated as waste and they shall carry a 0% allocation."

The reference of the data presented in the below tables is the PEFCR of leather (final version, 25 April 2018).

Table 6. Allocation factors for tanning processes for bovine leather.

From	Raw				Semi-processed products	Raw		
To	Semipro-cessed products, split, hair burn	Semi-processed products, split, hair save	Semi-processed products, full substance, hair burn	Semi-processed products, full substance, hair save	Crust or Finished Grain Split Leathers	Finished leather, split, hair save	Finished leather, split, hair burn	Finished Sole Leather
Grain Splits	64%	60%	100%	91%	100%	60%	63%	100%
Flesh Splits	36%	31%	-	-	-	31%	37%	-
Hair	-	9%	-	9%	-	9%	-	-

Table 7. Allocation factors for tanning processes for caprine leather.

From	Raw		Semi-processed products
To	Semi-processed products or finished leather, hair save	Semi-processed products or finished leather, hair burn	Finished Leather
Finished leather	91.2%	100%	100%
Recovered leather	8.8%	-	-

Table 8. Allocation factors for tanning processes for ovine leather.

From	Raw		Semi-processed products
To	Semi-processed products or finished leather, wool save	Semi-processed products or finished leather, wool burn	Finished Leather
Finished leather	60.4%	100%	100%
Recovered leather	39.6%	-	-

4.6.2 ALLOCATION OF WASTE TREATMENT PROCESSES

Allocation of waste shall follow the polluter pays principle and its interpretation in EN 15804: “processes of waste processing shall be assigned to the product system that generates the waste until the end-of-waste state is reached.” The end-of-waste state is reached when all the following criteria for the end-of-waste state are fulfilled (adapted from EN 15804):

- the recovered material, component or product is commonly used for specific purposes;
- a market or demand, identified e.g., by a positive economic value, exists for such a recovered material, component or product;
- the recovered material, component or product fulfils the technical requirements for the specific purposes and meets the existing legislation and standards applicable to products; and
- the use of the recovered material, product or construction element will not lead to overall adverse environmental or human health impacts.

The above outlined principle means that the generator of the waste shall carry the full environmental impact until the point in the product life cycle in which the end-of-waste criteria are fulfilled. Waste may have a negative economic market value, and then the end-of-waste stage is typically reached after (part of) the waste processing and further refinement, at the point at which the waste no longer has a negative market value. This allocation method is (in most cases) in line with a waste generator’s juridical and financial responsibilities. See the GPI for further information and examples.

4.7 DATA QUALITY REQUIREMENTS AND SELECTION OF DATA

Life cycle inventory data are classified into specific data and generic data, where the latter can be selected generic data or proxy data. The data categories are defined as follows:

- specific data (also referred to as “primary data” or “site-specific data”):
  - data gathered from the actual manufacturing plant where product-specific processes are carried out;
  - actual data from other parts of the life cycle traced to the product under study, for example site-specific data on the production of materials or generation of electricity provided by contracted suppliers, and transportation data on distances, means of transportation, load factor, fuel consumption, etc., of contracted transportation providers; and
  - LCI data from databases on transportation and energy ware that is combined with actual transportation and energy parameters as listed above.
- generic data (sometimes referred to as “secondary data”), divided into:
  - selected generic data: data (e.g. commercial databases and free databases) that fulfil prescribed data quality requirements for precision, completeness, and representativeness (see below Section 4.7.1),

- proxy data: data (e.g. commercial databases and free databases) that do not fulfil all of the data quality requirements of "selected generic data".

Specific data shall be used for the core processes. Specific data shall be used for upstream and downstream processes, when available, otherwise generic data may be used. Generic data should be used in cases in which they are representative for the purpose of the EPD, e.g. for bulk and raw materials on a spot market, if there is a lack of specific data on the final product or if a product consists of many components.

4.7.1 RULES FOR USING GENERIC DATA

For generic data to be classified as "selected generic data", the following requirements apply:

- datasets shall be based on attributional LCA modelling (e.g., not be based on marginal data and not include credits from system expansion),
- the reference year shall be as current as possible and should be representative for the validity period of the EPD,
- the 1% cut-off rule (as described in Section A.3.3 of the GPI) shall be met on the level of the product system,
- datasets shall represent average values for a specific reference year; however, how data are generated could vary, e.g. over time, and then they should have the form of a representative annual average value for a specified reference period (such deviations shall be justified and declared in the EPD), and
- the representativeness of the data shall be assessed to be better than ±5%, in terms of the environmental impact calculated on the basis of the data, of data that is fully representative for the given temporal, technological and geographical context.

