THE INTERNATIONAL EPD® SYSTEM

FINISHED BOVINE, OVINE, AND CAPRINE LEATHER

PRODUCT CATEGORY CLASSIFICATION: UN CPC 2912, 2913 (SUBSETS)

PCR 2011:13
DRAFT VERSION 4.0.0. DO NOT USE OR CITE.

VALID UNTIL 20XX-YY-ZZ *(TO BE ADDED BY THE SECRETARIAT)*

DRAFT PCR FOR OPEN CONSULTATION

INTRODUCTION TO OPEN CONSULTATION

This draft PCR document is available for open consultation from 2025-02-11 until 2025-04-10. Feel free to forward the draft to any other stakeholder you might think is relevant, including colleagues and other organisations.

We are interested in comments from stakeholders on:

- General
  - Alignment with PCRs available in other programmes for type III environmental declarations, industry-specific LCA guidelines or similar.
- Scope of PCR
  - Product category definition and description
  - Classification of product category using CPC codes
- Goal and scope, life cycle inventory and life cycle impact assessment
  - Functional unit/declared unit
  - System boundary
  - Allocation rules
  - Data quality requirements
  - Recommended databases for generic data
  - Impact categories and impact assessment methodology
- Additional information

Comments shall be sent directly to the PCR Moderator (contact details available in Section 1). There is a template for comments on www.environdec.com that may be used.

For questions about the PCR, please contact the PCR moderator. For general questions about the International EPD System, EPD or PCR development, please contact the Secretariat via support@environdec.com.

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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 Environmental Product Declarations (EPD)[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. EPDs are voluntary documents for a company or an industry association to present transparent, consistent, and verifiable information about the environmental performance of their products (goods or services).

The General Programme Instructions (GPI), publicly available on www.environdec.com, includes the rules for the overall administration and operation of the programme and the basic rules for developing EPDs registered in the programme. A PCR complements the GPI and the normative standards by providing specific rules, and guidelines for developing an EPD for one or more specific product categories (see Figure 1), thereby enabling the generation of consistent EPDs within a product category. A PCR should not repeat the rules and guidelines of the GPI, but include additions, specifications and deviations to the rules set in the GPI. As such, a PCR shall be used together with the GPI.

This PCR is a main PCR that may be complemented with one or several complementary PCR (c-PCR). If there is an applicable and valid c-PCR, it shall be used in case it has been valid for at least 90 days when the EPD is verified[2]. If it has been valid for less than 90 days, it is optional to use the c-PCR. The valid c-PCRs can be found on www.environdec.com.

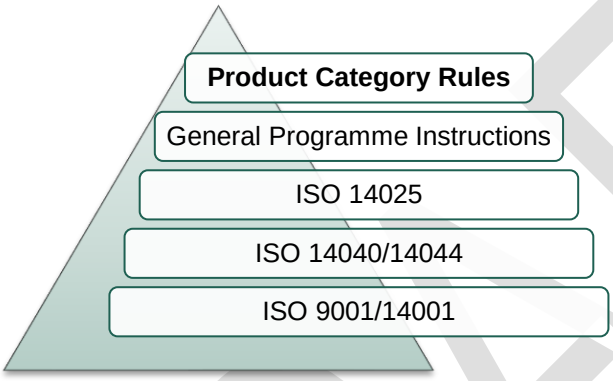

Figure 1. The hierarchy between PCRs, standards, and other documents. EN 15804 and ISO 21930 are normative standards for construction products only.

The present PCR uses the following terminology:

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

For definitions of other terms used in the document, see the GPI and normative standards.

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

The programme operator maintains the copyright of the PCR 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] Termed type III environmental declarations in ISO 14025.

[2] This does not apply when the EPD is re-verified during its validity, unless the validity period is extended.

2 GENERAL INFORMATION

2.1 ADMINISTRATIVE INFORMATION

Name:	Finished bovine, ovine, and caprine leather
Registration number and version:	*To be added by the Secretariat*
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:	Daniele Pernigotti, Aequilibria Srl-SB, dpernigotti@aequilibria.com
PCR Committee:	Aequilibria Srl-SB
Publication date:	*To be added by the Secretariat* See Section 9 for a version history of the PCR.
Valid until:	*To be added by the Secretariat* The validity may change. See www.environdec.com for the latest version of the PCR and the latest information on its validity and transition periods between versions.
Development and updates:	The PCR has been developed following ISO 14027, including public consultation and review. The rules for the development and updating processes are described in Section 9 of the GPI. The 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 on if and how to proceed with updating the PCR and renewing its validity. A PCR may be updated before it expires, based on changes in normative standards or provided significant and well-justified proposals for changes or amendments are presented. When there has been an update of the PCR, the new version should be used to develop EPDs. For small updates (change of third-digit version number), the previous version is normally immediately removed from the PCR library on www.environdec.com and there is no transition period. For medium updates (change of second-digit version number), the previous version of the PCR is valid in parallel during a transition period of at least 90 days, but not exceeding its previously set validity period. For large updates (change of first-digit version number), the previous version is valid in parallel during a transition period of at least 180 days, but not exceeding its previously set validity period. 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.

Standards and documents conformance:	General Programme Instructions of the International EPD System, version 5.0.0, based on ISO 14025 and ISO 14040/14044.[3]
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 on 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 *finished bovine, ovine, and caprine leather* and the declaration of this performance by an EPD. The PCR applies to finished bovine, ovine, and caprine leather produced from rawhides from both adult bovines and calves. The product category corresponds to subsets of UN CPC 2912 Other leather, of bovine or equine animals, without hair on, and UN CPC 2913 Other leather, without hair on (including sheep, lamb, goat or kid skin leather); composition leather with a basis of leather or leather fibre.

These PCR cover leathers that meet the following definition:[4] "*Finished leathers produced from raw hides and skins of bovine, ovine and caprine animals, which have been raised mainly for the production of milk, meat or wool, and slaughtered mainly for human consumption purposes, notably meat production.*"

From the present PCR are excluded the leathers from the hides or skins of animals other than those slaughtered for human consumption, as well as any synthetic substitute material to leather.

This PCR excludes UN CPC 2911 Chamois leather, patent leather and patent laminated leather; metalized leather.

