

OTHER SPECIAL- AND GENERAL-PURPOSE MACHINERY AND PARTS THEREOF

PRODUCT CATEGORY CLASSIFICATION: UN CPC 435, 439, 442, 444, 446 AND 449.

PCR 2010:08

VERSION 5.0.0

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

NOTE: THIS DOCUMENT IS A PCR TEMPLATE TO BE USED IN PCR DEVELOPMENT. IT IS NOT A PCR.

DRAFT FOR OPEN CONSULTATION

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INTRODUCTION TO OPEN CONSULTATION

This draft PCR document is available for open consultation from 2026-02-25 until 2026-04-25. 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 <https://www.environdec.com/support>.

The secretariat would like to pose the question to all relevant stakeholders for this PCR, if they see a need to define this PCR as a main PCR with possibility to create complementary PCRs for sub products within this category.

If there is an interest, please indicate so in the open consultation comments file.

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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 **Error! Reference source not found.**), 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.

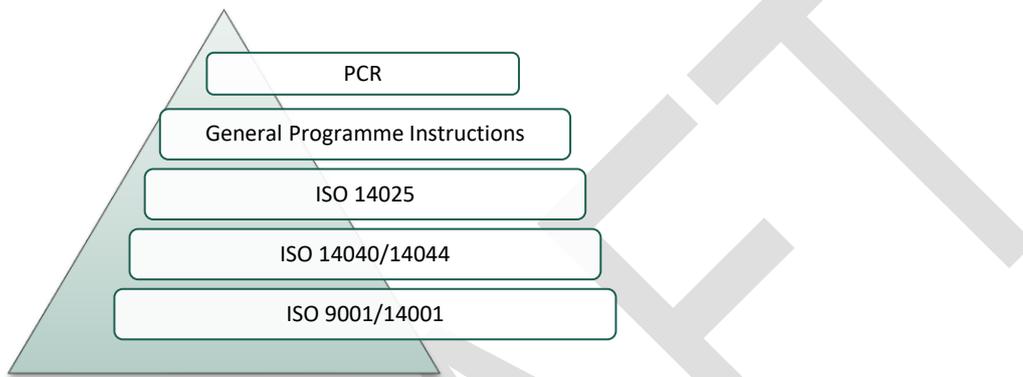


Figure 1. The hierarchy between PCRs, standards and other documents.

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.

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2 GENERAL INFORMATION

2.1 ADMINISTRATIVE INFORMATION

Name:	Other special- and general-purpose machinery and parts thereof.
Registration number and version:	<i>2010:08 version 5.0.0</i>
Programme:	
Programme operator:	<p>EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden.</p> <p>Website: www.environdec.com E-mail: support@environdec.com</p>
PCR Moderator:	Andrea Quintá Junquera, ABB S.A., andrea.quinta@es.abb.com
PCR Committee:	<p>ABB AB - Daniel Nolkranztz, daniel.nolkranztz@se.abb.com ABB Limited - Noli Abecia, noli.abecia@ie.abb.com</p>
Publication date:	<p><i>To be added by the Secretariat</i></p> <p>See Section 9 for a version history of the PCR.</p>
Valid until:	<p><i>To be added by the Secretariat</i></p> <p>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.</p>
Development and updates:	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>

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Standards and documents conformance:	General Programme Instructions of the International EPD System, version 5.0.1, based on ISO 14025 and ISO 14040/14044. ²
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 special and general-purpose machinery and the declaration of this performance by an EPD. The product category corresponds to UN CPC group 435 (Lifting and handling equipment and parts thereof), 439 (Other general-purpose machinery and parts thereof), 444 (Machinery for mining, quarrying and construction, and parts thereof), 446 (Machinery for textile, apparel and leather production, and parts thereof) and 442 (Machine-tools and parts and accessories thereof) with the specific underlying classes and subclasses detailed below.

The hierarchical structure is:

- **Division 44 – Special purpose machinery**
 - Group 442 - Machine-tools and parts and accessories thereof
 - Class 4422 Machine-tools for working stone, ceramics and the like, and for working wood, bone, hard plastics and the like; presses for the manufacture of particle board and the like
 - Sub Class 44221- Machine tools for working stone, ceramics, concrete, asbestos, cement or like mineral materials or for cold working glass
 - ◆ HS 2022 4422 - Machine-tools for working stone, ceramics and the like, and for working wood, bone, hard plastics and the like; presses for the manufacture of particle board and the like
 - Group 444 – Machinery for mining, quarrying and construction, and parts thereof
 - Class 4441 Continuous-action elevators and conveyors, for goods or materials, specially designed for underground use; coal or rock cutters and tunnelling machinery; other boring and sinking machinery
 - Subclass 44411 - Continuous-action elevators and conveyors, for goods or materials, specially designed for underground use
 - ◆ HS 2022 8428.31 - Other lifting, handling, loading or unloading machinery (for example, lifts, escalators, conveyors, teleferics) - Specially designed for underground use
 - Class 4444 Machinery for sorting, screening, separating, washing, crushing, grinding, mixing or kneading earth, stone, ores or other mineral substances, in solid form; machinery for agglomerating, shaping or moulding solid mineral fuels, ceramic paste, unhardened cements, plastering materials or other mineral products in powder or paste form; machines for forming foundry moulds of sand
 - Subclass 44440 - Machinery for sorting, screening, separating, washing, crushing, grinding, mixing or kneading earth, stone, ores or other mineral substances, in solid form; machinery for agglomerating, shaping or moulding solid mineral fuels, ceramic paste, unhardened cements, plastering materials or other mineral products in powder or paste form
 - ◆ HS 2022 8474.10 - Sorting, screening, separating or washing machines
 - ◆ HS 2022 8474.20 - Crushing or grinding machines
 - ◆ HS 2022 8474.3 - Mixing or kneading machines:

² 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.