If selected generic data that meets the above data quality requirements are not available, proxy data may be used. The environmental impacts associated with proxy data shall not exceed 10% of the overall environmental impact of the product system.

The EPD may include a data quality declaration to demonstrate the share of specific data, selected generic data and proxy data contributing to the results of the environmental impact indicators.

4.7.2 EXAMPLES OF DATABASES FOR GENERIC DATA

Error! Reference source not found. lists examples of databases and datasets to be used for generic data. Please note that a data q uality assessment shall be performed also for data listed in the table, and that other data that fulfil the data quality requirements may also be used.

Table 9. Examples of databases and datasets to use for generic data.

PROCESS	GEOGRAPHICAL SCOPE	DATASET	DATABASE
Leather, Coated Leather, Leather Board	Global	Latest[5] or the most representative	Ecoinvent Other EPD studies
Textile processes	Global	Latest or the most representative	Ecoinvent
Fuels	Global	Latest or the most representative	European Reference Life Cycle Data System (ELCD) http://eplca.jrc.ec.europa.eu/ELCD3/ Ecoinvent
Chemicals	Global	Latest or the most representative	Ecoinvent
Transports	Global	Latest or the most representative	European Reference Life Cycle Data System (ELCD) http://eplca.jrc.ec.europa.eu/ELCD3/ Ecoinvent
Waste management	Global	Latest or the most representative	European Reference Life Cycle Data System (ELCD) http://eplca.jrc.ec.europa.eu/ELCD3/ Ecoinvent

4.7.3 DATA QUALITY REQUIREMENTS AND OTHER MODELLING GUIDANCE PER LIFE-CYCLE STAGE

Below are further data quality requirement per life-cycle stage. Exceptions to the requirements may be accepted, if justified in the EPD; such exceptions are subject to the approval by the verifier on a case-to-case basis.

4.7.3.1. Upstream processes

- Data referring to processes upstream in a supply chain over which the EPD owner has direct management control shall be specific and collected on site.
- Data referring to processes of a supplier of main parts, packaging, or main auxiliaries should be requested from the supplier as specific data, where relevant.
- Data on transport of main parts and components along the supply chain to a distribution point (e.g. a stockroom or warehouse) where the final delivery to the manufacturer can take place, should be specific and based on the actual transportation mode, distance from the supplier, and vehicle load.
- In case specific data from the supplier is lacking, selected generic data may be used. If this is also lacking, proxy data may be used (see Section 4.7). If that is the case, the EPD shall include a sensitivity analysis for the use of the aforementioned generic data.
- For upstream processes modelled with specific data, generation of electricity used shall be accounted for in this priority:
    1. Specific electricity mix as generated, or purchased from an electricity supplier, demonstrated by a Guarantee of Origin or similar as provided by the electricity supplier.
    2. Residual electricity mix of the electricity supplier on the market.
    3. Residual electricity mix on the market[6].

[5] The term “latest” refers to the most recent version of the dataset and database.

[6] The composition of the residual grid mixes on the market are available for all EU countries and a few additional European countries through the Association for Issuing Bodies (AIB) at https://www.aib-net.org/facts/european-residual-mix.

4. Electricity consumption mix on the market[7].

The residual electricity mix is the mix when all contract-specific electricity that has been sold to other customers has been subtracted from the total consumption mix. If the composition of the residual grid mix on the market has not been publicly disclosed, it may conservatively be estimated by subtracting renewables from the consumption mix on the market.

"The market" in the above hierarchy shall be defined as being the (residual or consumption) grid mix of the country where the electricity is used, with exceptions for specified countries for which a sub-national electricity grid mix shall be used: Australia, Brazil, Canada, China, India, and USA.

The mix of electricity used in upstream processes shall be documented in the EPD, where relevant.

- Packaging: specific data shall be used for production of consumer packaging, if the production is under the direct control of the EPD owner or if the environmental impact of the production is more than 10% of the declared results in any of the environmental performance indicators. In other cases, generic data may be used. When consumer packaging shows the organization's logo, the LCA report should report the exerted/non-exerted direct control on the production of consumer packaging by the organization.

4.7.3.2. Core processes

- Transport from the final delivery point of raw materials, chemicals, main parts, and components (see above regarding upstream processes) to the manufacturing plant/place of service provision should be based on the actual transportation mode, distance from the supplier, and vehicle load, if available.
- Specific data shall be used for the assembly of the product and for the manufacture of main parts as well as for on-site generation of steam, heat, electricity, etc., where relevant.
- For electricity used in the core processes, generation of electricity used shall be accounted for in this priority:
    1. Specific electricity mix as generated, or purchased from an electricity supplier, demonstrated by a Guarantee of Origin or similar as provided by the electricity supplier.
    2. Residual electricity mix of the electricity supplier on the market.
    3. Residual electricity mix on the market[8].
    4. Electricity consumption mix on the market[9]. This option shall not be used for electricity used in processes over which the manufacturer (EPD owner) has direct control.

