PRODUCT CATEGORY RULES (PCR)
DATE 2025-04-11

FABRICS

PRODUCT CATEGORY CLASSIFICATION: UN CPC 265, 266, 267, 268, 2791, 27911, 27912, 27921, 27922, 27994, 27996 27997, 281, 3625

PCR 2022:04
VERSION 1.0.3

VALID UNTIL 2026-08-23

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TABLE OF CONTENTS

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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 at 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.

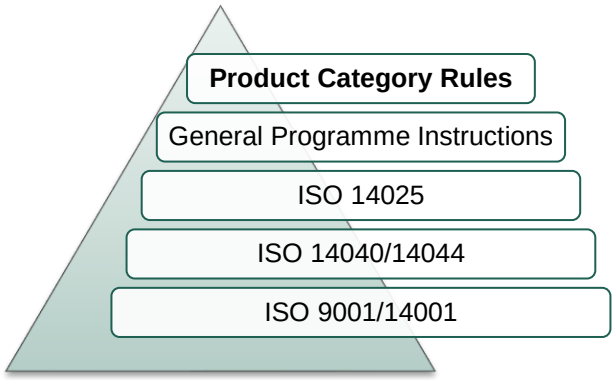

Figure 1 The hierarchy between PCRs, standards and other documents.

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 at 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:	Fabrics
Registration number and version:	PCR 2022:04, version 1.0.3
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:	Emre Can Çorumlu (freelancer), emrecancorumlu@gmail.com
PCR Committee:	Centro Tessile Cotoniero e abbigliamento SpA; CNR-STIIMA National Research Council; Eurojersey Spa; Innovhub - SSI; Sanko Tekstil Isletmeleri San. ve Tic. A.S. - ISKO Division; Semtrio Sustainability Consulting
Date of publication and last revision:	2025-04-11 (version 1.0.3) Version 1.0 was published 2022-08-23. See Section 8 for a version history.
Valid until:	2026-08-23
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 be 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 conformance:	General Programme Instructions of the International EPD® System, version 4.0, based on ISO 14025 and ISO 14040/14044
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 Product Category Rules (PCR) for the assessment of the environmental performance of woven, tufted, knitted, crocheted, special and other fabric types and the declaration of this performance by an EPD. The product category corresponds to UN CPC 265, 266, 267, 268, 27911, 27912, 27921, 27994, 27996 27997, 281, and 3625.

The product group is defined by The UN CPC classification:

Division: 26 - Yarn and thread; woven and tufted textile fabrics

- Group: 265 Woven fabrics (except special fabrics) of natural fibres other than cotton
  - Class 2651 - Woven fabrics of silk or of silk waste
  - Class 2652 - Woven fabrics of carded wool or of carded fine animal hair, containing 85% or more by weight of wool or fine animal hair
  - Class 2653 - Woven fabrics of combed wool or of combed fine animal hair, containing 85% or more by weight of wool or fine animal hair
  - Class 2654 - Woven fabrics of wool or fine animal hair, containing less than 85% by weight of wool or fine animal hair
  - Class 2655 - Woven fabrics of coarse animal hair or of horsehair
  - Class 2656 - Woven fabrics of flax
  - Class 2657 - Woven fabrics of jute and other textile bast fibres (except flax, true hemp and ramie)
  - Class 2659 - Woven fabrics of other vegetable textile fibres; woven fabrics of paper yarn
- Group: 266 Woven fabrics (except special fabrics) of cotton
  - Class 2661 - Woven fabrics of cotton, containing 85% or more by weight of cotton, weighing not more than 200 g/m2
  - Class 2662 - Woven fabrics of cotton, containing 85% or more by weight of cotton, weighing more than 200 g/m2
  - Class 2663 - Woven fabrics of cotton, containing less than 85% by weight of cotton, mixed mainly or solely with man-made fibres
  - Class 2669 - Other woven fabrics of cotton
- Group: 267 Woven fabrics (except special fabrics) of manmade filaments and staple fibres
  - Class 2671 - Woven fabrics of man-made filament yarn, obtained from high tenacity yarn of nylon or other polyamides, of polyesters or of viscose rayon; woven fabrics of synthetic filament yarn, obtained from strip or the like; woven fabrics of synthetic filament yarn, consisting of layers of parallel yarns superimposed on each other at angles, the layers being bonded at the intersections of the yarns (including mesh scrims)
  - Class 2672 - Other woven fabrics of man-made filament yarn, containing 85% or more by weight of such filaments
  - Class 2673 - Other woven fabrics of man-made filament yarn
  - Class 2674 - Woven fabrics of synthetic staple fibres, containing 85% or more by weight of synthetic staple fibres
  - Class 2675 - Woven fabrics of artificial staple fibres, containing 85% or more by weight of artificial staple fibres
  - Class 2676 - Woven fabrics of man-made staple fibres, containing less than 85% of such fibres, mixed mainly or solely with cotton
  - Class 2677 - Woven fabrics of man-made staple fibres, containing less than 85% of such fibres, mixed mainly or solely with wool or fine animal hair
  - Class 2679 - Other woven fabrics of man-made staple fibres
- Group: 268 Special fabrics
  - Class 2681 - Woven pile fabrics and chenille fabrics (other than terry towelling and narrow fabrics) of cotton