The definition of leather is defined by EN15897:2014: "*hide or skin with its original fibrous structure more or less intact, tanned to be imputrescible, where the hair or wool may or may not have been removed, whether or not the hide or skin has been split into layers or segmented either before or after tanning and where any surface coating or surface layer, however applied, is not thicker than 0.15 mm".*

The product category corresponds to subsets of UN CPC classes 2912 and 2913:

- Division: 29 - Leather and leather products; footwear
  - Group: 291 - Tanned or dressed leather; composition leather
    - Class: 2912 - Other leather, of bovine or equine animals, furless
    - Class: 2913 - Other leather, without hair on (including sheep, lamb, goat or kid skin leather); composition leather with a basis of leather or leather fibre

More information about the product group and the United Nations Statistics Division - Classification Registry CPC codes can be found on https://unstats.un.org/unsd/classifications/unsdclassifications/cpcv21.pdf.

The product group and UN CPC code shall be specified in the EPD.

The leather can be used as an intermediate product for different types of goods such as furniture, clothing, automotive, footwear, etc. Since the application of finished bovine, ovine, and caprine leather varies substantially in final consumer products, no specific function has been defined for the product.

This PCR is compatible with different tanning methodologies such as wet blue, wet white, vegetable tanning, etc. The LCA study underlying the EPD shall specify which tanning method is used for the finished bovine leather in analysis, and the finished bovine leather shall be treated in homogeneous groups, depending on the tanning methodology applied.

In the following chapters, for editorial simplification, the tanned hide is called tanned wet blue. In the case of an LCA study applied to leather tanned using other methods, such as wet white or vegetable tanning, the descriptor should be modified accordingly (for instance, in the process flow diagram).

[3] Some rules influencing EPD development are independent of the GPI version referred to in the PCR. For example, the latest rules on EPD verification procedures in the GPI shall be followed within 90 days of its publication. See Section 5.1 in the GPI for a description of the four categories of rules and when they shall be followed.

[4] Definition from PEFCR Leather, 2018.

The trade name (if relevant) of the product shall be declared. Relevant Type I and Type II environmental labels awarded to the product may be stated. Any claims made about the product must be verifiable.

2.2.2 GEOGRAPHICAL SCOPE

This PCR may be used globally.

2.2.3 EPD VALIDITY

An EPD becomes valid as of its version date (see Section 8.4.5 of the GPI). When an EPD is originally published, the validity period is normally five years, starting from the version date or until the EPD has been de-registered from the International EPD System. Shorter validity periods are also accepted, for example, if decided by the EPD owner.

For rules on when an EPD shall be updated and re-verified during its validity, see Section 6.8.1 of the GPI. For validity periods in case of updates of EPDs, see Section 6.8 of the GPI.

The version date and the period of validity shall be stated in the EPD.

Publication of a new version of the PCR or the GPI does not affect the validity of already published EPDs.

3 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 2011-05-30 until 2011-06-30.

3.1.2 VERSION 2.0

This PCR was available for open consultation from 2014-11-01 until 2015-02-25.

3.1.3 VERSION 3.0

This draft PCR was available for open consultation from 2019-12-02 until 2020-02-02, during which any stakeholder provided comments by posting on the PCR forum on www.environdec.com or by contacting the PCR moderator.

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

- *Primiano De Rosa-Giglio, UNIC Italian Tanneries*
- *Gustavo Gonzalez-Quijano, Cotance*
- *Carlo Brondi, CNR - National Research Council*

3.1.4 VERSION 4.0.0

This PCR is available for open consultation from 2025-02-11 until 2025-04-10, during which any stakeholder is able to provide comments by contacting the PCR Moderator and/or the Secretariat.

Add information about any physical or web-based meetings held during the open consultation, if applicable.

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

- *List of stakeholder names and affiliations (to be added after the open consultation).*

In case no stakeholders provided comments and agreed to be listed as contributors, the above sentence shall be adjusted accordingly ("No stakeholders provided comments during the open consultation and agreed to be listed as contributors in the PCR and on www.environdec.com.") and the bullet list shall be removed.

3.2 PCR REVIEW

3.2.1 VERSION 1.0

Version 1.0 of the PCR was reviewed by the Technical Committee of the International EPD System.

3.2.2 VERSION 2.0

Version 2.0 of the PCR was reviewed by the Technical Committee of the International EPD System.

3.2.3 VERSION 3.0

PCR review panel:	The Technical Committee of the International EPD® System. A full list of members available on 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 moderator or PCR committee, and were excused from the review.
Chair of the PCR review:	Maurizio Fieschi
Review dates:	2020-04-22 until 2020-05-11

3.2.4 VERSION 4.0.0

PCR review panel:	The Technical Committee of the International EPD System. A full list of members is available on www.environdec.com. The review panel may be contacted via support@environdec.com. Members of the Technical Committee were requested to state any potential conflict of interest with the PCR Committee, and if there were conflicts of interest they were excused from the review.
Chair of the PCR review:	*To be added by the Secretariat*
Review dates:	*To be added by the Secretariat*

3.3 EXISTING PCRS FOR THE PRODUCT CATEGORY

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

- International EPD System. www.environdec.com.
- European Commission https://green-business.ec.europa.eu/environmental-footprint-methods_en
- PEP ecopassport program http://www.pep-ecopassport.org
- EPD Italy https://www.epditaly.it
- AENOR, Global EPD https://www.en.aenor.com/certificacion/certificacion-de-producto/declaraciones-ambientales-de-producto
- Global GreenTag International EPD Program https://www.globalgreentag.com/epd-program.html

EPD Hub https://www.epdhub.com/epd-hub-rulesTable 1 lists the identified PCRs and other standardised methods.

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

Name of PCR/standard, incl. registration number	Programme/standardisation body	Version number/date of publication	Scope
PCR 2012:11 Meat of mammals	International EPD System	Version 4.0.1, 2022-10-24	This document provides Product Category Rules (PCR) for the assessment of the environmental performance of meat of mammals

			(fresh or frozen) and the declaration of this performance by an EPD.
PCR 2021:08 Dairy products	International EPD System	Version 1.0, 2021-10-15	This document provides Product Category Rules (PCR) for the assessment of the environmental performance of raw milk, processed milk and cream, yoghurt, butter and cheese and the declaration of this performance by an EPD.
PEFCR Leather	European Commission	Final Version 25 April 2018	This document provides Product Environmental Footprint Category Rules (PEFCR) for conduct PEF study of Leather.