  The residual electricity mix is the mix when all contract-specific electricity that has been sold to other customers has been subtracted from the total consumption mix. If the composition of the residual grid mix on the market has not been publicly disclosed, it may conservatively be estimated by subtracting renewables from the consumption mix on the market.

  "The market" in the above hierarchy shall be defined as being the (residual or consumption) grid mix of the country where the electricity is used, with exceptions for specified countries for which a sub-national electricity grid mix shall be used: Australia, Brazil, Canada, China, India, and USA.

  The mix of electricity used in the core processes shall be documented in the EPD, where relevant.
- Waste treatment processes of manufacturing waste should be based on specific data, if available.

4.7.3.3. Downstream processes

- The transport of the product to the customer shall be described in the EPD, where relevant, and be accounted for in this priority:
    1. Actual transportation modes and distances to a specific customer or market, representing the geographical scope of the EPD.

[7] For electricity markets without trade of Guarantees of Origin (or similar), the residual mix will, however, be identical to the consumption mix.

[8] The composition of the residual grid mixes on the market are available for all EU countries and a few additional European countries through the Association for Issuing Bodies (AIB) at https://www.aib-net.org/facts/european-residual-mix.

[9] For electricity markets without trade of Guarantees of Origin (or similar), the residual mix will, however, be identical to the consumption mix.

2. A weighted average of transportation modes and distances, based on transportation to several customers or markets, representing the geographical scope of the EPD.
3. Calculated as a fixed long transport of 1 000 km transport by lorry or 10 000 km by airplane, according to product type.

- Scenarios for the end-of-life stage shall be technically and economically practicable and compliant with current regulations in the relevant geographical region based on the geographical scope of the EPD. Key assumptions regarding the end-of-life stage scenario shall be documented in the LCA report.
- Data for the use stage and repairing operations are usually based on scenarios, but specific data should be used when available and relevant.
- Data on the emissions from the use stage and repairing operations should be based on documented tests, verified studies in conjunction with average or typical product use, or recommendations concerning suitable product use. Whenever applicable, test methods shall be internationally recognised.
- The use of electricity in the region/country where the product is used (as specified in the geographical scope of the EPD) shall be accounted for in the following priority:
    1. Residual electricity mix on the market[10].
    2. Electricity consumption mix on the market[11].

  The residual electricity mix is the mix when all contract-specific electricity that has been sold to other customers has been subtracted from the total production mix.

  "The market" in the above hierarchy shall be defined as being the (residual or consumption) grid mix of the country where the electricity is used, with exceptions for specified countries for which a sub-national electricity grid mix shall be used: Australia, Brazil, Canada, China, India, and USA.

  The mix of electricity used in the downstream processes shall be documented in the EPD, where relevant.

4.7.4 DATA QUALITY DECLARATION

The following data quality specifications shall be declared in the EPD:

- For the specific data, all data should represent the same time period and this time period shall be declared in the EPD. If this is not possible, any deviations shall be clearly presented in the EPD.
- The system model of secondary databases that are used in the LCA study shall be declared in the EPD (e.g. different system models, namely, "Allocation, cut-off by classification", "Allocation at the point of substitution" as specified in Ecoinvent database[12]).
- If the specific data is not accessible from contractors or from suppliers for upstream data, this shall be declared in the EPD and *the percentage of generic data (in GWP-total results) shall be declared*.
- Where used, the percentage of the proxy data in contribution to the results of the GWP-total indicator shall be declared in the EPD.

4.8 ENVIRONMENTAL PERFORMANCE INDICATORS

The EPD shall declare the default environmental performance indicators and their methods as described at the website (www.environdec.com/indicators), which includes both inventory indicators and indicators of potential environmental impact. The source and version of the impact assessment methods and characterisations factors used shall be reported in the EPD. Also other indicators may be declared, if justified, see Section 5.4.5.

[10] The composition of the residual grid mixes on the market are available for all EU countries and a few additional European countries through the Association for Issuing Bodies (AIB) at https://www.aib-net.org/facts/european-residual-mix.

[11] For electricity markets without trade of Guarantees of Origin (or similar), the residual mix will, however, be identical to the consumption mix.