- Class 2682 - Woven pile fabrics and chenille fabrics (other than terry towelling and narrow fabrics) of man-made fibres
- Class 2683 - Other woven pile fabrics and chenille fabrics (other than terry towelling and narrow fabrics)
- Class 2684 - Terry towelling and similar woven terry fabrics (other than narrow fabrics) of cotton
- Class 2685 - Other terry towelling and similar woven terry fabrics (other than narrow fabrics)
- Class 2686 - Gauze (other than narrow fabrics)
- Class 2688 - Tufted textile fabrics, other than carpets
- Class 2689 - Woven fabrics (including narrow fabrics) of glass fibres

Division 27 - Textile articles other than apparel

- Group: 279 Textiles n.e.c.
  - Class 2791 - Tulles, lace, narrow woven fabrics, trimmings and embroidery
  - Sub-Class 27011 - Narrow woven fabrics; narrow fabrics of warp without weft assembled by adhesive (bolducs); labels, badges and similar articles of textile materials, not embroidered; braids in the piece; ornamental trimmings in the piece, without embroidery, other than knitted or crocheted; tassels, pompons and similar articles
  - Sub-Class 27912 - Tulles and other net fabrics, except woven, knitted or crocheted fabrics; lace in the piece, in strips or in motifs
  - Sub-Class 27921 - Felt
  - Sub-Class 27994 - Woven fabrics of metal thread or metallized yarn n.e.c.
  - Sub-Class 27996 - Tyre cord fabric of high tenacity yarn of nylon or other polyamides, polyesters or viscose rayon
  - Sub-Class 27997 - Textile fabrics, impregnated, coated or covered n.e.c.

Division 28 - Knitted or crocheted fabrics; wearing apparel

- Group: 281 Knitted or crocheted fabrics
  - Class 2811 - Pile fabrics and terry fabrics, knitted or crocheted
  - Class 2819 - Other knitted or crocheted fabrics

Division 36 - Rubber and plastics products

- Group: 362 Other rubber products
  - Class 3625 - Rubberized textile fabrics, except tyre cord fabric

Fabrics not covered by the above CPC classification are also within the scope of this PCR (except below listed exclusion). If there is no CPC code that corresponds to a specific fabric, a detailed description of the fabric shall be included in the LCA report and in the EPD.

Fabrics that fall under the scope of PCR 2019:14 Construction products (based on EN 15804 and ISO 21930) and nonwoven fabrics are excluded from this PCR. For nonwovens, please refer to PCR 2011:06 and PCR 2016:06.

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

This PCR was available for open consultation from 2022-02-04 until 2022-04-03, 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. None of the stakeholders providing comments during the open consultation agreed to be listed as contributors in the PCR or at www.environdec.com.

