PRODUCT CATEGORY RULES (PCR)
DATE 2025-05-27

TEXTILE MANUFACTURING SERVICES, NON-APPAREL FABRICS MADE OF NATURAL FIBRES OTHER THAN COTTON

PRODUCT CATEGORY CLASSIFICATION: UN CPC 8821; UN CPC 265, UN CPC 281, UN CPC 27922

PCR 2020:04
VERSION 1.0.1

VALID UNTIL: 2025-10-01

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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. Environmental Product Declarations (EPD) are voluntary documents for a company or organisation to present transparent information about the life cycle environmental impact for their goods or services.

The rules for the overall administration and operation of the programme are the General Programme Instructions, publicly available at www.environdec.com.. A PCR complements the General Programme Instructions and the 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.

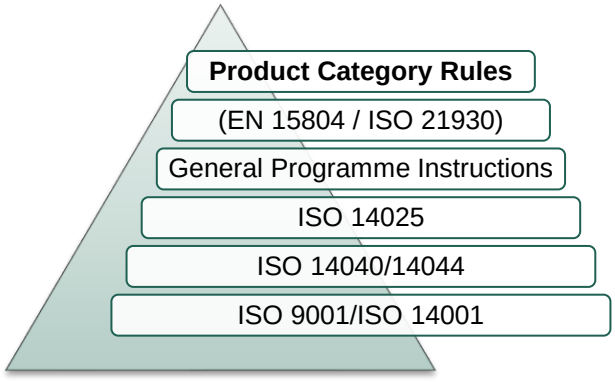

Figure 1 Illustration PCR in relation to the hierarchy of standards and other documents.

Within the present PCR, the following terminology is adopted:

- The term “shall” is used to indicate what is obligatory.
- The term “should” is used to indicate a recommendation, rather than a requirement.
- The term “may” or “can” is used to indicate an option that is permissible

For the definition of 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 via www.environdec.com. Stakeholder feedback on PCRs is very much encouraged. Any comments on this PCR document may be given via the PCR Forum at www.environdec.com or sent directly to the PCR moderator during its development or during the period of validity.

Any references to this document should 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 when necessary, and 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 EPD, Environmental Product Declarations.

2 GENERAL INFORMATION

2.1 ADMINISTRATIVE INFORMATION

Name:	Textile manufacturing services, non-apparel fabrics made of natural fibres other than cotton
Registration number:	2020:04, Version 1.0.1
Programme:	The International EPD® System
Programme operator	EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden. Website: www.environdec.com E-mail: info@environdec.com
PCR moderator:	Lorena Pereda, CTME, lpereda@ctme.es
PCR Committee:	CTME & GA Ingeniería, S.A
Date of publication and last revision	2025-05-27 (Version 1.0.1) A version history is available in Section 8
Valid until:	2025-10-01
Schedule for renewal:	A PCR is valid for a pre-determined period of time 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 document and renewing its validity. A PCR document may be revised during its period of validity provided significant and well-justified proposals for changes or amendments are presented. See www.environdec.com for up-to-date information and the latest version.
Standards conformance:	▪ General Programme Instruction of the International EPD® System, v. 3.01, based on ISO 14025 and ISO 14040/14044. ▪ PCR Basic Module, CPC Division 88 Manufacturing Services on physical inputs owned by others, v. 3.02 dated 2019-07-30 (CPC 88). ▪ PCR Basic Module, CPC Division 26 Yarn and thread, woven and tufted textile fabrics, v. 3.02, dated 2019-07-26 (CPC 26). ▪ PCR Basic Module, CPC Division 27 Textile articles other than apparel, v 3.02, dated 2019-07-26 (CPC 27). ▪ PCR Basic Module for CPC Division 28 Knitted or crocheted fabrics; wearing apparel, v 3.02, dated 2019-07-26 (CPC 28).
PCR language:	This PCR was developed and is available in English, as is mandated by the General Programme Instructions. The English version takes precedence in case of any discrepancies. Until date of publication, no translated versions are available.

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 textile manufacturing services of fabrics made of natural fibres other than cotton, for other uses than apparel, corresponding to a subset of UN CPC 8821 (Textile manufacturing services), as well as fabrics made of natural fibres other than cotton, for other uses than apparel, corresponding to UN CPC 265 (Woven fabrics of natural fibres other than cotton), a subset of UN CPC 281 (Knitted or crocheted fabrics), and a subset of UN CPC 27922 (Nonwovens).

The scope of this PCR is based on the market situation, industry structure (which can offer the good or only the manufacture service) and potential applications for textiles made of natural fibres (other than cotton) for other uses than apparel, such as furniture, upholstery, train, automotive, etc.

A subset of the following UN CPCs are covered by this PCR based. Services are characterized as outsourced portions of manufacturing process or a complete outsourced manufacturing process

8821 Textile manufacturing services

88212 Textile weaving services

88213 Textile finishing services

88214 Knitted and crocheted fabric manufacturing services

88215 Made-up textile article manufacturing services

88216 Carpet and rug manufacturing services

88219 Other textile manufacturing services n.e.c.

265 Woven fabrics of natural fibres other than cotton

27922 Nonwovens

281 Knitted or crocheted fabrics

This PCR is intended to cover manufacturing of (in the form of services or products) woven, knitted, crocheted or nonwoven fabrics from natural fibres other than cotton (only or mixed with others, being natural fibres majority) for other uses than apparel, for example, agriculture and fisheries; carpeting, furnishing, upholstery, window shades, table covers; applications for automobiles, ships, trains; etc. In the case of manufacturing services, the output is not owned by the company providing this service.

The product category (UN CPC) covered by the EPD shall be declared https://unstats.un.org/unsd/classifications.