[12] It is fundamental that only the system models compliant to the fundamental rules are applied. For example, "consequential" is not acceptable.

If the default list of environmental performance indicators and methods at the www.environdec.com/indicators is updated, the previous version of the list is valid in parallel to the new version during a transition period of at least 90 days, as described at the website.

Apart from inventory indicators (such as the required and optional inventory indicators listed at www.environdec.com/indicators), other inventory data may also be declared in the EPD, if relevant and useful for EPD users. Such data shall not be declared in the main body of the EPD, but in an annex.

4.9 INCLUDING MULTIPLE PRODUCTS IN THE SAME EPD

4.9.1 MULTIPLE PRODUCTS FROM THE SAME COMPANY

Several sets of results, reflecting different products, are not allowed to be declared in the same EPD. However, similar products from a single or several manufacturing sites covered by the same PCR and manufactured by the same company with the same major steps in the core processes may be grouped and thereby included in the same EPD. For such an EPD, there are three options:

- For each indicator, declare the average results of the included products. This average shall be weighted according to the production volumes of the included products, if relevant. In this option, the average content shall be declared in the content declaration.
- Declare the results of one of the included products – a representative product. The choice of the representative product shall be justified in the EPD, using, where applicable, statistical parameters. For example, the choice may be based on production volumes. In this option, the content of the representative product shall be declared in the content declaration.
- For each indicator, declare the highest result of the included products (i.e., the results of a “worst-case product”, which may be the results of one or several of the included products). In this option, the content declaration shall include the lowest amounts of recycled and biogenic content of the included products and their packaging, respectively, and the information on environmental and hazardous properties of substances shall reflect the highest share and most hazardous such substances contained in the any of the included products.

If any of the declared environmental impact results differ more than 10% between any of the included products, the grouping of the products shall be justified in the EPD and the variation of each impact indicator results for which the variation is above 10% shall be declared in the EPD.

4.9.2 SECTOR EPDS

The International EPD System allows for an industry association to develop an EPD in the form of a Sector EPD. A Sector EPD declares the average product of multiple companies in a clearly defined sector in a clearly defined geographical area. Products covered in a sector EPD shall follow the same PCR and the same declared unit shall be applied.

Any communication of the results from a Sector EPD should contain the information that the results are based on averages obtained from the sector as defined in the EPD. The communication shall not claim that the sector EPD results are representative for a certain manufacturer or its product.

The following information shall also be included in a Sector EPD:

- a list of the contributing manufacturers that the Sector EPD covers,
- a description of how the selection of the sites/products has been done and how the average has been determined, and
- a statement that the document covers average values for an entire or partial product category (specifying the percentage of representativeness) and, hence, the declared product is an average that is not available for purchase on the market.

5 CONTENT AND FORMAT OF EPD

EPDs based on this PCR shall contain the information described in this section. Flexibility is allowed in the formatting and layout provided that the EPD still includes the prescribed information. A generic template for EPDs is available at www.environdec.com.

The EPD content shall:

- be in line with the requirements and guidelines in ISO 14020 (Environmental labels and declarations – General principles),
- be verifiable, accurate, relevant and not misleading, and
- not include rating, judgements or direct comparison with other products[13].

An EPD should be made with a reasonable number of pages for the intended audience and use.

The content of EPDs published in machine-readable format shall correspond with the content of the underlying EPD.

5.1 EPD LANGUAGES

EPDs should be published in English but may also be published in additional languages. If the EPD is not available in English, it shall contain an executive summary in English including the main content of the EPD. This summary is part of the EPD and, thus, also subject to the verification process.

5.2 UNITS AND QUANTITIES

The following requirements apply for units and quantities:

- The International System of Units (SI units) shall be used where available, e.g., kilograms (kg), Joules (J) and metres (m). Reasonable multiples of SI units may be decided in the PCR to improve readability, e.g., grams (g) or megajoules (MJ). The following exceptions apply:
  - Resources used for energy input (primary energy) should be expressed as kilowatt-hours (kWh) or megajoules (MJ), including renewable energy sources, e.g., hydropower, wind power and geothermal power,
  - Water use should be expressed in cubic metres (m^3),
  - Temperature should be expressed in degrees Celsius (°C),
  - Time should be expressed in the units most practical, e.g., seconds, minutes, hours, days or years,
  - Results of the environmental performance indicators shall be expressed in the units prescribed by the impact assessment methods, e.g. kg CO_2 equivalents.
- Three significant figures[14] should be adopted for all results. The number of significant digits shall be appropriate and consistent.
- Scientific notation may be used, e.g. 1.2E+2 for 120, or 1.2E-2 for 0.012.
- The thousand separator and decimal mark in the EPD shall follow one of the following styles (a number with six significant figures shown for illustration):
  - SI style (French version): 1 234,56
  - SI style (English version): 1 234.56

  In case of potential confusion or intended use of the EPD in markets where different symbols are used, the EPD shall state what symbols are used for thousand separator and decimal mark.
- Dates and times presented in the EPD should follow the format in ISO 8601. For years, the prescribed format is YYYY-MM-DD, e.g., 2017-03-26 for March 26th, 2017.