3.2 PCR REVIEW

3.2.1 VERSION 1.0

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 info@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:	2022-04-20 until 2022-05-24

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.
- GlobalEPD
- EPD Norway
- IBU
- PEP ecopassport®
- EarthSure
- EDF
- KEITI Environmental Declaration of Products
- JEMAI EcoLeaf
- EMAI CFP Program
- UL Environment

- ASTM International EPD Program
- NSF International National Center for Sustainability Standards EPD
- Carbon Leadership Forum PCRs
- BRE Global EN EPD Verification Scheme
- SCS Global Services

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
PCR 2018:08 Woven, knitted and crocheted fabrics of naturals fibres (except silk), for apparel sector (1.02)	International EPD® System	2018:08, version 1.02	Woven, knitted and crocheted fabrics of naturals fibres (except silk), for apparel sector
PCR 2012:14 Woven, knitted or crocheted fabrics (of synthetic fibres) (expires 2021-09-23) (2.13)	International EPD® System	2012:14, version 2.13	Woven, knitted or crocheted fabrics (of synthetic fibres)
PCR 2019:03 Woven fabrics of silk and silk-like fibers (1.01)	International EPD® System	2019:03, version 1.01	Woven fabrics of silk and silk-like fibers
PCR 2020:04 Textile manufacturing services, non-apparel fabrics made of natural fibres other than cotton (1.0)	International EPD® System	2020:04, Version 1.0	Textile manufacturing services, Nonwovens, Knitted or crocheted fabrics, Woven fabrics (except special fabrics) of natural fibres other than cotton

The scope of this PCR has overlaps with the scopes of above listed PCRs on fabrics in the International EPD® System. As the other PCRs expire, they will be replaced by this PCR, except PCR 2020:04, for which the overlapping scope will be replaced by this PCR immediately upon its publication (then PCR 2020:04 will be limited to the manufacturing service of producing the good).

3.4 REASONING FOR DEVELOPMENT OF PCR

This PCR was developed to enable publication of EPDs for this product category based on ISO 14025, 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.

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:

- Albers et al., 2008. Analyzing the Environmental Impacts of Simple Shoes: A Life Cycle Assessment of the Supply Chain and Evaluation of End-of-Life Management Options, University of Santa Barbara.
- Ashton EG, 2018. Analysis of footwear development from the design perspective: Reduction in solid waste generation, Strategic Design Research Journal.

- Beton A, Dias D, Farrant L, Gibon T, Le Guern Y, Desaxce M, Perwueltz A, Boufateh I, Wolf O, Kougoulis J, Cordella M, Dodd N, 2014. Environmental Improvement Potential of Textiles (IMPRO Textiles). Publications Office of the European Union, European Union, Luxembourg.
- Brugnoli F, Kráľ I, Life Cycle Assessment, 2012. Carbon Footprint in Leather Processing (Review of methodologies and recommendations for harmonization).
- Cheah et al., 2013. Manufacturing-focused emissions reductions in footwear production, Journal of Cleaner Production (44).
- Cordella M, Dodd N, 2014. Environmental Improvement Potential of Textiles (IMPRO Textiles). Publications Office of the European Union, European Union, Luxembourg. https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-researchreports/environmental-improvement-potential-textiles-impro-textiles.
- Gottfridsson M, Zhang Y, 2015. Environmental impacts of shoe consumption: Combining product flow analysis with an LCA model for Sweden, Master's thesis, Chalmers University of Technology.
- Guţă et al., 2016. Applications of Life Cycle Assessment to Leather industry – an overview and a case study, ICAMS, INCDTP - Division Leather and Footwear Research Institute (ICPI).
- Luca et al., 2018. Life Cycle Assessment of two alternative end-of-life scenarios for leather safety shoes, ICAMS.
- Maciel et al., 2017. Comparative Life Cycle Assessment among Three Polyurethane - Adhesive Technologies for the Footwear Industry, ACS Sustainable Chem. Eng. 5.
- Mansell G, 2019. Life Cycle Assessment of AERA Footwear.
- Milà et al., 1998. Application of Life Cycle Assessment to Footwear, International Journal of LCA 3 (4).
- Muthu S, 2015. Handbook of Life Cycle Assessment (LCA) of Textiles and Clothing. Cambridge: Woodhouse Publishing.
- Peiris O, 2015. Comparative Analysis of Life Cycle Assessment (LCA) on Levis Jeans and Nike Shoes, National University of Singapore.
- Rivera Muñoz Z, 2013. Water, energy and carbon footprints of a pair of leather shoes, Master's thesis, KTH Royal Institute of Technology.
- Van der Velden NM, Patel MT, Vogtlander JG, 2014. LCA benchmarking study on textiles made of cotton, polyester, nylon, acryl, or elastane. International Journal of Life Cycle Assessment 19, 331e356.
- Van Rensburg et al., 2020- Life cycle and End-of-Life management options in the footwear industry: A review, Waste Management & Research.
- WL Gore & Associates GmbH, 2014. LCA of a pair of GORE-TEX ® branded waterproof and breathable hiking boots.