In order to avoid overlaps, if, in the International EPD® System, specific PCRs exist for products (described above) covered by this PCR, the specific PCR shall prevail over this PCR. For example, the development of a general PCR on fabrics will be developed in the International EPD® System – when this has been published, it will replace the part of the scope of the present PCR which concerns the good (i.e., woven, knitted, crocheted or nonwoven fabrics from natural fibres other than cotton, for other uses than apparel) and the PCR will thereafter be limited to the manufacturing service of producing the good.

2.2.2 GEOGRAPHICAL REGION

This PCR is valid for a global scope.

2.2.3 EPD® VALIDITY

An EPD based on this PCR shall be valid from its registration and publication at www.environdec.com and for a five 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 indicators listed in Section 5.4.5.1,
- errors in the declared information, or
- significant changes to the declared product information, content declaration, or additional environmental information.

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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

3.1 PCR REVIEW

3.1.1 VERSION 1.0

PCR review panel:	The Technical Committee of the International EPD® System. A full list of members available on www.environdec.com/TC. The PCR 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 moderator or PCR committee, and were excused from the review.
Chair of the PCR review:	Paola Borla
Review dates:	2020-06-04 until 2020-09-03

3.2 OPEN CONSULTATION

3.2.1 VERSION 1.0

This PCR was available for open consultation from 2020-02-11 until 2020-04-07, during which any stakeholder was able to provide comments by posting on the PCR forum on www.environdec.com or by contacting the PCR moderator, *Lorena Pereda (lpereda@ctme.es)* from CTME, Fundación Centro Tecnológico de Miranda de Ebro.

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. About 40% were sector expert and the rest (60%) were LCA and EPD experts. No stakeholders provided comments during the open consultation.

3.3 EXISTING PCRS FOR THE PRODUCT CATEGORY

As part of the development of this PCR, the existing PCRs (Table 1) were considered in order to avoid overlaps in scope. The following ISO 14025 programmes were checked for relevant PCRs.

EPD PROGRAMS	PCR REGISTRY	WEB LINK
The International EPD® System	**Man-made textile fibres for textile fabrics CPC 262.* *Textile yarn and thread of natural fibres, man-made filaments or staple fibres CPC: 263, 264.* *Woven, knitted or crocheted fabrics of natural fibres, except silk , for apparel CPC: 265 (except 2651), 266, 281.* *Woven fabrics of silk and silk-like fibres CPC: 2651.* *Woven, knitted or crocheted fabrics (of synthetic fibres) CPC: 267.* *Cleaning cloths. CPC: 2719.* *Nonwovens for clothing, protective clothing and upholstery. CPC: 27922.* *Nonwoven wipes. CPC: 27922.* *Trousers, shorts and slacks and similar garments; T-shirts, tops, singlets and other vests; Jackets, coats and other similar outdoor garments; Sweaters, jerseys, pullovers, cardigans, fleeces and similar garments CPC 282.* *Leather footwear CPC: 2933.* *Finished bovine leather CPC: 2912 (updating).*	*http://environdec.com/PCR/Pcr-Search/?search_type=simple&Category=6193*

EPD PROGRAMS	PCR REGISTRY	WEB LINK
AENOR GlobalEPD	*No available PCR on this Product Category.*	----
Norwegian EPD Foundation	*NPCR 006 Upholstery textiles. Valid until: 17.11.2009. Outdated*	*https://www.epd-norge.no/getfile.php/134791-1432199511/PCRer/NPCR006%202006%20Upholstery%20textiles.pdf*
Institut Bauen und Umwelt e.V. (IBU)	*Floor covering for building v 1.6 (2017-11-30): textile floor coverings, excluding loose-laid mats and rugs.*	*http://ibu-epd.com/en/epd-program/product-category-rules-pcr/*
PEP ecopassport ®	*No available PCR on this Product Category.*	----
Japan Environmental Management Association for Industry (JEMAI)	*No available PCR on this Product Category.*	----
Korea Environmental Industry & Technology Institute (KEITI)	*Nonwoven Fabrics (2005).*	*http://www.epd.or.kr/edp/english/process/process_list.asp*
UL Environment (UL)	*Technical Textiles (2014-2016).*	*https://industries.ul.com/environment/transparency/product-category-rules-pcrs#uledev*
ASTM International EPD Program	*No available PCR on this Product Category.*	----
SM Transparency Report Program	*No available PCR on this Product Category.*	----
ICC Evaluation Service Environmental Product Declaration Program	*No available PCR on this Product Category.*	----
Hong Kong Green Label (HKGLS)	*Textile Products Using Recycled Materials v 2 (2011).*	*http://www.greencouncil.org/en/page.php?sub_id=5#tab-3*
Product Environmental Footprint, Commission European (PEF)	*T-shirt Pilot for Product Environmental Footprint (2016).*	*http://ec.europa.eu/environment/eussd/smgp/ef_pilots.htm#pef*

NOTE: * under development on the date of development of this PCR

Table 1 EPD programs reviewed

These PCR documents can potentially be connected, but have no overlap in scope. In addition, no relevant PCRs were found for textile manufacturing services.

3.4 REASONING FOR DEVELOPMENT OF PCR

The fabrics are used in a variety of industrial applications, in addition to the clothing sector. Fabrics are important in sectors such as agriculture and fishing; carpet, decoration, upholstery; applications for cars, boats, trains; construction, etc. that use the textile sector as a provider of manufacturing services or as a supply of manufacturing products, depending on the industrial structure.

Innovation in these sectors is leading to expose the environmental improvement of their products with an objective instrument, verified by a third party, such as EPD under the terms of the International EPD® System due to its international impact, response to the increasing environmental pressure along the value chain. So, the motivation to develop this PCR is based on the harmonization of methodological rules for the LCA study regarding textile manufacturing services (as well as fabrics) and the declaration of this performance with an EPD. The intended use of the EPDs based on this PCR is mainly B2B.