[13] Therefore, results of normalization are not allowed to be reported in the EPD.

[14] Significant figures are those digits that carry meaning contributing to its precision. For example, with two significant digits, the result of 123.45 shall be displayed as 120, and 0.12345 shall be displayed as 0.12. In scientific notation, these two examples would be displayed as $1.2*10^2$ and $1.2*10^{-2}$.

- The result tables shall:
  - Only contain values or the letters “ND” (Not Declared). It is not possible to specify ND for mandatory indicators. ND shall only be used for voluntary parameters that are not quantified because no data is available.[15]
  - Contain no blank cells, hyphens, less than or greater than signs or letters (except “ND”).
  - Use the value “0” only for parameters that have been calculated to be zero.
  - Footnotes shall be used to explain any limitation to the result value.

5.3 USE OF IMAGES IN EPD

Images used in the EPD, especially pictures featured on the cover page, may in themselves be interpreted as an environmental claim. Images such as trees, mountains, wildlife that are not related to the declared product shall therefore be used with caution and in compliance with national legislation and best available practices in the markets in which the EPD is intended to be used.

5.4 EPD REPORTING FORMAT

The reporting format of the EPD shall include the following sections:

- Cover page (see Section 5.4.1)
- Programme information (see Section 5.4.2)
- Product information (see Section 5.4.3)
- Content declaration (see Section □)
- Environmental performance (see Section 5.4.5)
- References (see Section 5.4.9)

The following sections may be included:

- Additional environmental information (see Section 5.4.6)
- Additional social and economic information (see Section 5.4.7)

The following sections shall be included, if relevant:

- Differences versus previous versions (see Section 5.4.8)
- Executive summary in English (see Section 5.4.10)

5.4.1 COVER PAGE

The cover page shall include:

- Product name and image
- Name and logotype of EPD owner
- The text “Environmental Product Declaration” and/or “EPD”
- Programme: The International EPD System, www.environdec.com
- Programme operator: EPD International AB
- Logotype of the International EPD System
- EPD registration number as issued by the programme operator[16]

[15] This requirement does not intend to give guidance on what indicators are mandated (“shall”) or voluntary.

[16] The EPD shall not include a “registration number” if such is provided by the certification body, as this may be confused with the registration number issued by the programme operator.

- Date of publication (issue): 20XX-YY-ZZ
- Date of revision: 20XX-YY-ZZ, when applicable
- Date of validity; 20XX-YY-ZZ
- A note that *"An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com."*
- A statement of conformity with ISO 14025.
- For EPDs covering multiple products: a statement that the EPD covers multiple products and a list of all products covered by the EPD.
- For Sector EPDs: a statement that the EPD is a Sector EPD.

In the case of EPDs registered through a regional hub (a regional or national programme based on and fully aligned with the International EPD System through an agreement with the programme operator), "Programme", "Programme operator", and "Logotype" shall be expanded to include a reference to the regional programme and the organisation responsible for it.

Where applicable, the cover page shall also include the following information:

- Information about dual registration of EPD in another programme, such as registration number and logotype.
- A statement of conformity with other standards and methodological guidelines.

5.4.2 PROGRAMME INFORMATION

The programme information section of the EPD shall include:

- Address of programme operator: *EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden, E-mail: support@environdec.com*
- The following statement on the requirements for comparability of EPDs, adapted from ISO 14025: *"EPDs within the same product category but from different programmes may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison."*
- A statement that the EPD owner has the sole ownership, liability and responsibility of the EPD
- Information about verification[17] and the PCR in a table with the following format and contents:

Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
PCR: *<name, registration number, version and UN CPC code(s)>*
PCR review was conducted by: *<name and organisation of the review chair, and information on how to contact the chair through the programme operator>*
Life cycle assessment (LCA)
LCA accountability: *<name, organization>*
Third-party verification

[17] If the EPD has been verified by an approved individual verifier who has received contractual assistance from a certification body that is not accredited, this certification body shall not be included in this table.

Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☐ EPD verification by individual verifier Third-party verifier: <*name, organisation, and signature of the third-party verifier*> Approved by: The International EPD System
OR
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☐ EPD verification by accredited certification body Third-party verification: <*name, organisation*> is an approved certification body accountable for the third-party verification The certification body is accredited by: <*name of accreditation body & accreditation number, where applicable*>
OR
Independent third-party verification of the declaration and data, according to ISO 14025:2006 via: ☐ EPD verification by EPD Process Certification* Internal auditor: <*name, organisation*> Third-party verification: <*name, organisation*> is an approved certification body accountable for third-party verification Third-party verifier is accredited by: <*name of accreditation body & accreditation number, where applicable*> *For EPD Process Certification, an accredited certification body certifies and reviews the management process and verifies EPDs published on a regular basis. For details about third-party verification procedure of the EPDs, see GPI v4, Section 7.5.
Procedure for follow-up of data during EPD validity involves third-party verifier[18]: ☐ Yes ☐ No

5.4.3 PRODUCT INFORMATION

The product information section of the EPD shall include:

- address and contact information of the EPD owner,
- description of the organisation. This may include information on products- or management system-related certifications (e.g. ISO 14024 Type I environmental labels, ISO 9001- and 14001-certificates and EMAS-registrations) and other relevant work the organisation wants to communicate (e.g. SA 8000, supply-chain management and social responsibility),
- name and location of production site,

[18] Procedure for follow-up the validity of the EPD is at minimum required once a year with the aim of confirming whether the information in the EPD remains valid or if the EPD needs to be updated during its validity period (see Sections 7.3.2 and 7.4.9 of the GPI). The follow-up can be organized entirely by the EPD owner or together with the original verifier via an agreement between the two parties. In both approaches, the EPD owner is responsible for the procedure being carried out. If a change that requires an update (see Section 6.5 of the GPI) is identified, the EPD shall be re-verified by a verifier.

- product identification by name, and an unambiguous identification of the product by standards, concessions or other means,
- identification of the product according to the UN CPC scheme system. Other relevant codes for product classification may also be included, e.g.
  - Common Procurement Vocabulary (CPV),
  - United Nations Standard Products and Services Code® (UNSPSC),
  - Classification of Products by Activity (NACE/CPA),
  - Australian and New Zealand Standard Industrial Classification (ANZSIC), or
  - Global Trade Item Number (GTIN).
- a description of the product, including the main materials that make up the footwear and its weight,
- a description of the technical purpose of the product, including its application/intended use,
- a product certification, if any,
- a description of the background system, including the main technological aspects,
- for EPDs covering multiple products: a description of the selection of products/sites, a list of contributing manufacturers (if Sector EPD), etc. (see Section 4.9),
- geographical scope of the EPD, i.e., for which geographical location(s) of use and end-of-life the product's performance has been calculated,
- functional unit,
- expected number of uses, if calculated,
- mechanical and physical properties of the product measured by means of reference standards (see Table 3 in Section 4.2). The EPD shall report, as in Table 10[19], the technical characteristics of the product through specific test results. If the characteristic has not been tested it is sufficient to report so. International or national-recognised standards (see Section 4.2) shall be used when referring to specific technical issues. More information can be added on voluntary basis.

Table 10. Technical characteristics demonstrated by test results.

Technical Characteristics	**Reference Standard**	**Units**	**Threshold**	**Performed**	**Results / Passed or not passed**
Mechanical properties					
Abrasion resistance	*Insert the reference standard selected for the assessment of the characteristic. Add more lines if more tests were performed per single characteristics.*	*Insert the unit of measurement*	*Insert the Threshold of the reference standard selected, if available.*	*Yes / No Indicate whether the characteristics has been tested.*	*If the characteristic has been tested, insert the score achieved or if the test has been passed or not.*
Flex resistance					
Outsoles and upper tear strength					
Upper sole adhesion					
Heel resistance (if applicable)					
Physical properties					
Color fastness					
Resistance to weather conditions					

- declaration of the year(s) covered by the data used for the LCA calculation and other relevant reference years,
- a specification of data quality, as stated in Section 4.7.4.

[19] In case of a multiple product EPD this table shall declare the worst result achieved, for each characteristic, of the included products or product families.

- reference to the main database(s) for generic data and LCA software used, if relevant,
- system diagram of the processes included in the LCA, divided into the life cycle stages,
- description that the EPD system boundary is “cradle-to-grave”,
- information on which life-cycle stages are not considered (if any), with a justification of the omission, and
- references to any relevant websites for more information or explanatory materials.