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- ◆ HS 2022 8474.31 - Concrete or mortar mixers
- ◆ HS 2022 8474.32 - Machines for mixing mineral substances with bitumen
- ◆ HS 2022 8474.39 - Other
- ◆ HS 2022 8474.80- Other machinery
- Group 446 – Machinery for textile, apparel and leather production, and parts thereof
 - Class 44629 - Other machinery for textile and apparel production n.e.c.
 - ◆ HS 2022 8443.19 - Other
 - ◆ HS 2022 8449.00 - Machinery for the manufacture or finishing of felt or nonwovens in the piece or in shapes, including machinery for making felt hats; blocks for making hats.
 - ◆ HS 2022 8451.30 - Ironing machines and presses (including fusing presses)
 - ◆ HS 2022 8451.40 - Washing, bleaching or dyeing machines
 - ◆ HS 2022 8451.50 - Machines for reeling, unreeling, folding, cutting or pinking textile fabrics
 - ◆ HS 2022 8451.80 - Other machinery
- Group 449 – Other special-purpose machinery and parts thereof
 - Class 4491 - Other special-purpose machinery
 - Class 4492 - Parts n.e.c. for special-purpose machinery
- **Division 43 – General purpose machinery**
 - Group 435 - Lifting and handling equipment and parts thereof
 - Class 4354 - Lifts, skip hoists, escalators and moving walkways
 - Subclass 43540 - Lifts, skip hoists, escalators and moving walkways. The scope of this PCR is limited to machinery defined as skip hoist in this subclass. Lifts used in the construction sector are excluded from the scope of this PCR and shall follow PCR 2019:14 along with c-PCR -008 for lifts.
 - ◆ HS 2022 8428.10 - Lifts and skip hoists.
 - Group 439 Other general-purpose machinery and parts thereof
 - Class 4391 – Gas generators, distilling plant, air conditioning and refrigerating equipment, filtering equipment, filtering machinery with the exception of subclass 43912 and 43913.
 - Subclass 43911 Producer gas or water gas generators; acetylene gas generators and similar water process gas generators; distilling or rectifying plant; heat exchange units; machinery for liquefying air or gas
 - ◆ HS 2022 8405.10 - Producer gas or water gas generators, with or without their purifiers; acetylene gas generators and similar water process gas generators, with or without their purifiers.
 - ◆ HS 2022 8419.40 - Distilling or rectifying plant
 - ◆ HS 2022 8419.50 - Heat exchange units
 - ◆ HS 2022 8419.60 - Machinery for liquefying air or other gases
 - Subclass 43914 Filtering or purifying machinery and apparatus, for liquids or gases, except oil filters, petrol filters and air intake filters for internal combustion engines
 - ◆ HS 2022 8421.21 - Filtering or purifying machinery and apparatus for liquids: - For filtering or purifying water
 - ◆ HS 2022 8421.22 - Filtering or purifying machinery and apparatus for liquids: - For filtering or purifying beverages other than water
 - ◆ HS 2022 8421.29 - Filtering or purifying machinery and apparatus for liquids: - Other
 - ◆ HS 2022 8421.39 - Filtering or purifying machinery and apparatus for gases: - Other
 - Subclass 43915 Oil filters, petrol filters and air intake filters for internal combustion engines

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- ◆ HS 2022 8421.23 - Oil or petrol-filters for internal combustion engines
- ◆ HS 2022 8421.31 - Intake air filters for internal combustion engines
- Class 4392 – Machinery for cleaning bottles, packing, and weighing, spraying machinery with the exception of subclass 43921.
 - Subclass 43922 Weighing machinery (excluding balances of a sensitivity of 5 cg or better)
 - ◆ HS 2022 8423.10 - Personal weighing machines, including baby scales; household scales
 - ◆ HS 2022 8423.20 - Scales for continuous weighing of goods on conveyors
 - ◆ HS 2022 8423.30 - Constant weight scales and scales for discharging a predetermined weight of material into a bag or container, including hopper scales
 - ◆ HS 2022 8423.8 - Other weighing machinery:
 - ◆ HS 2022 8423.81 - Having a maximum weighing capacity not exceeding 30 kg
 - ◆ HS 2022 8423.82 - Having a maximum weighing capacity exceeding 30 kg but not exceeding 5,000 kg
 - ◆ HS 2022 8423.89 – Other
 - Subclass 43923 Fire extinguishers; spray guns and similar appliances; steam or sand blasting machines and similar jet projecting machines; mechanical appliances for projecting, dispersing or spraying liquids or powders, except agricultural or horticultural appliances
 - ◆ HS 2022 8424.10 - Fire extinguishers, whether or not charged
 - ◆ HS 2022 8424.20 - Spray guns and similar appliances
 - ◆ HS 2022 8424.30 - Steam or sand blasting machines and similar jet projecting machines
 - ◆ HS 2022 8424.89 - Others
 - Subclass 43924 Gaskets of metal sheeting
 - ◆ HS 2022 8484 - Gaskets and similar joints of metal sheeting combined with other material or of two or more layers of metal; sets or assortments of gaskets and similar joints, dissimilar in composition, put up in pouches, envelopes or similar packings; mechanical seals.
- Class 4393 – General-purpose machinery n.e.c.
 - Subclass 43931 Fans, except domestic type; centrifuges, except cream separators and clothes dryers
 - ◆ HS 2022 8414.59 - Fans - Other
 - ◆ HS 2022 8421.19 - Centrifuges, including centrifugal dryers - Other
 - Subclass 43932 Machinery n.e.c. for the treatment of materials by a process involving a change of temperature
 - ◆ HS 2022 8419.89 - Other machinery, plant and equipment: Others
 - Subclass 43933 Calendering or other rolling machines, except for metals or glass
 - ◆ HS 2022 8420.10 - Calendering or other rolling machines
 - Subclass 43934 Automatic goods vending machines
 - ◆ HS 2022 8476.21 - Automatic beverage-vending machines: Incorporating heating or refrigerating devices
 - ◆ HS 2022 8476.29 - Automatic beverage-vending machines: Other
 - ◆ HS 2022 8476.81 - Other machines: Incorporating heating or refrigerating devices
 - ◆ HS 2022 8476.89 - Other machines: Other
 - Subclass 43935 Dishwashing machines, except household type
 - ◆ HS 2022 8422.19 - Dish washing machines: Other; excluding HS 2022 8422.11 of the household type.
- Class 4394 – Parts for the goods of classes 4391 to 4393