3.5 UNDERLYING STUDIES

The main underlying LCA studies and other studies used to develop the PCR that support the choice of system boundaries, allocation methods, impact categories, etc., in the PCR are the following:

- Pereda, L., (2016). Análisis de Ciclo de Vida “Cradle to Gate” para el tejido a partir de fibras vegetales.

- Beton, A., Dias, D., Farrant, L., Gibon, T., Le Guern, Y., Desaxce, M., Perwueltz, A. & Boufateh, I., (2014). Environmental Improvement Potential of Textiles (IMPRO Textiles). European Commision JRC-IPTS. doi: 10.2791/52624.
- Schenck, R., (2013). Sustainable Apparel Coalition Product Category Rule Guidance 2013. Institute for Environmental research and Education.
- Shen, L., Worrell, E., & Patel, M. K., (2010). Environmental impact assessment of man-made cellulose fibres. Resources, Conservation and Recycling, 55, 260–274. doi:10.1016/j. resconrec.2010.10.001.
- Shen, L.; Patel, M. K., (2010). Life cycle assessment of man-made cellulose fibres. Lenzinger Berichte 88, pp. 1-59.
- Nieminen-Kalliala, E. (2003). Environmental indicators of textile products for ISO (Type III) environmental product declaration. AUTEX Research Journal, 3 (4):206-218.

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 (one square meter) of fabric manufactured. The grammage shall be declared, expressed in grams per square meter (g/m^2).

The declared unit shall be stated in the EPD. The environmental impact shall be given per declared unit. A description of the function of the product system should be included in the EPD®, if relevant.

4.2 REFERENCE SERVICE LIFE (RSL)

Not applicable for this product category.

4.3 SYSTEM BOUNDARY

The International EPD® System uses an approach where all attributional processes from “cradle to grave” should be included using the principle of “limited loss of information at the final product”. This is especially important in the case of business-to-consumer communication.

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

4.3.1 LIFE CYCLE STAGES

For the purpose of different data quality rules and for the presentation of results, the life cycle of products is divided into three different 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 life-cycle stages above shall be reported separately. The scope of this PCR is cradle to gate, so downstream process is not applicable.

Boundaries to nature are defined as flows of material and energy resources from nature into the system. Emissions to air, water and soil cross the system boundary when they are emitted from or leaving the product system.

4.3.1.1. Upstream Processes

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

- Growing extraction or synthesis of the raw materials
- Production of seeds, cuttings or plants for the cultivation.
- Field preparation for the cultivation.
- Production of fertilizers, pest control used in the cultivation.
- Operations of cultivation (irrigation, weed central, pest control, fertilization…).
- Husbandry activities in case of animal fibres, including feed production and manure management.
- Production of natural fibres.
- Treatment of fibres (opening, bending, bleaching…).

- Production of pigments, additives and other chemicals used in the upstream processes.
- Production of electricity and fuels used in the upstream module.
- Production of auxiliary products used such as detergents for cleaning, etc. used in the upstream processes.
- Manufacturing of primary and secondary packaging used in the upstream processes.

4.3.1.2. Core Processes

- External transportation to the core processes.
- Spinning.
- Yarn preparation.
- Rebeaming.
- Pre-treatment and warping.
- Weaving, knitting, crocheting.
- Nonwoven (Spun bond, melt blown, water jet, needle punched…)
- Bleaching, dyeing, sizing, printing.
- Ennoblement and finish.
- Quality control.
- Rolling/winding and packaging.
- Waste treatment of waste generated during manufacturing.
- Production of electricity and fuels used in the core module.
- Production of pigments, additives and other chemicals used in the core processes.
- Production of auxiliary products used such as detergents for cleaning, etc. used in the core processes.

4.3.1.3. Downstream Processes

- Transportation from preparation to an average retailer/distribution platform (for goods).

Use and end-of-life phases, shall not be included (Figure 2). The system product covered by this PCR is an intermediate product with a wide variety of applications and final sectors, which are generally unknown by the manufacturer.

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 1% cut-off rule. However, the production of the raw materials used for production of all product parts shall be included. A minimum of 99% of the total weight of the declared product including packaging shall be included.

The technical system shall not include:

- Manufacturing of production equipment, buildings and other capital goods.
- Personnel activities as well as the contribution of business travel.

4.3.2 OTHER BOUNDARY SETTING

4.3.2.1. Boundary towards nature

Boundaries to nature are defined as flows of material and energy resources from nature into the system. Emissions to air, water and soil cross the system boundary when they are emitted from or leaving the product system.

4.3.2.2. Boundaries in the life cycle

See Section 4.3.1. The EPD may present the information divided into additional sub-divisions.

4.3.2.3. Boundaries towards other technical 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.

Further explanations are provided in Section A.6.2. in the General Programme Instructions of the International EPD® System.