This section may also include:

- name and contact information of organisation carrying out the underlying LCA study,
- any additional information about the underlying LCA-based information, such as cut-off rules, data quality, allocation methods, and other methodological choices and assumptions,
- a description of the material properties of the product with a declaration of relevant physical or chemical product properties, such as density, etc., and
- if end-of-life treatment is not included, the EPD shall contain a statement that it shall not be used for communicating environmental information to consumers/end users of the product.

5.4.4 CONTENT DECLARATION

The content declaration section shall declare the weight of one unit of product, as purchased, and contain information about the content of the product in the form of a list of materials and chemical substances including information on their environmental and hazardous properties. The gross weight of each material/substance shall be declared, including a minimum of 99% of the materials/substances in one unit of product.

The content declaration does not apply to proprietary materials and substances covered by exclusive legal rights including patent and trademarks. In general, an indication that a product is “free” of a specific hazardous material or substance should be done with caution and only when relevant, following the rules in ISO 14021 on self-declared environmental claims.

Information on the hazardous properties of materials and chemical substances should follow the requirements given in the latest revision of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS),[20] issued by the United Nations or national or regional applications of the GHS. As an example, the following regulations should be used for EPDs intended to be used in the European Union:

- Regulation (EC) No 1907/2006 of the European parliament and of the council of 18 December 2006 concerning the Registration, Evaluation, Authorisation, and Restriction of Chemicals (REACH); and
- Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling, and packaging of substances and mixtures.

5.4.4.1. Information about recycled materials

When a product is made in whole or in part with recycled materials, the provenance of the materials (pre-consumer or post-consumer) shall be presented in the EPD as part of the content declaration.

To avoid any misunderstanding about which material that may be considered “recycled material”, the guidance given in ISO 14021 shall be considered. In brief, the standard states that:

- only pre-consumer or post-consumer materials (scraps) shall be considered in the accounting of the recycled materials, and
- materials coming from scrap reutilisation (such as rework, regrind, or scrap generated in a process and capable of being reclaimed within the same process that generated it) shall not be considered as recycled content.

5.4.4.2. Information about packaging

As packaging is strongly connected with the product, the producer shall provide information about packaging in the EPD, when applicable. Packaging may be classified as:

[20] The GHS document is available at www.unece.org.

- Distribution Packaging: packaging designed to contain one or more articles or packages, or bulk materials, for the purposes of transport, handling and/or distribution (ISO 21067-1:2016, Section 2.2.6)
- Consumer Packaging: packaging constituting, with its content, a sales unit for the final user or consumer at the point of retail (ISO 21067-1:2016, Section 2.2.7).

Consumer packaging is generally the outcome of eco-design processes, or other activities, under direct control of the organisation. Many critical categories with strict legal requirements belong to consumer packaging category like food contact packaging and pharmaceutical packaging.

The weight of the packaging per product, and the type and function of the packaging, shall be reported in the EPD.

A statement of the source of the materials (pre-consumer or post-consumer) shall be presented in the EPD when the packaging is made in whole or in part by recycled materials.

5.4.5 ENVIRONMENTAL PERFORMANCE

Below subsections list the mandatory environmental performance indicators to declare in the EPD. LCA results based on additional indicators may be declared, if they are relevant for the product category, their inclusion is justified in the EPD, appropriate methods[21] are used, and the results are verifiable. If the additional indicators appear to the reader to display duplicate information, the EPD shall contain an explanation of the differences between the declared indicators.

5.4.5.1. Environmental impacts

The EPD shall declare the environmental impact indicators, per declared unit, per life-cycle stage and in aggregated form, using the default impact categories, impact assessments methods and characterisation factors available on www.environdec.com/indicators. The source and version of the impact assessment methods and characterisation factors used shall be reported in the EPD.

Alternative regional life cycle impact assessment methods and characterisation factors may be calculated and displayed in addition to the default list. If so, the EPD shall contain an explanation of the differences between the declared sets of indicators, as they may appear to the reader to display duplicate information.

5.4.5.2. Use of resources

The EPD shall declare the mandatory, and may declare the optional, indicators for resource use listed on www.environdec.com/indicators per declared unit, per life-cycle stage and in aggregated form.

5.4.5.3. Waste production and output flows

Waste generated along the whole life cycle production chains shall be treated following the technical specifications described in the GPI. The EPD may declare the optional indicators for waste production and output flows as listed on www.environdec.com/indicators per declared unit, per life-cycle stage and in aggregated form.