No existing PCRs or other relevant internationally standardised methods with overlapping scope were identified.

3.4 REASONING FOR THE DEVELOPMENT OF PCR

This PCR was developed to enable the publication of EPDs for the product category defined in Section 2.2.1 based on ISO 14025, ISO 14040/14044, and ISO 14067. 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 the comparability of products within a product category.

The development of this PCR aims at substituting PCR 2011:13 Finished bovine leather, extending the scope to also ovine and caprine leather. Moreover, this PCR is now more aligned with the scope of PEFCR Leather of the European Commission.

3.5 UNDERLYING STUDIES USED FOR PCR DEVELOPMENT

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

- PCR UN CPC 2111 AND 2113 MEAT OF MAMMALS, 2012:11, version 4.0.1
- PCR UN CPC 022 DAIRY PRODUCTS, 2021:08, version 1.0
- PCR UN CPC 2912 FINISHED BOVINE LEATHER, 2011:13
- Product Environmental Footprint Category Rules Guidance - Version 6.3 – May 2018
- PEFCR Leather – Final Version 25 April 2018
- Towards Zero Impact of the European Leather Industry. COTANCE 2024
- Leather Carbon Footprint – Review of the European Standard EN 16887:2017 Leather – Environemental footprint – Product Category Rules (PCR). UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION 2017
- ISO 14067:2018; Greenhouse gases - Carbon footprint of products - Requirements and guidelines for quantification
- Gruppo Dani Spa, 2012. EPD Environmental Product Declaration - Leather for clothing, upholstery, footwear, leather goods, accessories and interior design. THE INTERNATIONAL EPD®SYSTEM
- Conceria Montebello S.p.A., 2012. EPD Dichiarazione Ambientale di Prodotto - Pelli per abbigliamento, arredamento, calzatura, pelletteria, accessori ed interior design. THE INTERNATIONAL EPD®SYSTEM
- Pelletier, N., Pirog, R., & Rasmussen, R. (2010). Comparative life cycle environmental impacts of three beef production strategies in the Upper Midwestern United States. Agricultural Systems, 103(6), 380–389. doi:10.1016/j.agsy.2010.03.009
- European Commission Joint Research Centre – Institute for Environment and Sustainability, 2015. JRC Technical Report - Default Approaches for Cross-Cutting Issues for the Cattle Related Product Environmental Footprint Pilots; Final draft version.
- Dani SpA, 2017. EPD Environmental Product Declaration - Leather for furniture, footwear and leather goods. THE INTERNATIONAL EPD®SYSTEM

- Dani SpA, 2018. EPD Environmental Product Declaration – Box land. THE INTERNATIONAL EPD®SYSTEM
- Gruppo Mastrotto SpA, 2024, CFP Systematic Approach and EPD Process for Leather. Aequilibria Srl-SB

4 LCA METHOD

This section provides rules for the LCA method used to develop an EPD for the product category as defined in Section 2.2.1. The basic rules of the LCA method are set in Annex A of the GPI, and this section only includes additions, specifications, and deviations to the rules set in the GPI. Guidance and examples of applying the LCA method are also available on www.environdec.com/methodology.

4.1 MODELLING APPROACH

See Section A.1 of the GPI.

4.2 DECLARED UNIT

The declared unit shall be defined as 1 m^2 finished leather, measured according to ISO 11646, and its packaging (the weight of the packaging is not included in this quantity). The reference flow corresponds to the declared unit and shall be defined at the point where the product arrives at the customer gate, i.e., any losses occurring before then shall be accounted for.

The reference flow is the amount of the inputs to or outputs from processes required to produce 1 m^2 of finished leather and shall be measured in the different phases of the process as kg of raw hide or skin/m^2, taking into consideration the dry matter content, or m^2. All quantitative input and output data collected in the study shall be calculated concerning this reference flow.

Primary data shall be documented. No use of default data should be allowed (see Section 4.7).

This PCR uses a declared unit instead of a functional unit. This is because the relevant functional aspects are not known or are not possible to capture in one or a few predefined functional units. All relevant functional aspects shall, however, be considered when comparing EPDs based on this PCR.

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 should be included in the EPD, if relevant.

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

Not applicable for this product category.

4.3 SYSTEM BOUNDARY

The scope of this PCR and the EPDs based on it is cradle-to-grave, covering product stage (A1-A3), distribution stage (A4-A5) and end-of-life stage (C1-C4).

4.3.1 LIFE-CYCLE STAGES AND INFORMATION MODULES

Because of different data quality rules and the presentation of results, the product life cycle shall be divided into the following life-cycle stages and information modules:

- Product stage, modules A1-A3:
  - A1: Raw material extraction and processing (e.g., mining, agricultural and forestry operations), production of intermediate materials and components (e.g., including transformation processes such as rolling, drawing, and extrusion), processing of secondary material input (e.g., recycling processes), production of distribution and consumer packaging, etc.
  - A2: Transports to the manufacturer of the product
  - A3: Manufacturing of the product[5]

[5] These are often, but not always, the processes under operational control of the EPD owner. In this stage are included the phases to realize the finished leather, e.g. liming, beaming, tanning, dyeing and finishing.

- Distribution stage, modules A4-A5:
  - A4: Transportation of the finished leather to retailer/distribution platform/consumer;
  - A5: Waste treatment of distribution packaging.
- End of life stage, modules C1-C4:
  - C1: Disassembling;
  - C2: Transport;
  - C3: Waste processing;
  - C4: Waste disposal.

In Table 2, the life cycle stages, and information modules are described in relation to the specifics of finished leather.

Table 2. Life cycle stages and information modules relevant for finished leather.