4.4 SYSTEM DIAGRAM

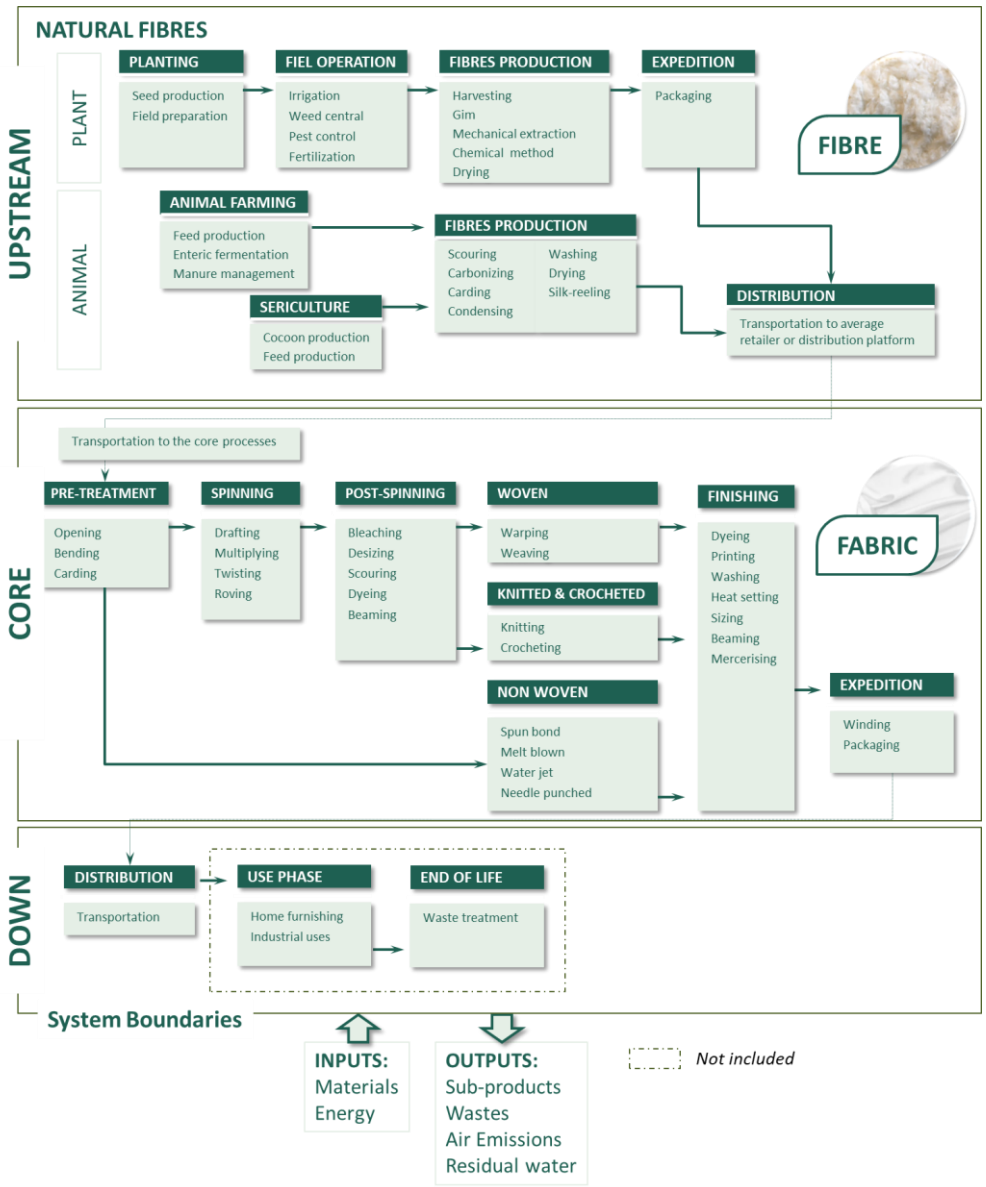

Figure 2 System diagram illustrating the processes included in the product system.

4.5 CUT-OFF RULES

Data for elementary flows to and from the product system contributing to a minimum of 99% of the declared environmental impacts shall be included (not including processes that are explicitly outside the system boundary as described in Section 4.3).

The check for cut-off rules in a satisfactory way is through the combination of expert judgment based on experience of similar product systems and sensitivity analysis in which it is possible to understand how the un-investigated input or output could affect the final results.

4.6 ALLOCATION RULES

4.6.1 CO-PRODUCT ALLOCATION

The following step-wise procedure shall be applied for multifunctional products and multiproduct processes:

1. Allocation shall be avoided, if possible, by dividing the unit processes to be allocated into different sub-processes and collecting the input and output data related to these sub-processes. The method of avoiding allocation by expanding the system boundary is not applicable.
2. If allocation cannot be avoided, shall be based on physical properties (e.g. mass, volume) when the difference in revenue from the co-products is low. An allocation can now be performed for each sub-system where the inputs and outputs of the system shall be partitioned between its different products or functions in a way that reflects the underlying physical relationships between them, i.e. they should reflect the way in which the inputs and outputs are changed by quantitative changes in the products or functions delivered by the system.
3. In all other cases, including joint co-production processes, where no relevant underlying physical relationships between the products and co-products can be identified, the inventory of the remaining parts of process should be allocated between the products and co-products in a way that reflects the economic value of the co-products when they leave the unit process. The economic value of the co-products may be assessed by considering the proportion of revenue generated by each co- product. The revenue is the price multiplied by the output. For both price and output, representative values should be identified (e.g. rolling annual averages).

Consistent allocation procedures shall be uniformly applied to similar inputs and outputs of the system under consideration. Nevertheless, a conservative approach may be used for the assessment of the primary product by not allocating any environmental flows to a co-product.

4.6.2 REUSE, RECYCLING, AND RECOVERY

In the framework of the International EPD® System, the methodological choices for allocation for reuse, recycling and recovery have been set according to the polluter pays principle. This means that the generator of the waste shall carry the full environmental impact until the point in the product's life cycle at which the waste is transported to a scrapyard or the gate of a waste processing plant (collection site). The subsequent user of the waste shall carry the environmental impact from the processing and refinement of the waste but not the environmental impact caused in the "earlier" life cycles.