5.4.6 ADDITIONAL ENVIRONMENTAL INFORMATION

An EPD may declare additional environmentally relevant information, in addition to the LCA results of the section on environmental performance results. The additional environmental information may cover various aspects of specific relevance for the product, for example:

- the release of dangerous substances into indoor air, soil, and water during the use stage,
- instructions for proper use of the product, e.g. to minimise energy or water consumption or to improve the durability of the product,

[21] If any of the following impact categories are declared in the EPD, the corresponding characterisation methods listed in EN 15804 should be used: particulate matter emissions, ionizing radiation (human health), eco-toxicity (freshwater), human toxicity (cancer effects), human toxicity (non-cancer effects) and land use related impacts/soil quality. If these impact categories and characterisation methods are used, the corresponding disclaimers listed in EN 15804 shall be declared in the EPD.

- instructions for proper maintenance and service of the product, e.g. to minimise energy or water consumption or to improve the durability of the product,
- information on key parts of the product that determine its durability,
- information on recycling including, e.g. suitable procedures for recycling the entire product or selected parts and the potential environmental benefits gained,
- information on a suitable method of reuse of the product (or parts of the products) and procedures for disposal as waste at the end of its life cycle,
- information regarding disposal of the product, or inherent materials, and any other information considered necessary to minimise the product's end-of-life impacts, and
- a more detailed description of an organisation's overall environmental work, in addition to the information listed under Section 5.4.3, such as:
    - the existence of any type of organised environmental activity, and
    - information on where interested parties may find more details about the organisation's environmental work.

Any additional environmental information declared shall be substantiated and verifiable, and be derived using appropriate methods and be specific, accurate, not misleading, and relevant to the specific product. Quantitative information is preferred over qualitative information.

The additional environmental information shall not include LCA results, with some exceptions:

- If the EPD owner wants to display results of several scenarios for use or end-of-life stages, the most representative scenario (for the geographical scope of the EPD) shall be declared in the section on environmental performance results, and the other scenarios shall be declared in the section on additional environmental information.
- The LCA results of an alternative modelling approach may be declared as additional environmental information, if such an alternative modelling approach is explicitly allowed by the applicable PCR or the GPI. According to this PCR, alternative GWP-biogenic results may be declared, which considers the effect of long-term storage of biogenic carbon (see next bullet point).
- The additional environmental information may include information on permanent (more than 100 years) storage of biogenic carbon, either in the product, in a landfill, or as a consequence of applying carbon capture and storage (CCS) to the incineration of biogenic carbon, and how this would influence GWP-biogenic results if the GWP-biogenic indicator would allow consideration of such storage.

5.4.7 ADDITIONAL SOCIAL AND ECONOMIC INFORMATION

The EPD may also include other relevant social and economic information as additional and voluntary information. This may be product information or a description of an organisation's overall work on social or economic sustainability, such as activities related to supply chain management or social responsibility.

Any additional social and economic information declared shall be substantiated and verifiable, and be derived using appropriate methods and be specific, accurate, not misleading, and relevant to the specific product. Quantitative information is preferred over qualitative information.

5.4.8 DIFFERENCES VERSUS PREVIOUS VERSIONS

For EPDs that have been updated, the following information shall be included:

- a description of the differences versus previously published versions, and
- a revision date on the cover page.

5.4.9 REFERENCES

A reference section shall be included, including a list of all sources referred to in the EPD, including the GPI (including version number), and PCR (registration number, name, and version) used to develop the EPD.

5.4.10 EXECUTIVE SUMMARY IN ENGLISH

The executive summary, if included (see Section 5.1), shall contain relevant summarised information related to the programme, product, environmental performance, information related to pre-certified EPDs, and information related to sector EPDs. Besides this, further information may be added such as additional environmental, social or economic information, references as well as differences versus previous EPD versions.

6 LIST OF ABBREVIATIONS

ANZSIC	Australian and New Zealand Standard Industrial Classification
CPC	Central product classification
CPV	Common procurement vocabulary
EE	Electrical energy
EPD	Environmental product declaration
GPI	General Programme Instructions
GTIN	Global trade item number
ISO	International Organization for Standardization
LCA	Life cycle assessment
LCI	Life cycle inventory
NACE/CPA	Classification of products by activity
ND	Not declared
PCR	Product category rules
REACH	Restriction of chemicals
RSL	Reference service life
SI	The International System of Units
TE	Thermal Energy
UN	United Nations
UNSPSC	United Nations standard products and services code

7 LIST OF TABLES

8 REFERENCES

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9 VERSION HISTORY OF PCR

VERSION 1.0.0, 2024-06-19

Original version of this PCR.

FOOTWEAR

PRODUCT CATEGORY CLASSIFICATION: UN CPC 293, 2941, 2949, 295