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 DECLARED UNIT

The declared unit is 1 m^2 of fabric and its packaging (the area of the packaging is not included in this 1 m^2). The reference flow in the LCA shall be defined at the point where the product arrives at the customer gate, i.e. any losses occurring before then must be taken into account.

This PCR uses a declared unit instead of a functional unit. This is because the covered products are intermediate products with many different potential uses and functions, and not all relevant functional aspects are possible to capture in one or a few predefined functional units. The functional aspects shall, however, be taken into consideration when comparing EPDs based on this PCR.

4.2 TECHNICAL SPECIFICATION, LIFESPAN AND REFERENCE SERVICE LIFE (RSL)

Reference Service Life (RSL) is not applicable for this product category. A lifespan shall, however, be described if the use stage of the fabric is included in the system boundary. The description shall include the assumptions made in modelling the use stage, e.g. life-time in years, industry used in, number of uses, and washing cycles.

The EPD shall clearly describe the considered product according to relevant test methods according to fabric type. Some technical specification examples are given in Table 2.

Table 2 Examples of technical specifications to declare in the EPD.

Technical Specification	Reference Standard
Composition	Regulation (EU) No 1007/2011
Width and Length	EN 1773:1998
Surface fuzzing and pilling	ISO 12945-2:2002
Determination of pH	ISO 3071:2006
Elasticity	EN 14704-1:2005
Dimensional change to washing	ISO 6330:2012 ISO 15797:2017
Colour fastness to artificial light: Xenon arc fading lamp test	ISO 105 B02:2014
Colour fastness to water	ISO 105 E01:2013
Colour fastness to rubbing	ISO 105-X12:2016
Colour fastness to rubbing	ISO 105-C06
Other relevant specification may be added	

Product description in the EPD shall include:

- the technical and functional characteristics of the fabric measured in accordance with the relevant tests methods (recognised standards should be use when referring to specific technical issues), and
- product certification(s), if any.

4.3 SYSTEM BOUNDARY

The scope depend on the type of EPD as described below:

a) cradle to gate with module C1–3,

b) cradle to gate with module C1–3 and optional modules (A1–3 + C1–3 and additional modules). The additional modules may be one or more selected from A4–A5 and/or B1–B2, or

c) cradle to grave (A1–3 + A4–5 + B1–2 + C1–3).

The type of EPD shall be stated in the EPD.

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.

End-of-life treatment of the fabric may be excluded if all the following criteria are fulfilled[2]:

- the product is physically integrated with other products in the subsequent life-cycle process so they cannot be physically separated from them at end of life,
- the product or material is no longer identifiable at end-of-life as a result of a physical or chemical transformation process,
- the product or material does not contain biogenic carbon, and
- the EPD shall not be used for business-to-consumer communication.

In EPDs based on this PCR an additional division of the life cycle shall be made based on “life-cycle modules” A1-C3 (inspired by EN 15804), see Table 3.

Table 3: The life cycle module groups

LIFE CYCLE STAGE	LIFE CYCLE MODULE	LIFE CYCLE MODULE GROUP	MANDATORY / OPTIONAL
Upstream	A1) Raw material supply	A1-A3) Product stage	Mandatory
Core	A2) Transport		Mandatory
	A3) Manufacturing		Mandatory
Downstream	A4) Transportation of the fabric to retailer	A4-A5) Forming stage	Optional
	A5) Further processing of the fabric		Optional
	B1) Transportation of the fabric to the use phase	B1-B2) Use stage	Optional

[2] Exclusion of end-of-life treatment is only applicable for the fabric itself, not for the product packaging.

	B2) Use of the fabric by the consumer		Optional
	C1) Disassembling / sorting	C1-C3) End-of-life stage	Mandatory (but may be excluded for fabric if above criteria are met)
	C2) Transport to recovery/disposal		Mandatory (but may be excluded for fabric if above criteria are met)
	C3) Final disposal		Mandatory (but may be excluded for fabric if above criteria are met)

4.3.1.1. Upstream processes

The following attributional processes are part of the product system and classified as upstream processes:

A1) Raw material supply

- extraction and processing of raw materials (*fibres that construct the fabric and chemicals used in the manufacturing are included*)
- recycling processes of secondary materials from other product life cycles,
- production of input components,
- 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.