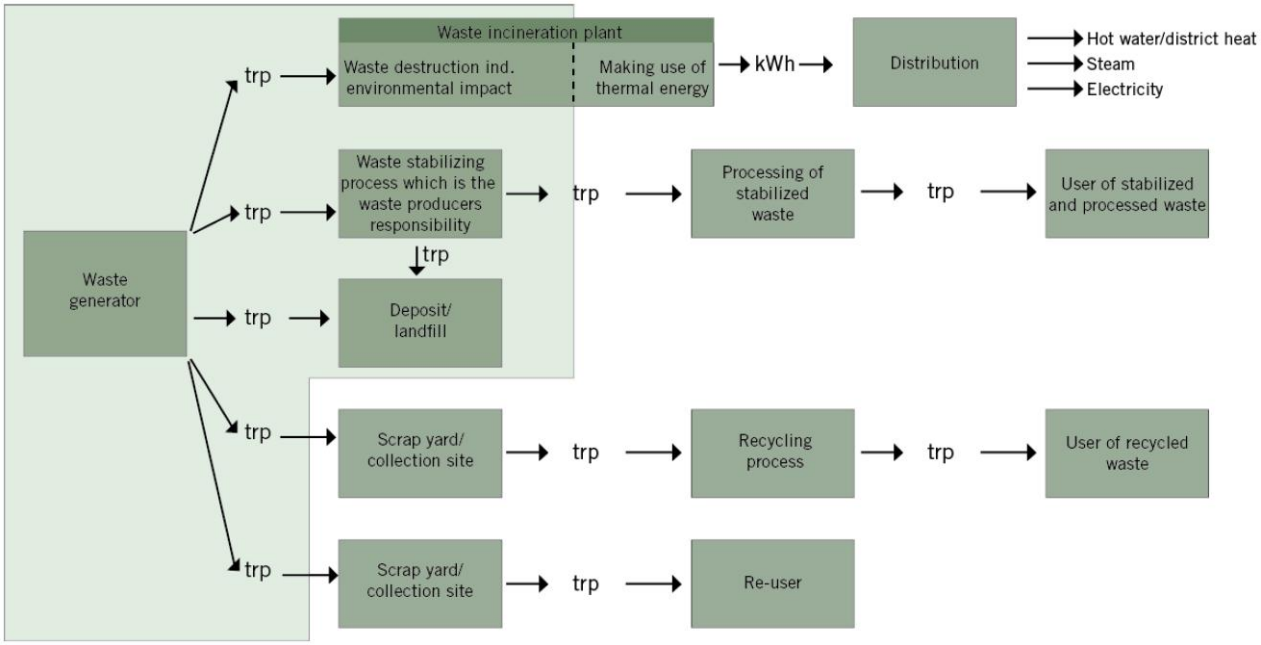

Figure 3 The "PP allocation method" illustrated for the various types of waste treatment options included in different process stages. The area in green indicates the environmental impact that shall be carried by the waste generator.

See the General Programme Instructions for further information and examples.

4.7 DATA QUALITY REQUIREMENTS

An LCA calculation requires two different kinds of information:

- data related to the **environmental aspects** of the considered system (such materials or energy flows that enter the production system). These data usually come from the company that is performing the LCA calculation.
- data related to the **life cycle impacts** of the material or energy flows that enter the production system. These data usually come from databases.

Data on environmental aspects shall be as specific as possible and shall be representative of the studied process.

Data on the life cycle of materials or energy inputs are classified into three categories – specific data, selected generic data, and proxy data, 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, and data from other parts of the life cycle traced to the specific product system under study, e.g. materials or electricity provided by a contracted supplier that is able to provide data for the actual delivered services, transportation that takes place based on actual fuel consumption, and related emissions, etc.,
- **generic data** (sometimes referred to as "secondary data"), divided into**:**
  - **selected generic data** – data from commonly available data sources (e.g. commercial databases and free databases) that fulfil prescribed data quality characteristics for precision, completeness, and,
  - **proxy data** – data from commonly available data sources (e.g. commercial databases and free databases) that do not fulfil all of the data quality characteristics of "selected generic data".

As a general rule, specific data shall always be used, if available, after performing a data quality assessment. It is mandatory to use specific data for the core processes as defined above. For the upstream processes, downstream processes, and infrastructure, generic data may also be used if specific data are not available.

Any data used should preferably represent average values for a specific reference year. However, the way these data are generated could vary, e.g. over time, and in such cases they should have the form of a representative annual average value for a specified reference period. Such deviations should be declared.

4.7.1 RULES FOR USING GENERIC DATA

The attributional LCA approach in the International EPD® System forms the basic prerequisites for selecting generic data. To allow the classification of generic data as “selected generic data”, they shall fulfil selected prescribed characteristics for precision, completeness, and representativeness (temporal, geographical, and technological), such as:

- the reference year must be as current as possible and preferably assessed to be representative for at least the validity period of the EPD, preferably being representative for at least 5 years,
- the cut-off criteria to be met on the level of the modelled product system are the qualitative coverage of at least 99% of energy, mass, and overall environmental relevance of the flows,
- completeness in which the inventory data set should, in principle, cover all elementary flows that contribute to a relevant degree of the impact categories, and
- the representativeness of the resulting inventory in the given temporal, technological, and geographical reference should, as a general principle, be better than ±5% of the environmental impact of fully representative data.

Section 4.8 provides a list of recommended databases/data sets to be used for generic data.

If selected generic data that meets the requirements of the International EPD® System are not available as the necessary input data, proxy data may be used and documented. The environmental impacts associated with proxy data shall not exceed 10% of the overall environmental impact of the product system.

The LCA (on which the EPD is based) shall include a data quality declaration to demonstrate the share of specific data, selected generic data and proxy data for the environmental impacts.

4.8 RECOMMENDED DATABASES FOR GENERIC DATA

Recommended databases for generic data:

- Agri-footprint LCA database,
- Ecoinvent,
- GaBi databases,
- European Life Cycle Database.