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- Subclass 43941 Parts of producer gas or water gas generators; parts of acetylene gas generators and similar water process gas generators; parts for the goods of subclass 43912; parts of refrigerating and freezing equipment and heat pumps; parts of machinery for the treatment of materials by a process involving a change of temperature
 - ◆ HS 2022 8405.90 Producer gas or water gas generators, with or without their purifiers; acetylene gas generators and similar water process gas generators, with or without their purifiers: Parts
 - ◆ HS 2022 8418.91 - Parts of refrigerating and freezing equipment and heat pumps: - Furniture designed to receive refrigerating or freezing equipment
 - ◆ HS 2022 8418.99 - Parts of refrigerating and freezing equipment and heat pumps: - Other
 - ◆ HS 2022 8419.90 - Machinery, plant or laboratory equipment, whether or not electrically heated: - Parts
- Subclass 43942 Parts of centrifuges, including centrifugal dryers; parts of filtering or purifying machinery and apparatus for liquids or gases
 - ◆ HS 2022 8421.91 - Parts: - Of centrifuges, including centrifugal dryers
 - ◆ HS 2021 8421.99 - Parts: - Other

If you wish to include other machinery not included in the above product group, contact the moderator of this PCR or the Secretariat. Before doing this, check so the machinery is not already covered by another PCR (existing or under development) of the International EPD® System, for example, PCR 2012:02 Machine tools for drilling, boring or milling metal (V4.0.0) and PCR 2024:06 Electronic and electric equipment, and electronic components (non-construction) (EN 50693) (V1.0.1).

For more information see <https://unstats.un.org/unsd/classifications/>.

2.2.2 GEOGRAPHICAL SCOPE

This PCR may be used globally.

When conducting an EPD, any geographical limitations should be stated and should correspond to the geographical scenarios used in the LCA model.

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 1.0.0

Version 1.0 and 2.0 were available for open consultation via www.environdec.com.

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3.1.2 VERSION 3.0.0

Version 3.0 of this PCR was available for open consultation from 2013-09-12 until 2013-11-12 via www.environdec.com.

3.1.3 VERSION 4.0.0

Version 4.0 of this PCR was available for open consultation from 2020-03-03 until 2020-05-01, via www.environdec.com, during which any stakeholder was able to provide comments by contacting the PCR Moderator and/or the Secretariat. Stakeholders were invited via e-mail or other means to take part in the open consultation and were encouraged to forward the invitation to other relevant stakeholders. The following stakeholders provided comments during the open consultation and agreed to be listed as contributors in the PCR and at www.environdec.com.

- CTME

3.1.4 VERSION 5.0.0

Version 5.0.0 of this PCR was available for open consultation from *date* until *date*, during which any stakeholder was able to provide comments by contacting the PCR Moderator and/or the Secretariat.

Above dates shall be given in the following format: 20YY-MM-DD.

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 affiliation (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 1.0.0, 2.0.0, 3.0.0

Version 1.0, 2.0 and 3.0 were reviewed by the Technical Committee of the International EPD® System.

3.2.2 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:	Lars-Gunnar Lindfors
Review dates:	2021-03-16 until 2021-05-03

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3.2.3 VERSION 5.0.0

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:	<i>To be added by the Secretariat</i>
Review dates:	<i>To be added by the Secretariat</i>

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.
- PEP Ecopassport
- JEMAI Ecoleaf
- UL Environmental
- ASTM International EPD Programme
- NSF International Center for Sustainability Standards EPD
- EPD Norway
- EPD Italy

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
Machine-tools for drilling, boring or milling metals and composite materials (4.0.0) Registration number: 2012:02	EPD International AB	4.0.0/2024-02-27	UN CPC 44214 machine-tools for drilling, boring or milling metals and composite materials
Machine-tools for material working by removal of material (1.0.3) Registration number: 2021:10	EPD International AB	1.0.3/2022-06-01	Machine tools for material working by removal of material by laser or similar; the product category corresponds to a sub-set of UN CPC 44211.
Being updated - Machines for filling and packaging of liquid food (2.0.4)	EPD International AB	2.0.4/Being updated (v5.0.0)	This PCR covers the following types of machines which are part of CPC 43921: <ul style="list-style-type: none"> • machinery for filling, closing, sealing, capsuling or labelling bottles, cans, boxes, bags or other containers for liquid food;

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Name of PCR/standard, incl. registration number	Programme/standardisation body	Version number/date of publication	Scope
Registration number: 2012:18			<ul style="list-style-type: none"> other packing or wrapping machinery used in liquid food filling lines
Under development - Clothes or linen washing machines (c-PCR under PCR 2024:06)	EPD International AB	Under development	Electric or non-electric washing machines for use on clothes or linen. These electrical appliances may also have a drying function. The product category corresponds to a subset of UN CPC 44812
Escalators and moving walks (1.0.0) C-PCR-025 (TO PCR 2019:14)	EPD International AB	1.0.0/2025-04-22	Escalators and moving walks and the declaration of this performance by an EPD corresponding to UN CPC 4354 Lifts, skip hoists, escalators and moving walkways. Excluding skip hoists.

3.4 REASONING FOR DEVELOPMENT OF PCR

This PCR was developed to enable publication of EPDs for the product category defined in Section 2.2.1 based on ISO 14025 and ISO 14040/14044. The PCR enables different practitioners to generate consistent results when assessing the environmental impact of products of the same product category, and thereby it supports comparability of products within a product category.

3.5 UNDERLYING STUDIES USED FOR PCR DEVELOPMENT

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

- COMEXI, 2017. Life Cycle Assessment of Comexi F2 MC Flexographic printer.
- Erumban, A. A. (2008). Lifetimes of Machinery and Equipment: Evidence from Dutch Manufacturing. Review of Income and Wealth, 2(54), 237-268.