Raw materials entering the system shall be split into:

- Virgin raw materials,
- Recycled raw materials.

Secondary materials used in the production system shall be accounted adopting the following approach:

- The environmental impacts related to the “previous life cycle” shall not be considered.
- The processes needed to prepare a secondary material for new use shall be considered (see General Programme Instructions v.4.0, Annex A.5.2 for further information)

4.3.1.2. Core processes

The following attributional processes are part of the product system and classified as core processes:

A2) Transportation

- transportation of materials and components to the manufacturing of the product under study, and
- generation of electricity and production of fuels, steam and other energy carriers used in transportation.

A3) Manufacturing

- manufacturing of the product under study,
- building (or dismantling) of a production site, infrastructure, production and maintenance of manufacturing equipment, if they make up a significant share of the overall attributable environmental impact,
- 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 manufacturing.

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:

- manufacturing of production equipment, buildings and other capital goods (unless they make up a significant share of the environmental impact, see above),
- business travel of personnel ,
- travel to and from work by personnel, and
- research and development activities.

4.3.1.3. Downstream processes

The following attributional processes are part of the product system and classified as downstream processes:

A4) Transport

- transportation of the fabric to retailer, and
- generation of electricity and production of fuels, steam and other energy carriers used in the transportation to retailer.

A5) Further processing of the fabric

- production of the end product and forming of the fabric, and
- generation of electricity and production of fuels, steam and other energy carriers used in the further processing of the fabric.

B1) Transportation of the fabric to the use phase

- distribution of the fabric,
- generation of electricity and production of fuels, steam and other energy carriers used in the distribution.

B2) Use of the fabric

- product use, e.g. use of electricity or water, use activities causing direct emissions, maintenance activities, and
- generation of electricity and production of fuels, steam and other energy carriers used in the use of the fabric.

C1) Disassembling / sorting

- operations for the separation of product components and subsequent sorting, and recycling processes, and
- generation of electricity and production of fuels, steam and other energy carriers used in the disassembling/sorting.

C2) Transport to recovery/disposal

- transportation of the discarded product accounts for part of waste processing, e.g. to a recycling site or to final sorting yard or disposal, and
- generation of electricity and production of fuels, steam and other energy carriers used in the transportation to recovery/disposal.

C3) Final disposal

- Waste disposal including physical pre-treatment and management of the disposal site. Emissions from waste disposal are considered part of the product system under study and therefore are part of this module, according to the “polluter pays principle”.

4.3.2 OTHER BOUNDARY SETTING

4.3.2.1. Boundary towards nature

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

4.3.2.2. 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.

4.3.2.3. 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.