Life cycle stage	Life cycle module group	Life cycle module	Comment
Upstream	A1-A3. Product stage	A1. Raw material supply	Included
Core		A2. Transportation	Included
		A3. Manufacturing	Included
Downstream	A4-A5. Distribution stage	A4. Transportation	Included
		A5. Waste treatment of distribution packaging	Included
	B1-B7. Use stage	B1. Use	Excluded
		B2. Maintenance	Excluded
		B3. Repair	Excluded
		B4. Replacement	Excluded
		B5. Refurbishment	Excluded
		B6. Operational energy use	Excluded
		B7. Operational water use	Excluded
	C1-C4. End-of-life stage	C1. Disassembling	Included
		C2. Transport	Included
		C3. Waste processing	Included
		C4. Waste disposal	Included

In the EPD, the environmental performance of each of the life-cycle stages shall be reported separately, and in aggregated form for the life-cycle stages (modules A-C).

Section A.3.1 of the GPI outlines rules for how to assign generation of electricity and production of fuels, steam, and other energy carriers used, and losses arising, in each information module.

4.3.1.1 Modules A1-A3: Product stage

All relevant unit processes along the upstream and core supply chain shall be included, for example:

- Module A1 – Raw material supply:
  - Process A1.1: Animal breeding (including enteric fermentation and manure management), feed production (e.g., cultivation, harvest, and refining), etc.
  - Process A1.2: Slaughterhouse
  - Process A1.3: Production of chemical and auxiliary products (e.g. detergent for cleaning) used for leather preparation, etc.
  - Process A1.4: Manufacturing of primary and secondary packaging
- Module A2 - Transportation:
  - Process A2.1: Transports of raw hides to the manufacturer of the product
  - Process A2.2: Transports of chemical and auxiliary products to the manufacturer of the product
  - Process A2.3: Transports of primary and secondary packaging to the manufacturer of the product
- Module A3 - Manufacturing:
  - Process A3.1: Preparation of the final product (e.g., liming, beaming, tanning, dyeing, and finishing)
  - Process A3.2: Maintenance (e.g. of the machines) activities more frequent than once every three years
  - Process A3.3: Waste treatment of waste generated during manufacturing
  - Process A3.4: Wastewater treatment generated during manufacturing

Processes not listed here 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.

The technical system shall not include:

- Manufacturing of production equipment, buildings, and other capital goods;
- Business travel of personnel;
- Travel to and from work by personnel;
- Research and development activities.

4.3.1.2 Modules A4-A5: Distribution stage

All relevant unit processes along the upstream and core supply chain shall be included, for example:

- Module A4 – Transportation:
  - Process A4.1: Transport of the finished leather in its packaging to retailer/distribution platform/consumer;
- Module A5 – Waste treatment of distribution packaging:
  - Process A5.1: end-of-life treatment of the distribution packaging of the finished leather, including transportation to the disposal/recovery site.

4.3.1.3 Modules C1-C4: End-of-life stage

All relevant unit processes along the upstream and core supply chain shall be included, for example:

- Module C1 – Disassembling: This module can be calculated using generic data and literature values.
  - Process C1.1: Energy used for dismantling and/or disassembling of the product;
  - Process C1.2: Auxiliary materials and energy used during dismantling and/or disassembling of the product;
- Module C2 – Transport:
  - Process C2.1: transport of the disassembled product from the site of used to waste treatment site.

- Module C3 – Waste processing:
  - Process C3.1: cleaning, separation, dismantling and other any pre-treatment needed for materials and/or energy recovery or for further processing at the disposal site.
- Module C4 – Waste disposal:
  - Process C4.1: disposal (incineration without energy recovery or landfill) of any wasted part of the product.

4.3.1.4 Excluded processes

See Section A.3.1.1 of the GPI.

4.3.2 OTHER BOUNDARY SETTING RULES

See Section A.3.2 of the GPI for rules on setting boundaries to nature as well as geographical and temporal boundaries. See Section A.4 of the GPI and Section 4.6 below for rules on setting boundaries for other product systems.