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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/FUNCTIONAL UNIT

The declared unit (DU) for this PCR is one (1) product unit, including its packaging, unless an applicable c-PCR specifies otherwise. Results shall be expressed per declared unit; however, the life-cycle modelling shall be carried out over the selected Reference Service Life (RSL) to ensure consistent temporal boundaries and comparability between products.

A description of the function of the product shall be included in the EPD (quantified performance of the machine), together with a statement clarifying that the function of the product must be comparable for the results to be compared. To enable meaningful comparison between EPDs, it is recommended that the machinery being compared delivers a similar output. The technical specifications shall be provided according to Section 6.4.4 and shall include the information listed in Table 3 (Technical Information), whenever relevant. If a recognized technical standard exists that defines the operational or testing conditions for the machinery (e.g., duty cycles, loads, or performance test conditions), it shall be applied for the modelling of the use stage (Module B). The reference to this standard shall be included in Table 3.

In addition, if there is an accepted market or industry standard specifying the typical performance metric or output for a specific class or subclass of machinery (see Section 2.2.1), a complementary functional unit (FU) shall be defined under the Reference Service Life (RSL; see below for more details). If a FU is used, it shall be clearly described in the EPD and it shall be justified according to market standards, as appropriate. The results per this complementary FU shall be declared under a separate subsection of the Environmental performance section (see Section 6.4.7).

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

The EPD shall declare both the technical lifespan and, where available, the actual lifespan of the product, together with a description of the product function, operating conditions, and use pattern. The use pattern shall be stated in terms appropriate to the product type, such as hours of operation per day, number of work shifts, days of operation per year, or years of use (Section 6.4.4 Table 3).

It is important to distinguish between RSL and the technical, average, or actual service life of a product:

- The RSL is a standardized, comparative reference period for the product category and does not represent the guaranteed, average, or expected real-world life of an individual product.
- The technical lifespan refers to the average time for which a product has been designed or demonstrated to perform (which may differ from the warranty period).
- The actual lifespan refers to the observed average time products remain in use under real operating conditions.

Industrial machinery covered by this PCR exhibits a wide range of realistic lifespans depending on product design, duty cycle, operating conditions, and maintenance quality. In general, the technical or actual lifespan of the machines within this product category ranges between 10 and 30³ years or more, when installed, operated and maintained in accordance with manufacturer instructions.

To ensure transparency and comparability across EPDs, a Reference Service Life (RSL) is assigned to each relevant UN CPC code within the scope of this PCR. The categories below group machinery with similar durability profiles.

- Category A – Short lifespan (0–10 years). Included compact machinery and equipment with intrinsically short operational lives due to intensive cyclic loading, high rotational stress, accelerated obsolescence of precision electronic components, or continuous exposure to corrosive laboratory/process conditions. Their reduced structural mass and compact construction provide limited refurbishment potential compared to larger industrial equipment.

³ The considered categories for the estimation of the defined RSL, include Textile and Leather products, Paper and paper products, Publishing and printing, Fabricated metal products, Ice machinery, Machinery and Equipment n.e.c., Electrical machinery n.e.c.

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- RSL shall be 5 years
- The UN CPC Codes included are:
 - Subclass 43931 Centrifuges, except cream separators and clothes dryers. Only lab/benchtop centrifuges, heavy process centrifuges are included in category C.
- Category B - Medium lifespan (10–20 years). Here is included machinery with high wear, high cycling fatigue, obsolescence risk or precision components requiring regular replacement for the whole machine.
 - The RSL shall be 15 years
 - The UN CPC Codes included are:
 - Class 4392 – Machinery for cleaning bottles, packing, and weighing, spraying machinery with the exception of subclass 43921.
 - Class 4393 – General-purpose machinery n.e.c.
 - Subclass 43931 Subclass 43931 Fans, except domestic type.
 - Subclass 43934 Automatic goods vending machines
 - Subclass 43935 Dishwashing machines, except household type
 - Class 4392 – Machinery for cleaning bottles, packing, and weighing, spraying machinery with the exception of subclass 43921.
 - Group 449 – Other special-purpose machinery and parts thereof
- Category C - Long-life machinery (20–30+ years). Large capital machinery, heavy-duty processing equipment, mechanical systems with robust construction and long asset lives.
 - The RSL shall be 25 years
 - The UN CPC Codes included are:
 - Class 4422 Machine-tools for working stone, ceramics and the like, and for working wood, bone, hard plastics and the like; presses for the manufacture of particle board and the like
 - Class 4441 Continuous-action elevators and conveyors, for goods or materials, specially designed for underground use; coal or rock cutters and tunnelling machinery; other boring and sinking machinery
 - Class 4444 Machinery for sorting, screening, separating, washing, crushing, grinding, mixing or kneading earth, stone, ores or other mineral substances, in solid form; machinery for agglomerating, shaping or moulding solid mineral fuels, ceramic paste, unhardened cements, plastering materials or other mineral products in powder or paste form; machines for forming foundry moulds of sand
 - Class 44629 - Other machinery for textile and apparel production n.e.c.
 - Class 4354 - Lifts, skip hoists, escalators and moving walkways. The scope of this PCR is limited to machinery defined as skip hoists.
 - Class 4391 – Gas generators, distilling plant, air conditioning and refrigerating equipment, filtering equipment, filtering machinery with the exception of subclass 43912 and 43913.
 - Class 4393 – General-purpose machinery n.e.c.
 - Subclass 43931 Centrifuges, except cream separators and clothes dryers. Lab/benchtop centrifuges are excluded. Refer to Category A.
 - Subclass 43932 Machinery n.e.c. for the treatment of materials by a process involving a change of temperature.
 - Subclass 43933 Calendering or other rolling machines, except for metals or glass

For class 4394 - Parts for the goods of classes 4391 to 4393, the RSL shall be the same as the RSL assigned to the parent equipment category (Classes 4391 to 4393). This ensures consistency between the lifetime of equipment and the components designed for use within it.