4.3.2.4. 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

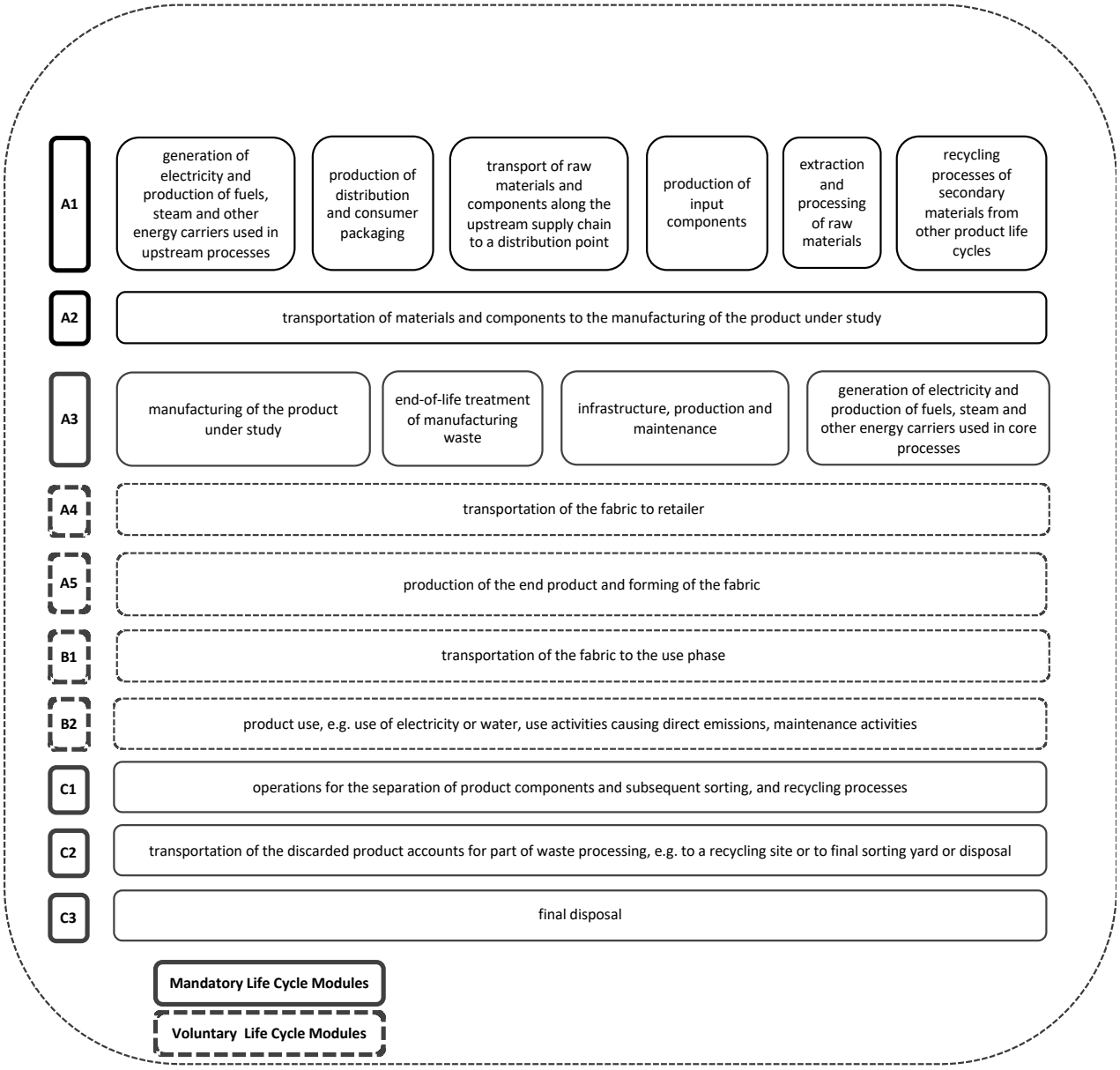

Figure 2 System diagram illustrating the processes that are included in the product system, divided into upstream, core and downstream processes.

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. Further, the cut-off shall be possible to 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. Economic allocation shall be based on a minimum of three years of recent average prices.

For key processes in the product system, Table 4 provides specific allocation guidance.

PROCESS	MAIN PRODUCT AND CO-PRODUCTS	ALLOCATION METHOD
Fabric construction	Fabric and rag/selvage	Mass allocation (see GPI 4.0 section A.5.2)
Animal fibres	Clean fibre and lanolin	Economic allocation
Animal fibres	Fibre, meat and milk	Biophysical allocation (see below for further guidance)
Silk and silk-like fibres	Clean fibre and sericin	Economic allocation

Table 4 Allocation method for key processes in the product system

For allocation between milk, meat, and fibre a biophysical allocation approach shall be used. The allocation ratio for fibre, relative to fibre plus meat and milk shall be calculated from the ratio of the metabolizable protein requirement for fibre production to the metabolizable protein requirement for fibre, meat (the component for live weight sold for meat) and milk (if relevant) production using:

Allocation % to fibre = 100 x (protein req. for fibre/(protein req. for fibre + protein req. for meat + protein req. for milk))

Farm survey data should be used to define ruminant production systems and ruminant population. The data should be used to determine the protein requirements with the recommended hierarchy:

1. Apply a published country-specific model such as stated in Australian Livestock Feeding Standards – Ruminants.

2. Apply another model that has been peer-reviewed and published and that is applicable to the region and country.

3. Apply NRC (2007) metabolizable protein requirement model.

For biophysical allocation, a sensitivity analysis shall be carried out to illustrate the effects of the choice of biophysical allocation The biophysical allocation approach, protein requirements calculation model, sensitivity analysis methodology and sensitivity analysis result shall be available to the verifier and shall be presented in the EPDs.