Please note that this listing does not imply that other data that fulfil the data quality requirements may not be used and that data quality assessment shall also be performed for the data sets in the recommended database.

The LCA (on which the EPD is based) may include a reference to the database(s) used.

4.9 IMPACT CATEGORIES AND IMPACT ASSESSMENT

The EPD shall declare the default impact categories as described in the General Programme Instructions. The characterisation models and factors to use for the default impact categories are available on www.environdec.com/impact-categories, which are updated on a regular basis based on the latest developments in LCA methodology and ensuring the market stability of EPDs. The source and version of the characterisation models and the factors used shall be reported in the EPD. Alternative regional life cycle impact assessment methods and characterisation factors are allowed to 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.

4.10 ADDITIONAL ENVIRONMENTAL INFORMATION

The EPD may contain other environmental indicators to include for the products covered in the EPD from the inventory or impact assessment. Such indicators should be based on international standards or similar methodologies developed in a transparent procedure. References to the chosen indictors and methodologies shall be reported. Further, the EPD may contain additional information not derived from the LCA-based calculations. In general, this part could describe additional environmental information that can involve different issues as:

- Description of actions to improve the environmental benefits.

- Instructions for a proper maintenance for improve its durability.
- Information for suitable procedures for recycling.
- Existence of a quality or environmental management system.
- Any activity related to supply chain management, social responsibility[2]
- Information for more details about environmental issues that interested parties may find

4.11 OTHER CALCULATION RULES AND SCENARIOS

4.11.1 UPSTREAM PROCESSES

The following requirements apply to the 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 that supply main parts, packaging, or main auxiliaries should be requested from the contractor as specific data, as well as infrastructure, where relevant.
- The 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 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.
- For the electricity used in the upstream processes, electricity production impacts shall be accounted for in this priority when specific data are used in the upstream processes:

    1. Specific electricity mix as generated, or purchased, from an electricity supplier, demonstrated by a Guarantee of Origin (or similar, where reliability, traceability, and the avoidance of double-counting are ensured) as provided by the electricity supplier. If no specific mix is purchased, the residual electricity mix from the electricity supplier shall be used.[3]
    2. National residual electricity mix or residual electricity mix on the market
    3. National electricity production mix or electricity mix on the market.

    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.

4.11.2 CORE PROCESSES

The following requirements apply to the core processes:

- 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 the electricity used in the core processes, electricity production impacts shall be accounted for in this priority:

[2] For more information about social responsibility, see ISO 26000:2010 Guidance on social responsibility.

[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 production mix of the electricity supplier.

1. Specific electricity mix as generated, or purchased, from an electricity supplier, demonstrated by a Guarantee of Origin (or similar, where reliability, traceability, and the avoidance of double-counting are ensured) as provided by the electricity supplier. If no specific mix is purchased, the residual electricity mix from the electricity supplier shall be used.[4]
2. National residual electricity mix or residual electricity mix on the market
3. National electricity production mix or electricity mix on the market.

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

- 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.
- Waste treatment processes of manufacturing waste should be based on specific data, if available.

[4] 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 of the electricity supplier.

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 via www.environdec.com

As a general rule the EPD content:

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

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

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 subject to the same verification procedure.

5.2 UNITS AND QUANTITIES

The following requirements apply for units and quantities:

- The International System of Units (SI units) shall be used, 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.
- Three significant figures[5] should be adopted for all results, The number of significant digits shall be appropriate and consistent.
- 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.
- The result tables shall:
  - Only contain values or the letters “INA” (Indicator Not Assessed). It is not possible to specify INA for mandatory indicators. INA 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 “INA”).

[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 $1.2*10^{-2}$.

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

- 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 should 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 5.4.4)
- Environmental performance (see Section 5.4.5)
- Additional environmental information (see Section 5.4.5.3)
- References (see Section 5.4.9)

The following information shall be included, when applicable:

- Information related to Sector EPDs (see Section 5.4.7)
- 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],
- *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,

[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.

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 mandatory statement from ISO 14025:

  "EPDs within the same product category but from different programmes may not be comparable."

- A statement that the EPD owner has the sole ownership, liability and responsibility of the EPD
- Information about verification[8] and reference PCR in a table with the following format and contents:

Product category rules (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>*
Independent third-party verification of the declaration and data, according to ISO 14025:2006: ☐ EPD process certification ☐ EPD verification
Third party verifier: *<name, organisation and signature of the third party verifier>* *In case of certification bodies:* Accredited by: *<name of the accreditation body and accreditation number, if applicable>.* *In case of individual verifiers:* Approved by: The International EPD® System Technical Committee, supported by the Secretariat
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ 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/service 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),

[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.

- Classification of Products by Activity (NACE/CPA) or
- Australian and New Zealand Standard Industrial Classification (ANZSIC),

- Description of the product, its application/intended use and technical functions. Product-related properties (Table 2) must be made for quality assurance appropriate to the functional unit.

PROPERTIES	METHODS*	PROPERTIES	METHODS*
Weight	EN 12127 / ISO 3801	Resistance to water stain/water	ISO 23232
Thickness	ISO 5084	Colour resistance to light Xenotest	ISO 105- B02
Smell	ISO 12219-7	Thermal comfort	ISO 11092
Fogging	ISO 6452	Color fastness to rubbing	ISO 105-X12
Volatility	ISO 12219	Resistance to microorganisms	ISO 22612 / ISO 846
Combustibility	ISO 6941	Antibacterial behaviour	ISO 20743 / ISO 21326
Resistance Martindale	ISO 12947	Antistatic behaviour	EN 1149-5 / ISO 18080

** Preferable method, a similar recognised test may be used.*

Table 2 List of properties

- 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 unit,
- Reference service life (RSL), if applicable,
- 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,
- 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,
- Additional information about the underlying LCA-based information, such as assumptions, cut-off rules, data quality and allocation.