4.4 PROCESS FLOW DIAGRAM

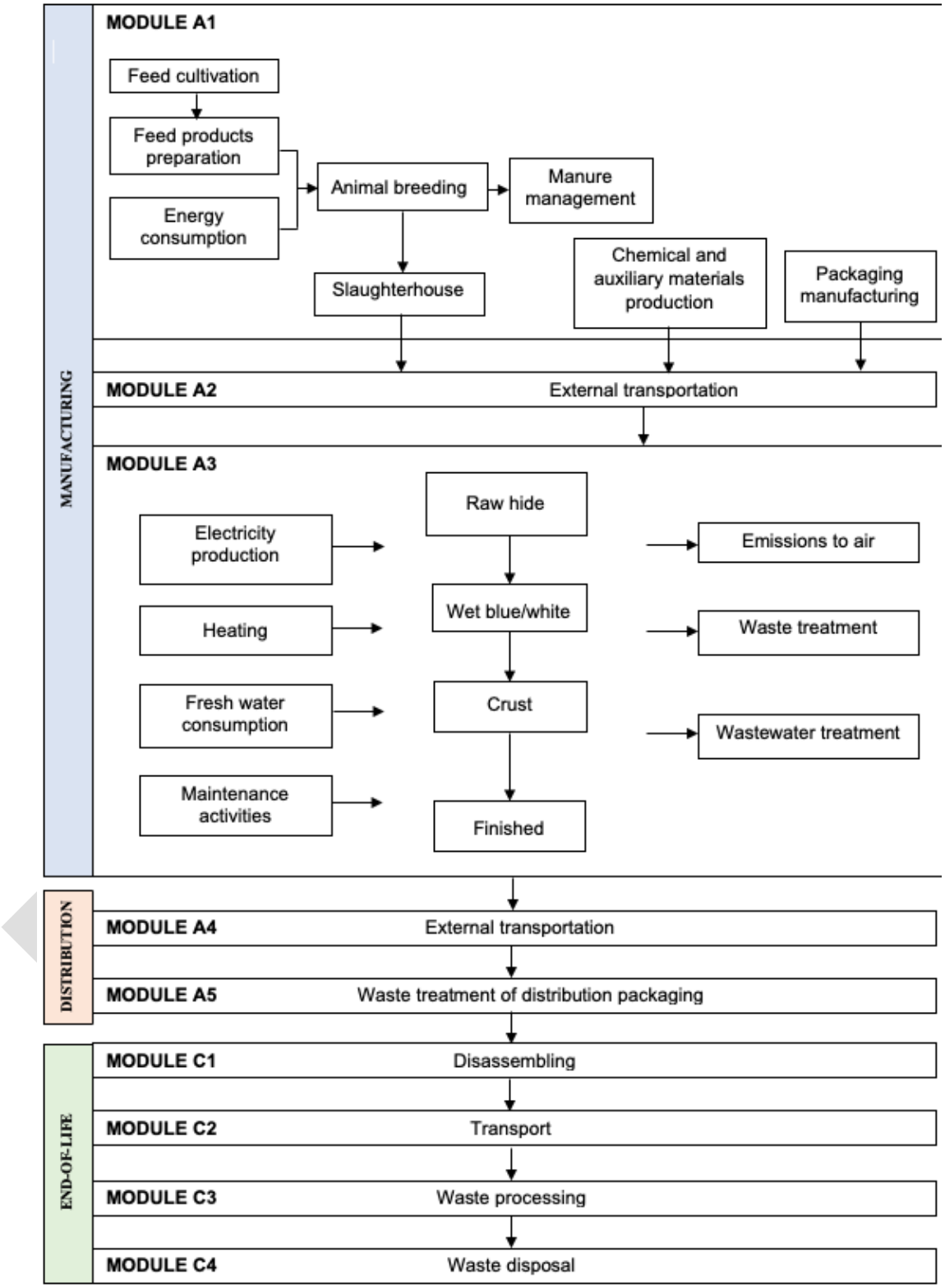

Figure 2. Process flow diagram illustrating the processes that shall be included in the product system, divided into the life-cycle stages. The illustration of processes to include may not be exhaustive.

4.5 CUT-OFF RULES

See Section A.3.3 of the GPI.

All chemical products shall be included in the inventory if the total weight of the product (as commercial presentation) is ≥ 0.002% of the total mass of all chemical product inputs. As the only exception, for the average leather production is allowed a cut-off of 0.1% of the total weight of the product (as commercial presentation) compared to the mass of all chemical product inputs.

To guarantee a conservative approach, all chemical products excluded from the previous cut-off rules shall be considered by aggregating the masses consumed by their commercial presentations. For every manufacturing phase, the products excluded shall be aggregated and shall be considered as the most consumed products in that phase.

When more alternative compounds are available, a conservative choice regarding the environmental impact should be adopted.

4.6 ALLOCATION RULES

See Section A.4 of the GPI.

4.6.1 ALLOCATION OF CO-PRODUCTS

See Section A.4.1 of the GPI.

As in PCR MEAT OF MAMMALS 2012:11, animals that yield rawhide shall be divided into two categories:

- Mammal: non-reproducing mammal destined for meat production (ex. calf in cow meat farming);
- Reproductive mammal: mammal of female gender that has reproduced and that at the end of its career (i.e., when no longer destined to reproduction and/or milk production) is destined to meat production (ex., reproductive cow in cow meat farming).

The leather life cycle, as it results from the allocation rules specifically set up for this product category in the PEFCR of leather (final Version, 25 April 2018)[6], includes upstream phases of livestock breeding and slaughter. Therefore, in the leather life cycle, multi-functionality occurs at different life cycle stages:

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

To manage multi-functionality, the approaches reported below shall be applied.

The use of allocation factors deviating from the default ones provided in the present document is strongly not suggested, since it greatly influences the results of the study and shall be justified. The related assumptions and data shall be verified by a third party. These assumptions and data and the supporting verification opinion shall be made available in the EPD or, in the case of CFP (Carbon Footprint of Products), in the supporting document.

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

The allocation factors proposed represent the percentages of total tanning impact that go to finished grain split leather and to recoverable losses.

All calculations related to the reference flow in the A3 module shall be referred to the hide's mass per declared unit. During these phases, there is a weight variation due to the loss of material or variation in the water content. These variations shall be considered in the allocation of inflows and outflows of the specific manufacturing phases.

[6] With the exception of what defined in note 3 of the following page

4.6.1.1 BOVINE LEATHER

For key processes in the product system, Table 3 provides specifications of the allocation method to use.

Table 3. Allocation method for key processes in the product system.

Process	Main product and co-products	Allocation method
Bovine farming[7]	Biophysical	Subdivision shall be used for processes that can be directly attributed to certain outputs (e.g., energy use and emissions related to milking processes). When the processes cannot be subdivided due to the lack of separate data or because technically impossible, the upstream burden, e.g., feed production, shall be allocated to farm outputs using a biophysical allocation method. Default values shall be used by LCA studies unless company-specific data are collected. The change of allocation factors is allowed only when company-specific data are collected and used for the farm module. In case generic data are used for the farm module, no change of allocation factors is allowed and the ones listed below shall be used for reproductive mammals: • Milk: 88.0% • Live animal to slaughter: 12.0% For non-reproducing mammal 100% of the impact should be allocated to the "live animal to slaughter".
Bovine slaughtering	Economic	Subdivision shall be used for processes that can be directly attributed to certain outputs. When the processes cannot be subdivided, the remaining (e.g. excluding that already allocated to milk for milk producing system and/or to wool for wool producing system) upstream burden shall be allocated to slaughterhouse and rendering outputs using the economic allocation method. The default values that shall be used for economic allocation for hides and skins is 1.31%*. No change of allocation factors is allowed.
Bovine raw hides tanning	Hide substance content	Allocation in leather tanning processes between full grain leather and its co-products shall be based on the hide substance content. See Table 4.

* Data provided by internal studies. This data is calculated based on the most updated information related to the economic value of the slaughtered animals. It shall be noted this data is less than 50% of the data proposed in the previous PCR, and the LCA studies performed using this most updated document will result in a drastic reduction of the environmental impacts due only to the updated methodology.

Allocation factors are reported in the following tables.

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

Table 4. Allocation factors for bovine leather (from PEFCR Leather, 2018).

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

The use of these allocation factors (Table 4) deviating from the default ones provided in the present document is strongly not suggested since it greatly influences the results of the study and shall be justified. The related assumptions and data shall be verified by a third party. These assumptions and data and the supporting verification opinion shall be made available in the EPD or, in the case of CFP (Carbon Footprint of Products), in the supporting document.