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PRODUCT CATEGORY CLASSIFICATION: UN CPC 435, 439, 442, 444, 446 AND 449.

The allocation of classes to categories in this PCR is not fixed. Adjustments may be necessary based on product characteristics or material composition. If you believe a class should be reassigned or split between categories, please contact the PCR moderator for clarification and approval. In some cases, a single class or subclass may be divided across categories depending on the type of material or function. For example, check subclass 43931.

Group 449 is assigned to Category B due to the wide diversity and complexity of the machinery included within this group, which leads to durability profiles that most consistently fit the medium-lifespan range defined in this PCR. In such a broad and heterogeneous group, a mid-range category represents the most technically reasonable default classification. However, Group 449 may be subdivided across categories when justified as offered above.

When the lifespan of a product differs from the RSL defined in this PCR, the RSL shall be used as the modelling period for calculating the life cycle impacts. In such cases, the number of product units required to deliver the declared service over the RSL must be determined. All modules shall be multiplied by the number of replacements needed over the RSL, while operational energy and water use (B6–B7) are calculated only once over the RSL, based on the declared operational profile. This approach avoids penalising more durable machinery, while ensuring that products with shorter lifespans reflect the higher material and end-of-life burdens associated with repeated replacements during the RSL. Therefore, when the technical lifespan differs from the RSL, the impacts to be declared in the EPD shall be calculated using the following allocation formula:

$$\text{Impact allocated} = \text{Full-time impacts} \times \frac{\text{RSL}}{\text{Lifespan}}$$

For example, if the RSL for a given product category is set at 20 years, but a specific machine has a demonstrated technical lifespan of 10 years, then two units are required to provide the service across the full RSL. Conversely, if a machine has a technical lifespan of 30 years, only two-thirds of a unit is allocated over the RSL, reflecting its longer durability and lower replacement frequency. Provided that both machines deliver the same function under comparable operational conditions (as defined in Table 3 of Section 6.4.4), the EPD results are comparable.

To avoid misinterpretation by readers, each impact results table in the EPD shall clearly indicate how to obtain the real, full-time impacts for one physical product unit and its packaging. A note shall be placed directly above each results table using the following wording: “The values in this table are allocated according to the Reference Service Life (RSL). Multiply the values in this table by x to obtain the full impacts for one product unit and its packaging.” Where x is:

$$x = \frac{\text{Lifespan}}{\text{RSL}}$$

When the technical lifespan of the product is equal to the Reference Service Life (RSL), no allocation or adjustment of impacts is required. In this case, the product delivers its full service over the entire RSL without the need for replacement, and therefore the impacts modelled for the product unit correspond directly to the allocated impacts over the RSL. Consequently, the note above the impact tables shall state that no multiplication is needed, as the declared values already represent the complete life-cycle impacts for a single product: “The RSL is equal to the technical lifespan of the product; therefore, the values in this table already represent the full impacts for one physical product unit and its packaging”.

If a FU is used, the list of the spare parts replaced throughout the RSL and its replacement frequency must be included. See section 6.4.4, for more details on what technical properties to declare.

4.3 SYSTEM BOUNDARY

The system boundary of the product life cycle determines the processes to be included or excluded in the assessment. The scope of this PCR and EPDs based on it is cradle-to-grave.

All environmentally relevant processes from “cradle to grave” should be included, so that at minimum 95% of the total energy use, mass of product content, and environmental impact is accounted for (see Section 4.5).

For more information on the setting of system boundaries, see Section A.3 of the GPI.

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:

- Upstream process (Product stage - Module A1)
 - 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.
- Core processes (Product stage - Modules A2 & A3)

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- A2: Transports to the manufacturer of the product
- A3: Manufacturing of the product⁴
- Downstream processes (Distribution and installation stage - Modules A4 & A5; Use stage - Modules B1 to B7; and End-of-life stage - Modules C1 to C4)
 - A4: Transport of the product to the building/installation site/user, including storage of product (e.g., warehouse and retail operations)
 - A5: Installation of the product, for example in a building as part of the construction of the building (e.g., including transports and waste processing of material and product losses arising in A5)
 - B1: Use/application/operation of the product (e.g., including direct emissions associated with its use)
 - B2: Maintenance of the product
 - B3: Repair of the product
 - B4: Replacement
 - B5: Refurbishment
 - B6: Energy use in use/application/operation
 - B7: Water use in use/application/operation
 - C1: De-construction/demolition/deinstallation
 - C2: Transport to waste processing and/or disposal
 - C3: Waste processing for reuse, recovery and/or recycling
 - C4: Disposal

In addition, if there is a willingness to calculate the consequences of recovered material or energy beyond the product's life cycle, they shall be reported in Module D. However, this module is non-obligatory.

In the EPD, the environmental performance of each life-cycle stage and of Module D (if voluntarily declared) shall be reported separately, as well as 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.

Sections **Error! Reference source not found.–Error! Reference source not found.** further describe the processes to include or exclude for each life-cycle stage.

Note that generation of electricity and production of fuels, steam and other energy carriers shall be assigned to the information module in which the energy carrier is used. Also note that each module shall include the waste processing of waste generated in the module up to the end-of-waste state or final disposal; except waste processing of the product itself, which is included in module C.

For more information on the division into life-cycle stages, see Section A.3.1 of the GPI.

4.3.1.1 Upstream process (Module A1)

- Module A1:
 - Extraction and production of raw materials for all main parts and components.
 - Production of electricity and fuels used in the product stage.
 - Production of semi products used in Module A3, if applicable.
 - Manufacturing of primary and secondary packaging.
 - Transport between raw material extraction and processing of materials.

⁴ These are often, but not always, the processes under operational control of the EPD owner.

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PRODUCT CATEGORY CLASSIFICATION: UN CPC 435, 439, 442, 444, 446 AND 449.