5.4.4 CONTENT DECLARATION

The content declaration shall have a list of materials and chemical substances including information on their environmental and hazardous properties. At least, volatiles content shall be declared.

Information about chemical substances, used within system boundaries, subject to REACH[9], shall be declared in the EPD and in particular:

- Chemical substances, included in ANNEX XIV.
- Chemical substances, identified as "a substance of very high concern (SVHC)

[9] 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)

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 postconsumer) shall be presented in the EPD as part of the content declaration.

To avoid any misunderstanding about which material may be considered “recycled material”, the guidance given in ISO 14021 shall be taken into account. 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.

SOURCE	WEIGHT (%)
pre-consumer	
post-consumer	

Table 3 Recycled materials.

5.4.4.2. Information about composition

The proportion of natural (plant and animal) shall be declared.

SOURCE	WEIGHT (%)
Natural vegetable fibres	
Natural animal fibres	

Table 4 Example of list of composition.

It is not necessary declare the natural fibres with their specific names (e.g. viscose, modal, wool, silk, sisal, etc.). They may be declared as ’vegetable fibres’ or ’animal fibres’ in the EPD. However, their specific names shall be available to the verifier in the LCA report.

5.4.5 ENVIRONMENTAL PERFORMANCE

5.4.5.1. Environmental impacts

The EPD shall declare the environmental impact indicators, per declared unit and per life cycle stage, using the default impact categories, characterisation models and factors available on www.environdec.com/impact-categories. The source and version of the characterisation models and the factors used shall be reported in the EPD. Alternative regional life cycle impact assessment methods and characterisation factors are allowed to 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 indicators for resource use based on the life cycle inventory (LCI) listed in Table 5 shall be declared per functional unit or declared unit, and per life cycle stage.

PARAMETER		UNIT	UPSTREAM	CORE	DOWNSTREAM	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value				
	Used as raw materials	MJ, net calorific value				
	TOTAL	MJ, net calorific value				
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value				
	Used as raw materials	MJ, net calorific value				

PARAMETER		UNIT	UPSTREAM	CORE	DOWNSTREAM	TOTAL
	TOTAL	MJ, net calorific value				
Secondary material		kg				
Renewable secondary fuels		MJ, net calorific value				
Non-renewable secondary fuels		MJ, net calorific value				
Net use of fresh water		m^3				

Table 5 Indicators describing use of primary and secondary resources.

Notes:

- In order to identify the primary energy used as an energy carrier (and not used as raw materials), the parameter may be calculated as the difference between the total input of primary energy and the input of energy resources used as raw materials.
- Energy content of biomass used for feed or food purposes shall not be considered.
- The net use of fresh water does not constitute a “water footprint” as potential environmental impacts due to the water use in different geographical locations is not captured. For this indicator:
  - Evaporation, transpiration, product integration, release into different drainage basins or the sea, displacement of water from one water resource type to another water resource type within a drainage basin (e.g. from groundwater to surface water) is included.
  - In-stream water use is not included.
  - For water used in closed loop processes (such as cooling system) and in power generation only the net water consumption (such as reintegration of water losses) should be considered.
  - Seawater shall not be included[10]
  - Tap water or treated water (e.g. from a water treatment plant), or wastewater that is not directly released in the environment (e.g. sent to a wastewater treatment plant) are not elementary water flows, but intermediate flows from a process within the technosphere.
  - Additional transparency in terms of geographical location, type of water resource (e.g. groundwater, surface water), water quality and temporal aspects may be included as additional information.

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 Genera. When the amount of waste or the output flows is from the life cycle inventory (LCI) are declared, the indicators in Table 6 and Table 7 shall be reported per functional unit or declared unit, and per life cycle stage.

PARAMETER	UNIT	UPSTREAM	CORE	DOWNSTREAM	TOTAL
Hazardous waste disposed	kg				
Non-hazardous waste disposed	kg				
Radioactive waste disposed	kg				

[10] It may be relevant to include seawater if it is used to obtain energy from it, or it is the only source of water in a definite site. This may be displayed separately, e.g. as “seawater for desalinization”.

Table 6 Indicators describing waste production.

PARAMETER	UNIT	UPSTREAM	CORE	DOWNSTREAM	TOTAL
Components for reuse	kg				
Material for recycling	kg				
Materials for energy recovery	kg				
Exported energy, electricity	MJ				
Exported energy, thermal	MJ				

Table 7 Indicators describing output flows.

Notes:

- The parameters are calculated on the gross amounts leaving the system boundary of the product system in the LCI. If e.g. there is no gross amount of “exported energy, electricity” leaving the system boundary, this indicator is set to zero,
- The parameter “Materials for energy recovery” does not include materials for waste incineration. Waste incineration is a method of waste processing, when R1<60% (European Guideline on R1 energy interpretation), and is allocated within the system boundary.
- In case there are never any flows of these types leaving the system boundary for a product category, the indicators may be removed by the PCR.

5.4.6 ADDITIONAL INFORMATION

See Section 4.10

5.4.7 INFORMATION RELATED TO SECTOR EPDS

For sector EPDs, the following information shall also be included:

- 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.

5.4.8 DIFFERENCES VERSUS PREVIOUS VERSIONS

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

- a description of the differences versus previously published versions, e.g. a description of the percentage change in results and the main reason for the change;
- a revision date on the cover page

5.4.9 REFERENCES

A reference section shall include a list of references, including the General Programme Instructions (including version number), standards and PCR (registration number, name and version).