4.6.1.2 CAPRINE LEATHER

For key processes in the product system, the following tableError! Reference source not found. provides specifications of the allocation method to use.

Table 5. Allocation method for key processes in the product system.

Process	Main product and co-products	Allocation method
Caprine farming[8]	Biophysical	Subdivision shall be used for processes that can be directly attributed to certain outputs (e.g., energy use and emissions related to milking processes). When the processes cannot be subdivided due to the lack of separate data or because technically impossible, the upstream burden, e.g., feed production, shall be allocated to farm outputs using a biophysical allocation method. Default values shall be used by LCA studies unless company-specific data are collected. The change of allocation factors is allowed only when company-specific data are collected and used for the farm module. In case generic data are used for the farm module, no change of allocation factors is allowed and the ones listed below shall be used for reproductive mammals: ▪ Milk: 73.85% ▪ Wool: 23.64% ▪ Live animal to slaughter: 2.51% For non-reproducing mammal 76.36% of the impact should be allocated to the "live animal to slaughter".
Caprine slaughtering	Economic	Subdivision shall be used for processes that can be directly attributed to certain outputs. When the processes cannot be subdivided, the remaining (e.g., excluding that already allocated to milk for milk producing system and/or to wool for wool producing system) upstream burden shall be allocated to slaughterhouse and rendering outputs using the economic allocation method. The default values that shall be used for economic allocation for hides and skins is: 1.6% * No change of allocation factors is allowed.
Caprine raw hides tanning	Hide substance content	Allocation in leather tanning processes between full grain leather and its co-products shall be based on the hide substance content. See Table 6.

* Data provided by PEFCR Leather.

Allocation factors are reported in the following tables.

Table 6. Allocation factors for caprine leather (from PEFCR Leather, 2018).

From	Raw		Semi-processed products
To	**Semi-processed products or finished leather, hair save**	**Semi-processed products or finished leather, hair burn**	**Finished Leather**
Finished leather	91,2%	100,0%	100,0%
Recovered hair	8,8%	-	-

The use of these allocation factors (Table 6) deviating from the default ones provided in the present document is strongly not suggested since it greatly influences the results of the study and shall be justified. The related assumptions and data shall be verified by a third party. These assumptions and data and the supporting verification opinion shall be made available in the EPD or, in the case of CFP (Carbon Footprint of Products), in the supporting document.

4.6.1.3 OVINE LEATHER

For key processes in the product system, following table provides specifications of the allocation method to use.

[8] The PEFCR Leather adopts for all caprines and ovines the allocation proposed in the PEFCR of the dairy products and in the IDF (2015) for the dairy sector. For this reason, the present PCR introduces on this point a deviation from the PECFR Leather adopting this approach only for reproductive mammals and an 76.36% allocation of the animal for the on-reproductive mammals. As a consequence, on this specific point there is not an 100% consistency with the PEFCR Leather.

Table 7. Allocation method for key processes in the product system.

Process	Main product and co-products	Allocation method
Ovine farming[9]	Biophysical	Subdivision shall be used for processes that can be directly attributed to certain outputs (e.g., energy use and emissions related to milking processes). When the processes cannot be subdivided due to the lack of separate data or because technically impossible, the upstream burden, e.g., feed production, shall be allocated to farm outputs using a biophysical allocation method. Default values shall be used by LCA studies unless company-specific data are collected. The change of allocation factors is allowed only when company-specific data are collected and used for the farm module. In case generic data are used for the farm module, no change of allocation factors is allowed and the ones listed below shall be used for reproductive mammals: ▪ Milk: 73.85% ▪ Wool: 23.64% ▪ Live animal to slaughter: 2.51% For non-reproducing mammal 76.36% of the impact should be allocated to the "live animal to slaughter".
Ovine slaughtering	Economic	Subdivision shall be used for processes that can be directly attributed to certain outputs. When the processes cannot be subdivided, the remaining (e.g., excluding that already allocated to milk for milk producing system and/or to wool for wool producing system) upstream burden shall be allocated to slaughterhouse and rendering outputs using the economic allocation method. The default values that shall be used for economic allocation for hides and skins is 1.6%*. No change of allocation factors is allowed.
Ovine raw hides tanning	Hide substance content	Allocation in leather tanning processes between full grain leather and its co-products shall be based on the hide substance content. See Table 8.

* Data provided by PEFCR Leather.

Allocation factors are reported in the following tables.

Table 8. Allocation factors for ovine leather (from PEFCR Leather, 2018)

From	Raw		Semi-processed products
To	**Semi-processed products or finished leather, wool save**	**Semi-processed products or finished leather, wool burn**	**Finished Leather**
Finished leather	60,4%	100,0%	100,0%
Recovered wool	39,6%	-	-

The use of these allocation factors (Table 8) deviating from the default ones provided in the present document is strongly not suggested since it greatly influences the results of the study and shall be justified. The related assumptions and data shall be verified by a third party. These assumptions and data and the supporting verification opinion shall be made available in the EPD or, in the case of CFP (Carbon Footprint of Products), in the supporting document.

4.6.2 ALLOCATION OF WASTE

See Section A.4.2 of the GPI.

[9] The PEFCR Leather adopts for all caprines and ovines the allocation proposed in the PEFCR of the dairy products and in the IDF (2015) for the dairy sector. For this reason, the present PCR introduces on this point a deviation from the PECFR Leather adopting this approach only for reproductive mammals and an 76.36% allocation of the animal for the on-reproductive mammals. As a consequence, on this specific point there is not an 100% consistency with the PEFCR Leather.

4.7 DATA AND DATA QUALITY RULES

See Section A.5 of the GPI.

See Section 4.8 for further rules related to data and data quality per life-cycle stage and module D.

4.7.1 DATA CATEGORIES

See Section A.5.1 of the GPI.

4.7.2 DATA QUALITY REQUIREMENTS FOR PRIMARY DATA

See Section A.5.2 of the GPI.

4.7.3 DATA QUALITY REQUIREMENTS FOR REPRESENTATIVE SECONDARY DATA

See Section A.5.3 of the GPI.