4.3.1.2 Core processes (Modules A2 and A3)

- Module A2:
 - Transport of materials/components to the manufacturing plant
- Module A3:
 - Manufacturing process for main parts and components.
 - Internal transports within the manufacturing plant.
 - Assembly, preparation and packaging of the final product.
 - Generation of electricity and production of fuels, steam and other energy carriers used in the module.
 - Maintenance (e.g., of the manufacturing machines).
 - Waste treatment of waste generated during manufacturing, including waste transport to waste manager.

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 following processes shall not be included:

- Manufacturing of production equipment, buildings and other capital goods (products used in the studied product system that are not consumed and retains their function for more than three years).
- Building, maintenance, decommissioning and disposal of service facilities.
- Business travel of personnel.
- Travel to and from work by personnel.
- Research and development activities.

Any other exclusion shall be justified.

4.3.1.3 Downstream processes (Modules A4, A5, B1, B2, B3, B4, B5, B6, B7, C1, C2, C3 and C4)

- Module A4:
 - Transport of the final product from manufacturing to the distribution platform (if applicable).
 - Transport to the final user.
- Module A5:
 - Waste treatment of the product packaging (if applicable) , including its transport to waste treatment platform.
 - Installation (if applicable), e.g. electricity consumptions for assembly of some components at the final user.

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.

- Module B1:
 - Production of chemicals and consumables.
 - Other not included in B2-B7 (e.g. cleaning, test runs, or direct emissions associated with the declared unit use).
- Module B2:
 - Maintenance of the declared unit, including energy required for the maintenance and the production of spare parts (if applicable).
- Module B3:
 - Repairing of the declared unit, including energy for repairing and the production of repaired parts (if applicable).
- Module B4:
 - Replacement of spare parts, including energy for replacement and the production of replaced parts.

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- Module B5:
 - Refurbishment of declared unit, including the energy required for refurbishment and the production of refurbished parts.
- Module B6:
 - Operational energy use (e.g. electricity or fuel), shall be evaluated by physical measurements.
- Module B7:
 - Operational water use

All modules shall be accounted for over the Reference Service Life.

If a component is required for Modules B1-B5, its production and distribution shall be included. Modules B1-B5 shall be aligned with, or refer to, the same scenario adopted for A4. Any variation shall be justified. Also, for the waste generated in Modules B1-B5, both the transport to the waste management facility (an average distance of 50 km may be assumed) and the waste treatment shall be included.

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.

- Module C1:
 - Disassembling of the product, including the impact of the disassembling process (if existent).
- Module C2:
 - Transport to the waste treatment facilities (waste processing and/or disposal).
- Module C3:
 - Waste processing for reuse, recovery and/or recycling, up to the end-of-waste state.
- Module C4:
 - Disposal of the waste

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.

4.3.1.4 Module D: Benefits and loads beyond the system boundary

Module D is a concept taken from the norm EN 15804, which includes the benefits and loads beyond the system boundary through the reuse, recovery or recycling of materials and/or energy, including the processes avoided or substituted due to these practices. The inclusion of module D is optional and limited to the availability of the necessary information. If there is willingness to calculate this module, it shall be separately declared using the example of Table 4 in Point 6.4.6. *LCA Information*. Note that module D is not part of the product system and thus not considered to be a life-cycle stage.

4.3.1.5 Excluded processes

See Section A.3.1.1 of the GPI.

4.3.1.6 Infrastructure and capital goods

See Section A.3.1.2 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 for rules on setting boundaries to other product systems.