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 energyware 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) 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.

For fabrics that are made out of glass fibres, the environmental impacts associated with proxy data may exceed 10% of the overall environmental impact of the product system. The variation shall be indicated in the LCA report shall be clary stated in the EPD with references to the proxy data.

The EPD shall 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. (see Section 4.7.4).

4.7.2 EXAMPLES OF DATABASES FOR GENERIC DATA

No recommended databases for generic data have been identified for the product category, since the PCR includes many different fabric products a wide range of databases could be relevant.

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 and activities upstream in a supply chain over which an organisation has direct management control shall be specific and collected on site.
- Data referring to contractors and suppliers that supply main parts, packaging, or main auxiliaries should be requested from the contractor as specific data as well as infrastructure, where relevant. The following data-collection hierarchy shall be used:
  - Collect the specific data from the specific suppliers. This data shall represent the time period for which those products were produced (not the fabric's time period, but the time period when the supplier's produced e.g. 1 kg of cotton yarn).
  - If it is not possible to collect specific data from the supplier or not possible to get data that represents the specific time period of production, selected generic data and/or proxy data may be used as specified in the GPI. In such case this situation shall be declared in the LCA and in the EPD (see section 4.7.4).
- Where relevant, energy consumption per unit of product shall represent its specific manufacturing line, its specific manufacturing technology, and its specific manufacturing period, not the entire facility's energy consumption divided by total manufacturing capacity of the facility. This applies to both imported energy and on-site generated energy which are consumed in the manufacturing. Origin of the on-site energy generation shall be specified in the LCA report.
- 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 is lacking, selected generic data may be used. If this is also lacking, proxy data may be used (see Section 4.7).
- 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.
  4. Electricity consumption mix on the market.

  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.

  "The market" in the above hierarchy may correspond a national electricity market, if this can be justified.

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

- Packaging: specific data shall be used for the consumer packaging production if it is under the direct control of the organization or if the environmental impact related to the consumer packaging production is more than 10% of the total product environmental 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.
- Goods: 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.
- All data used to model the core processes shall represent the same time period.
- Where relevant, energy consumption per unit of product shall represent its specific manufacturing line, its specific manufacturing technology, and its specific manufacturing period, not the entire facility's energy consumption divided by total manufacturing capacity of the facility. This applies to both imported energy and on-site generated energy which are consumed in the manufacturing. Origin of the on-site energy generation shall be specified in the LCA report.
- 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.
    4. Electricity consumption mix on the market. This option shall not be used for electricity used in processes over which the manufacturer (EPD owner) has direct control[3].

  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.

  "The market" in the above hierarchy may correspond a national electricity market, if this can be justified.

  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

- Data for the use stage are usually based on scenarios, but specific data should be used when available and relevant.
- Data on the emissions from the use stage 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.
    2. Electricity consumption mix on the market.

  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.

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

"The market" in the above hierarchy may correspond a national electricity market, if this can be justified.

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

- 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 specific a customer or market, representing the geographical scope of the EPD.
  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: 1 000 km transport by lorry.
- 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.

4.7.4 DATA QUALITY DECLARATION

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

- For the specific data, all data shall represent the same time period and this time period shall be declared in the EPD (*e.g. if data period is between 1st January and 30th June of the EPD, on-site steam generation data period, on-site renewable electricity generation data period and raw material consumption data period shall be in between 1st January and 30th June. If this is not possible, any deviations shall be clearly presented in the EPD which data is not in the time period*.)
- The system model of secondary databases that used in the LCA study shall be declared in the EPD (*e.g. different system models, namely, "Allocation, cut-off by classification", "Allocation, cut-off, EN15804", "Allocation at the point of substitution" and "Substitution, consequential, long-term" as specified in Ecoinvent database*).
- 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 per input of purchased goods and/or purchased services.
- 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. Alternative regional 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 difference between the different sets of indicators, as they may appear to the reader to display duplicate information.

If the default list of environmental performance indicators and methods at the website 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 the required inventory 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 PRODUCTS FROM THE SAME COMPANY

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 included in the same EPD if none of the declared environmental performance indicators in upstream and core processes differ by more than 10% between any of the included products. The results

for the environmental performance indicators of one representative product shall be declared according to Section 5.4.5. The choice of representative product shall be justified in the EPD, using, where applicable, statistical parameters.