To ensure a further alignment with PEFCR rules it shall be using the same of the PEFCR rules for chemical modeling which are defined in detail (see Tables 14 and 36 in PEFCR of leather).

In terms of data quality of chemical products, the following criteria shall be applied:

- Specific data quality: the specific chemical compound is present in the used database or available in additional LCA studies (DQR equals 1 or 2 of modelling accuracy, if it is used in the composition of chemical of the PEFCR);
- Selected generic data quality: the exact formulation of the chemical compound is not present in the database (DQR equals 3 or 4 of modelling accuracy, if it is used the composition of chemical of the PEFCR), however a very similar formulation or the precursors of a common industrial process for the production of the chemical substance is present in the database. In this scenario, the substance must be represented by a similar formulation or by its precursors, which shall be used with a ratio commensurate with their molar weight contribution in the common industrial production process of the compound.
- Generic data quality: the exact formulation of the chemical compound is not present in the database, but an alternative compound can be identified in the database (DQR equals 5 of modelling accuracy, if it is used the composition of chemical of the PEFCR).

4.7.4 DATA QUALITY ASSESSMENT AND DECLARATION

See Section A.5.4 of the GPI.

4.7.5 EXAMPLES OF DATABASES FOR SECONDARY DATA

Table 9 lists examples of databases and datasets to be used for secondary data. Note that a data quality assessment shall be performed for data listed in the table and that other data that fulfil the data quality requirements may also be used.

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

Process	Geographical scope	Dataset	Database
Bovine production (mammals)	Global	Beef cattle for slaughter, at beef farm, PEF compliant/ Economic	Agrifootprint
Bovine production (reproductive mammals)	Global	Cows for slaughter, at dairy farm, PEF compliant/Economic	Agrifootprint
Caprine and ovine production	Global	Sheep for slaughtering, live weight {RoW}| sheep production, for meat	Ecoinvent

The Agrifootprint database present also the version “PEF compliant” of the two datasets of Bovine production (see Table 3) which present different allocation percentages. In particular, the dataset for reproductive mammals (“Cows for slaughter”) of the version “PEF compliant” must report the same allocation percentages indicated above:

- Milk: 88.0%
- Live animal to slaughter: 12.0%.

On the contrary, the dataset for non-reproducing mammals ("Beef cattle for slaughter") does not present any allocation to the farm since the animal does not produce any milk and the other co-products during its life, and the entire impact is allocated to the slaughterhouse on the base of the economic allocation.

Please pay attention to the database for caprine and ovine production, which does not use economic allocation.

4.8 OTHER LCA RULES

See Section A.6 of the GPI.

For specific LCA rules per life-cycle stage, see Section 4.9.

The use of different values for allocation (Tables of cap. 4.6) deviating from the default ones provided in the present document is strongly not suggested, since it greatly influences the results of the study and shall be justified. The related assumptions and data shall be verified by a third party. These assumptions and data and the supporting verification opinion shall be made available in the EPD or, in the case of CFP (Carbon Footprint of Products), in the supporting document.

It is important to remember that the new economic allocation value for bovine leather is calculated based on the most updated information related to the economic value of the slaughtered animals. It shall be noted this data is less than 50% of the data proposed in the previous PCR, therefore, the LCA studies performed using this most updated document will result in a drastic reduction of the environmental impacts due only to the updated methodology.

Weight variations along the process of BOVINE leather

For a single product or family of products EPDs, it shall be used the specific weight variation factors. In the LCA study report these specific weight variation factors shall be justified.

For an EPD of the average production of all kinds of finished bovine leather products produced in a tannery, the weight variations that have to be applied are specified in Table 10.

Y is the weight of the representative rawhide ready for soaking/liming at the tannery, calculated as specified in the following Table.

Table 10. Weight variations during the manufacturing processes

Manufacturing process	Weight variation average hide
Rawhide ready for soaking/liming	Y
Pelt (limed and dehaired hide)	Y +12%
Grain split ready for tanning	Y - 50%
Shammied, tanned and shaved grain ready for dyeing	Y-75%
Crust (dyed and dried)	Y-86%
Finished leather	Y-86%

The use of these weight variation values (Table 10) deviating from the default ones provided in the present document is strongly not suggested, since it greatly influences the results of the study and shall be justified. The related assumptions and data shall be verified by a third party. These assumptions and data and the supporting verification opinion shall be made available in the EPD or, in the case of CFP (Carbon Footprint of Products), in the supporting document.

A weight reduction for the salting and trimming of the rawhide from the slaughterhouse shall be applied as follows:

The weight X of the rawhide from the slaughterhouse necessary for obtaining Y kg of rawhide ready for soaking/liming is:

$$Y = X * ((a*(1-b))+(c*(1-d)))$$

Y: weight of the representative rawhide ready for soaking/liming

X: weight of the representative rawhide from the slaughterhouse

a: percentage of salted rawhides used in the tannery

b: percentage of weight reduction of salted rawhides between slaughtering and soaking/liming (fixed at 15% for all categories)[10]

c: percentage of fresh rawhides used in the tannery

d: percentage of weight reduction of fresh rawhides between slaughtering and soaking/liming (fixed at 3% for all categories)

Data on slaughterhouse activities shall be specific to the animal species under study. Key assumptions shall be documented.

4.8.1 MASS BALANCE

See Section A.6.1 of the GPI.

4.8.2 ELECTRICITY MODELING

See Section A.6.2 of the GPI.

4.8.3 BIOGAS MODELING

See Section A.6.3 of the GPI.

4.9 SPECIFIC RULES PER LIFE-CYCLE STAGE AND MODULE D

See Section A.7 of the GPI.

Below are further data quality requirements and other LCA rules per life-cycle stage, and for module D, of relevance for the product category.

4.9.1 PRODUCT STAGE, A1-A3

See Section A.7.1 of the GPI and add relevant specifications, additions, and deviations here.

This PCR does not provide any additions to the rules and guidance in the GPI on the modelling of the product stage.

4.10 ENVIRONMENTAL PERFORMANCE INDICATORS

See Section A.8 of the GPI.