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4.4 PROCESS FLOW DIAGRAM

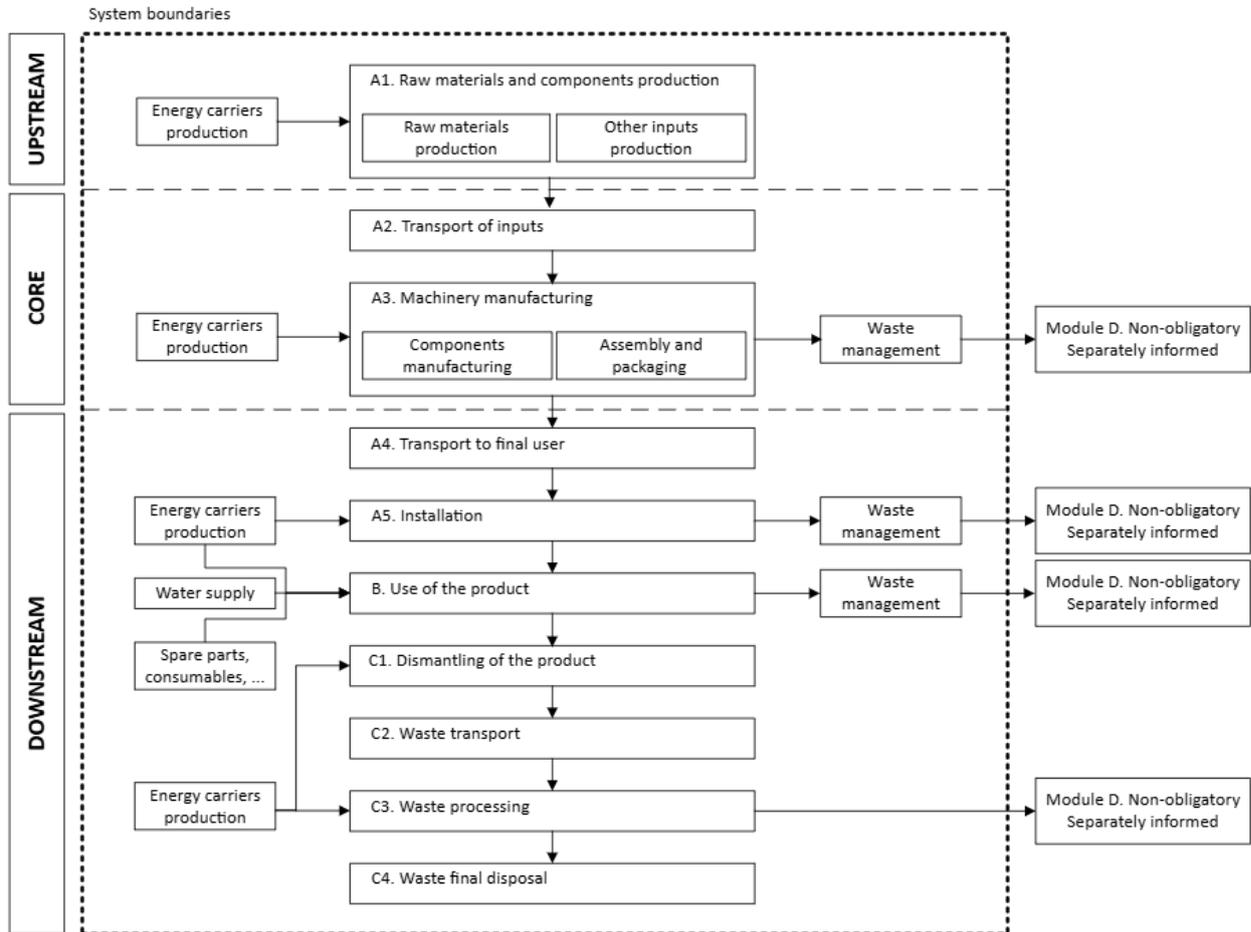


Figure 2. Process flow diagram illustrating the processes that shall be included in the product system, divided into the life-cycle stages. The illustration of processes to include may not be exhaustive.

4.5 CUT-OFF RULES

See Section A.3.3 of the GPI.

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.

4.6.2 ALLOCATION OF WASTE

See Section A.4.2 of the GPI.

Additionally, recycled materials from a scrapyards where the origin is unknown (e.g., data/statistics on materials are missing for the specific scrapyards or the country of its location), shall be assumed to be waste and allocated accordingly, unless default data provided on

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www.environdec.com/methodology says otherwise. For consistency, scrap sent to a scrapyard shall be assumed to be waste and allocated accordingly, unless default data provided on www.environdec.com/methodology says otherwise.

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.

Additionally, the reference year of the primary data shall not be more than five years old and shall be representative for the validity period of the EPD (if not, the EPD shall be updated, see Section 2.2.4). The reference year, which does not need to be a calendar year, is the latest year in which the data provider confirmed the data to be representative/valid, i.e., the end year for the most recently set validity period.⁵ This means that primary LCI data can have been collected more than five years ago, but the representativeness/validity shall have been reassessed and confirmed by the data provider (the manufacturer/service provider) within the past five years.⁶ In such reassessments, it may be that data is confirmed to be conservative compared to fully representative data, for example because it is known that the manufacturing process has improved (e.g., less material losses or lower energy use) but collected data from the past five years is missing. In such cases, the reference year can still be updated, and the data can still qualify as primary data. If this is done, it shall be described and justified in the LCA report.

4.7.3 DATA QUALITY REQUIREMENTS FOR REPRESENTATIVE SECONDARY DATA

See Section A.5.3 of the GPI.

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

No specific databases are recommended. All commercial or publicly available databases that meet the data quality requirements maybe used. The specifications and the version of the database shall be reported in the EPD.

4.8 OTHER LCA RULES

See Section A.6 of the GPI.

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

⁵ This definition of "reference year" is a specification and merge of the definitions in EN 15804, EN 15941, ISO 21930 and in the ILCD format.

⁶ This reassessment can, for example, be done based on collected metadata, such as information on the type of machinery being used in a manufacturing process. So it can be that some data (LCI and/or meta data) have been collected within five years, while some data are older than five years but has been confirmed to still be representative based on the more recently collected data. An example: the amount of electricity a machinery use and the emissions generated was measured seven years ago, but within the past five years the producer has confirmed the same machine is still in use and has provided updated data on the type of electricity used to run the machine.

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4.8.1 MASS BALANCE

See Section A.6.1 of the GPI.

4.8.2 ELECTRICITY MODELLING

See Section A.6.2 of the GPI.

The following requirement for contractual instruments in the GPI may not be possible to comply with in all markets for contractual instruments: "the contractual instrument shall ... be valid for at least the upcoming six months from the publication of the EPD." Therefore, it is replaced with the following: "is produced as close as possible to the period to which the contractual instrument is applied and comprises a corresponding timespan."

4.8.3 BIOGAS MODELLING

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 UPSTREAM PROCESS (PRODUCT STAGE - MODULE A1)

See Section A.7.1 of the GPI.

For consumer's packaging manufacturing, primary data shall be used if it is under the operational 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, secondary 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.

A product-specific EPD is valid for a defined declared product and should be the first choice (which means there is no variation in the results that need to be accounted for). When the EPD is instead based on an average or representative composition of products the results for Upstream module shall as first not differ by more than +/-10% for the GWP indicator. When the results differ more than 10% the variability must be indicated and one of the next two choices must be followed:

- The different products must be grouped in groups where its impact on GWP in Upstream module differs by less than 10%.
- To select a worst-case product, resulting in the largest environmental impact per Declared or Functional unit, as part of a product group or assortment.

4.9.2 CORE PROCESSES (PRODUCT STAGE - MODULES A2 & A3)

See Section A.7.1 of the GPI.

For Module A2, at least 95% of the declare unit weight shall be based on the actual transportation mode and distances from suppliers. The remaining minor components may be modelled according to fixed distances as follows, if no primary data are available or if it is too time consuming to be collected:

- International transport: 20000 km by ship plus 1000 km by lorry.
- Intracontinental transport: 3500 km by lorry.
- Domestic transport: 1500 km by lorry.
- Local transport: 50 km by lorry.

If this option is adopted, the choice shall reflect the representative scenario and be justified.

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4.9.3 DOWNSTREAM PROCESSES (DISTRIBUTION/INSTALLATION STAGE - MODULES A4 & A5; USE STAGE - MODULES B1 TO B7; AND END-OF-LIFE STAGE - MODULES C1 TO C4)

See A.7.2 of the GPI for Modules A4-A5. See A.7.3 of the GPI for Modules B1-B7. See A.7.4 of the GPI for Modules C1-C4.