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/functional 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 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[4].

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[5] 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.

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

[5] 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.[6]
  - 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)
- Additional environmental information (see Section 5.4.6)
- Additional social and economic information (see Section 5.4.7)
- References (see Section 5.4.9)

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[7]

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

[7] 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.
- For construction product EPDs:

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 guides.

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: info@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[8] 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
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☐ EPD verification by individual verifier

[8] 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.

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[9]: ☐ Yes ☐ No

5.4.3 PRODUCT INFORMATION

The product information section of the EPD shall include:

- address and contact information to 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,
- 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),

[9] 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.

- Australian and New Zealand Standard Industrial Classification (ANZSIC), or
- Global Trade Item Number (GTIN).

- a description of the product,
- a description of the technical purpose of the product, including its application/intended use,
- 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,
- declared/functional unit,
- reference service life (RSL) and/or technical/actual lifespan, if relevant,
- declaration of the year(s) covered by the data used for the LCA calculation and other relevant reference years,
- 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 if the EPD system boundary is "cradle-to-gate", "cradle-to-gate with options" or "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 may declare the weight of one unit of product, as purchased, and shall 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 percentage of each material/substance in the fabric shall be declared, including a minimum of 99% of the materials/substances in one unit of product.

Weight of one unit of product is not mandatory to declare in the EPD but shall be available to the verifier in the LCA report.

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),[10] 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:

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

- 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 provenience 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:

- 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 type and function of the packaging shall be reported in the EPD but the weight of the packaging may be exempt to declare 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

5.4.5.1. Environmental impacts

The EPD shall declare the environmental impact indicators, per declared unit, per life-cycle stage and module (see Table 3) and in aggregated form, using the default impact categories, impact assessments methods and characterisation factors available at 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 difference between the different 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 indicators for resource use listed at www.environdec.com/indicators per declared unit, per life-cycle stage module (see Table 3) and in aggregated form.

5.4.5.3. Waste production and output flows

Waste generated along the whole life cycle production chains may be treated following the technical specifications described in the GPI. The EPD may declare the indicators for waste production and output flows as listed at www.environdec.com/indicators per declared unit, per life-cycle stage module (see Table 3) and in aggregated form.

5.4.6 ADDITIONAL ENVIRONMENTAL INFORMATION

An EPD may declare additional environmentally relevant information not derived from the LCA-based calculations, such as:

- 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,
- 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.

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
AP	Acidification potential
B2B	Business to business
C_2H_4	Ethene
CEN	European Committee for Standardization
CFC	Chlorofluorocarbons
CO_2	Carbon dioxide
CPC	Central product classification
CPV	Common procurement vocabulary
EN	European norms
EP	Eutrophication potential
EPD	Environmental product declaration
GPI	General Programme Instructions
GTIN	Global trade item number
GWP	Global warming potential
ISO	International Organization for Standardization
kg	kilogram
LCA	Life cycle assessment
LCI	Life cycle inventory
MJ	Megajoules
NACE/CPA	Classification of products by activity
ND	Not declared
NMVOC	Non-methane volatile organic compounds
PAF	Potentially affected fraction
PCR	Product Category Rules
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RSL	Reference service life
SI	The International System of Units
SO_2	Sulphur dioxide
UN	United Nations
UNSPSC	United Nations standard products and services code

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PCR 2019:03 Woven fabrics of silk and silk-like fibers (1.01) – The International EPD® System

PCR 2020:04 Textile manufacturing services, non-apparel fabrics made of natural fibres other than cotton (1.0) – The International EPD® System

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8 VERSION HISTORY OF PCR

VERSION 1.0, 2022-08-23

Original version of the PCR.

VERSION 1.0.1, 2022-08-24

PCR updated with a cover image.

VERSION 1.0.2, 2025-01-24

PCR updated with a new PCR Moderator.

VERSION 1.0.3, 2025-04-11

Updated with a new affiliation and contact information of the PCR Moderator.

FABRICS
PRODUCT CATEGORY CLASSIFICATION: UN CPC 265, 266, 267, 268, 2791, 27911, 27912, 27921, 27922, 27994, 27996, 27997, 281, 3625