4.11 SPECIFIC RULES PER EPD TYPE

4.11.1 MULTIPLE PRODUCTS FROM THE SAME COMPANY

See Section A.9.1 of the GPI.

4.11.2 SECTOR EPD

See Section A.9.2 of the GPI.

4.11.3 EPD OWNED BY A TRADER

See Section A.9.3 of the GPI.

[10] Data origin: Tanneries involved in the PCR elaboration; these variations shall be used as fixed specific data for all categories of raw hides.

4.11.4 EPD OF PRODUCT NOT YET ON THE MARKET

See Section A.9.4 of the GPI.

4.11.5 EPD OF PRODUCT RECENTLY ON THE MARKET

See Section A.9.5 of the GPI.

5 CONTENT OF LCA REPORT

Data for verification shall be presented in the form of an LCA report – a systematic and comprehensive summary of the project documentation that supports the verification of an EPD. The LCA report is not part of the public communication.

See Section 8.3.1 of the GPI for rules on the content of the LCA report.

Note that there may be rules on the content of the LCA report elsewhere in the GPI or in this PCR.

6 CONTENT AND FORMAT OF EPD

See Section 7 of the GPI.

6.1 EPD LANGUAGES

See Section 7.1 of the GPI.

6.2 UNITS AND QUANTITIES

See Section 7.2 of the GPI.

6.3 USE OF IMAGES IN EPD

See Section 7.3 of the GPI.

6.4 SECTIONS OF THE EPD

See Section 7.4 of the GPI.

6.4.1 COVER PAGE

See Section 7.4.1 of the GPI.

6.4.2 GENERAL INFORMATION

See Section 7.4.2 of the GPI.

6.4.3 INFORMATION ABOUT EPD OWNER

See Section 7.4.3 of the GPI.

6.4.4 PRODUCT INFORMATION

See Section 7.4.4 of the GPI.

6.4.5 CONTENT DECLARATION

See Section 7.4.5 of the GPI.

6.4.6 LCA INFORMATION

See Section 7.4.6 of the GPI.

6.4.7 ENVIRONMENTAL PERFORMANCE

See Section 7.4.7 of the GPI.

The EPD shall declare the environmental performance indicators listed or referred to in Section 4.10, per declared unit, per life-cycle stage.

6.4.8 ADDITIONAL ENVIRONMENTAL INFORMATION

See Section 7.4.8 of the GPI.

Additional environmental information should include the carbon storage in the leather at the tannery gate, as described in ANNEX 6 – Downstream scenarios of PEFCR (2018). If calculated, this is additional information that does not influence the climate change impact category.

6.4.9 ADDITIONAL SOCIAL AND ECONOMIC INFORMATION

See Section 7.4.9 of the GPI.

6.4.10 INFORMATION RELATED TO SECTOR EPDS

See Section 7.4.10 of the GPI.

6.4.11 VERSION HISTORY

See Section 7.4.11 of the GPI.

6.4.12 ABBREVIATIONS

See Section 7.4.12 of the GPI.

6.4.13 REFERENCES

See Section 7.4.13 of the GPI.

7 LIST OF ABBREVIATIONS

CPC	Central product classification
EPD	Environmental Product Declaration
GPI	General Programme Instructions
ISO	International Organization for Standardization
LCA	Life cycle assessment
PCR	Product category rules
RSL	Reference service life
UN	United Nations

8 REFERENCES

CEN (2021) EN 15804:2012+A2:2019/AC:2021, Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products.

EPD International (2024) General Programme Instructions for the International EPD System. Version 5.0.0, dated 2024-06-19. Available on www.environdec.com.

ISO (2006a) ISO 14025:2010, Environmental labels and declarations – Type III environmental declarations – Principles and procedures.

ISO (2006b) ISO 14040:2021, Environmental management – Life cycle assessment – Principles and framework.

ISO (2006c) ISO 14044: 2021, Environmental management – Life cycle assessment – Requirements and guidelines.

ISO (2015a) ISO 14001:2015, Environmental management systems – Requirements with guidance for use.

ISO (2015b) ISO 9001:2015, Quality management systems – Requirements.

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

ISO (2018b) ISO 14067:2018, Greenhouse gases – Carbon footprint of products – Requirements and guidelines for quantification and communication.

PEFCR Leather, Final version, 25 April 2018.

9 VERSION HISTORY OF PCR

VERSION 1.0, 2011-09-28

- Original version of the PCR, based on PCR 2007:03.

VERSION 2.0, 2015-06-11

- Compliance with to the General Programme Instructions, Version 2.01.
- Use of the latest template
- The system boundary for the core model now explicitly excludes research activities and business travel by personnel.
- Specification for GWP calculation added from General Programme Instructions
- Change in reference database for cattle raising processes (from LCAfood to Agrifootprint)
- Update of cut-off rules for chemical products used in the core module
- Packaging collocated in the upstream module instead of the core module
- Change in allocation rules for upstream processes (from mass to economic allocation) in alignment with other PCRs (e.g. mammals meat)
- Change in animal categories which supply the raw hide in alignment with other PCRs (e.g. mammals meat)

VERSION 2.01, 2018-05-03

- Editorial corrections

VERSION 3.0, 2020-05-22

- Compliance to the General Programme Instructions, Version 3.01.
- Use of the latest basic module as template.
- Change in allocation rules for upstream processes in alignment with the PEFCR of leather (final Version, 25 April 2018).

VERSION 3.01, 2020-07-07

- Clarification that the allocation of farming does not fully comply with the allocation rules of PEFCR Leather (see footnote 2).

VERSION 3.0.2, 2022-03-21

- Editorial change: correct registration number added on cover page.

VERSION 3.0.3, 2022-04-20

- Editorial changes in Sections 5.4.5.1 to 5.4.5.3, to clarify the indicator list at www.environdec.com applies also for the indicators of resource use, waste production and other output flows.

VERSION 4.0.0, 20YY-MM-DD

- Updated to comply with the General Programme Instructions, Version 4.0.0.
- Other changes will be added after the open consultation.

FINISHED BOVINE, OVINE AND CAPRINE LEATHER

PRODUCT CATEGORY CLASSIFICATION: UN CPC 2912, 2913 (SUBSETS)