5.4.10 EXECUTIVE SUMMARY IN ENGLISH

For EPDs published in another language than English, an executive summary in English shall be included.

The executive summary should contain relevant summarised information related to the programme, product, environmental performance, additional information, information related to sector EPDs, references and differences versus previous versions.

TEXTILE MANUFACTURING SERVICES, NON-APPAREL FABRICS MADE OF NATURAL FIBRES OTHER THAN COTTON.

PRODUCT CATEGORY CLASSIFICATION: UN CPC 8821; UN CPC 265, UN CPC 281, UN CPC 27922

6 GLOSSARY

AP	Acidification potential
B2B	Business to business
C_2H_4	Ethene
CEN	European Committee for Standardization
CO_2	Carbon dioxide
CPC	Central product classification
EN	European norms
EP	Eutrophication potential
EPD	Environmental product declaration
GPI	General programme instructions
GWP	Global warming potential
ISO	International Organization for Standardization
kg	kilogram
LCA	Life cycle assessment
LCI	Life cycle inventory
MJ	Megajoules
PCR	Product Category Rules
PO_4^3	Phosphate
POCP	Formation potential of tropospheric ozone
RSL	Reference service life
Sb	Antimony
SI	The International System of Units
SO_2	Sulphur dioxide
trp	Transport
UN	United Nations

7 REFERENCES

CEN (2013), EN 15804:2012+A1:2013, Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products.

EPD International (2017) General Programme Instructions for the International EPD® System. Version 3.0, dated 2017-12-11. www.environdec.com.

Guidance for Product Category Rule Development (2013), Ingwersen, W., Subramanian, V., editors. Product Category Rule Guidance Development Initiative. Version 1.0. http://www.pcrguidance.org.

ISO (2000), ISO 14020:2000, Environmental labels and declarations – General principles.

ISO (2006a), ISO 14025:2006, Environmental labels and declarations – Type III environmental declarations – Principles and procedures.

ISO (2006b), ISO 14040:2006, Environmental management – Life cycle assessment – Principles and framework.

ISO (2006c), ISO 14044: 2006, Environmental management – Life cycle assessment – Requirements and guidelines.

ISO (2013), ISO/TS 14067:2013, Greenhouse gases – Carbon footprint of products – Requirements and guidelines for quantification and communication.

ISO (2014), ISO 14046:2014, Environmental management – Water footprint – Principles, requirements and guidelines.

Pereda, L., (2016). Análisis de Ciclo de Vida “Cradle to Gate” para el tejido de bambú.

Beton, A., Dias, D., Farrant, L., Gibon, T., Le Guern, Y., Desaxce, M., Perwueltz, A. & Boufateh, I., (2014). Environmental Improvement Potential of Textiles (IMPRO Textiles). European Commision JRC-IPTS. doi: 10.2791/52624.

Schenck, R., (2013). Sustainable Apparel Coalition Product Category Rule Guidance 2013. Institute for Environmental research and Education.

Vogtländer, J.G., (2011). Life Cycle Assessment and Carbon Sequestration. Bamboo products of MOSO International. Delft University of Technology.

Shen, L., Worrell, E., & Patel, M. K., (2010). Environmental impact assessment of man-made cellulose fibres. Resources, Conservation and Recycling, 55, 260–274. doi:10.1016/j. resconrec.2010.10.001.

Shen, L.; Patel, M. K., (2010). Life cycle assessment of man-made cellulose fibres. Lenzinger Berichte 88, pp. 1-59.

Vogtländer, J., Van Der Lugt, P., Brezet, H., (2010). The sustainability of bamboo products for local and Western European applications. LCAs and land-use. Journal of Cleaner Production, vol. 18, no 13, pp. 1260-1269.

Nieminen-Kalliala, E. (2003). Environmental indicators of textile products for ISO (Type III) environmental product declaration. AUTEX Research Journal, 3 (4):206-218.

The International EPD® System. PCR 2008:05 V 2.11. Woven, knitted or crocheted fabrics. UN CPC: 267, 281

The International EPD® System. PCR 2011:06 V 3.01 Nonwovens for clothing, protective clothing and upholstery. UN CPC: 27922.

The International EPD® System. PCR 2013:12. V 2.11. Textile yarn and thread of natural fibres, man-made filaments or staple fibres. UN CPC: 263, 264

The International EPD® System. PCR 2013:22 V 2.12. Cleaning cloths. Floor-cloths, dusters and similar cleaning cloths. UN CPC: 2719.

The International EPD® System. PCR 2016:06 V 1.11. Nonwoven wipes. UN CPC: 27922.

The International EPD® System. PCR 2018:08 V1.02 Woven knitted and crocheted fabrics of naturals fibres (except silk), for apparel sector UN CPC 265 (EXCEPT 2651), UN CPC 266, UN CPC 281.

The International EPD® System. PCR 2019:03 V1.01 Woven fabrics of silk and silk-like fibers CPC: 2651.

TEXTILE MANUFACTURING SERVICES, NON-APPAREL FABRICS MADE OF NATURAL FIBRES OTHER THAN COTTON.

PRODUCT CATEGORY CLASSIFICATION: UN CPC 8821; UN CPC 265, UN CPC 281, UN CPC 27922

8 VERSION HISTORY OF PCR

VERSION 1.0, 2020-10-01

Original version of this PCR.

VERSION 1.0.1, 2025-05-27

- The validity period of the PCR was extended by 12 months, until 2025-10-01, due to the initiation of an updating process.

TEXTILE MANUFACTURING SERVICES, NON-APPAREL FABRICS MADE OF NATURAL FIBRES OTHER THAN COTTON.

PRODUCT CATEGORY CLASSIFICATION: UN CPC 8821; UN CPC 265, UN CPC 281, UN CPC 27922