If no primary data are available for Module A4, the following default transportation option may be used:

- International transport: 20000 km by ship plus 1000 km by lorry.
- Intracontinental transport: 3500 km by lorry.
- Domestic transport: 1500 km by lorry.
- Local transport: 50 km by lorry.

If this option is adopted, the choice shall reflect the representative scenario and be justified.

Operation consumptions and maintenance shall be modelled according to a scenario based on manufacturer technical data sheets/actual data.

If transportation distance of the waste to the waste management facilities is unknown, 50 km truck transportation shall be assumed.

Scenarios for the end-of-life stage shall be technically and economically practicable and compliant with current regulations in the relevant geographical region based on the geographical scope of the EPD. An end-of-life scenario shall be defined as example and declared into the EPD. Assumptions on the end-of life scenario shall be documented in the LCA report and the EPD. If no primary data is available, Table G.4 of EN 50693 shall be used as reference.

The potential benefit of recycling and waste treatment of the products according to the specified scenarios shall be presented in the EPD as Module D.

4.9.4 CONSEQUENCES FOR RECOVERED MATERIAL/ENERGY BEYOND THE PRODUCT LIFE CYCLE (MODULE D)

See A.7.5 of the GPI.

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

4.10 ENVIRONMENTAL PERFORMANCE INDICATORS

See Section A.8 of the GPI.

The results of the environmental performance indicators shall be declared per declared unit and per life-cycles stage (upstream, core, downstream) and, if applicable, separately for module D. If a functional unit is used, the results per this complementary FU shall be declared under a separate subsection of the Environmental performance section (see Section 6.4.7).

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.

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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.

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PRODUCT CATEGORY CLASSIFICATION: UN CPC 435, 439, 442, 444, 446 AND 449.

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.

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PRODUCT CATEGORY CLASSIFICATION: UN CPC 435, 439, 442, 444, 446 AND 449.

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.

The EPD shall specify the technical performance and other information on the product included in Table 2 and Table 3. The information is mandatory when applicable. Including Table 3 is mandatory to make product comparisons easier, and it must be presented in the exact tabular format shown in Table 3, not as text, paragraphs, or split into separate sections.

Table 2. Machine description

Information	Examples/explanations
Commercial name	
Functions	
Main components	Body
	Engine
	Tanks
	Pollution prevention and control apparatus
	Electric power accumulator

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Information	Examples/explanations
	Movement system
	Electronic components
	Others
Used fuels or energy vectors	Gasoline, diesel fuel, LPG (Liquid Petroleum Gas), CNG
Size and dimension	Length, width, height (m)
Weight	kg

Table 3. Technical information

Information	Examples/explanations
Standard used for Module B (operational conditions, maintenance, etc)	e.g., ISO XXXX, EN XXXX
Operating profile	Duty cycle, operating hours, load conditions
Environmental operating conditions	Temperature, humidity, pressure, inlet/outlet fluid conditions for heat exchangers, etc.
Power	Rated power input (W or kW)
RSL and lifespan	Declared RSL (PCR-defined) and lifespan (manufacturer or market data)
Spare parts consumption and replacement frequency	As described into the use and maintenance manuals. Declare only if not excluded under the cut-off rules. If cut-off or none expected, state: "No spare parts expected / below cut-off threshold."
Chemical products and other consumables consumption	As described into the use and maintenance manuals. Lubricants, filtration media, chemicals, cutting fluids, etc. Declare only if not excluded under the cut-off rules. If cut off or none expected, state: "No consumables expected / below cut-off threshold."

The aim of these tables is to enable effective comparison between EPDs. It is recommended that the machines being compared have similar output capacities. Previously published EPDs for a specific machine category should be used as a reference.

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.

Table 3 provides an example of how modules declared and geographical scopes may be declared. If reported in a table, the following rules apply:

- Modules/processes/life-cycle stages declared shall be noted with "X" .
- Modules/processes/life-cycle stages not declared shall be marked as "ND".
- Geographical scope shall be reported by the country code(s) (e.g. UK, FR, DE) and/or name of the region(s) (e.g. EU 27, Global).

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Table 4. Example for the reporting of modules declared and geographical scope

LIFE CYCLE STAGES	UPSTREAM	CORE		DOWNSTREAM												BEYOND PRODUCT LIFE CYCLE	
		Transport	Manufacturing	Transport	Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing		Disposal
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared																	
Geography																	

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 and, if applicable, the non-mandatory module D. If a functional unit is used, the results per this complementary FU shall be declared under a separate subsection of the Environmental performance section (see Section 6.4.7).

The declared modules may be presented individually, while also including the total sum for each product stage (upstream, core, and downstream). Alternatively, the modules may be grouped as shown in the following table; however, no further grouping beyond this structure shall be applied.

Table 5. Example for declaring the environmental performance per life cycle stage and information modules

LIFE CYCLE STAGES	UPSTREAM	CORE			DOWNSTREAM					UPSTREAM to DOWNSTREAM	BEYOND PRODUCT LIFE CYCLE
		Raw material supply	Transport	Manufacturing	Total core	Transport & Installation	Use & Operational interventions	Operational energy & water use	End-of-life stage		
Module	A1	A2	A3	A2-A3	A4-A5	B1-B5	B6-B7	C1-C4	A4-C4	A1-C4	D
Impact category indicators											
Resource use indicators											
Waste indicators											
Output flow indicators											

To avoid misinterpretation by readers, each impact results table in the EPD shall clearly indicate how to obtain the real, full-time impacts for one physical product unit and its packaging. A note shall be placed directly above each results table using the following wording: "The values in this table are allocated according to the Reference Service Life (RSL). Multiply the values in this table by x to obtain the full impacts for one product unit and its packaging." Where x is:

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$$x = \frac{\text{Lifespan}}{\text{RSL}}$$

When the technical lifespan of the product is equal to the Reference Service Life (RSL), no allocation or adjustment of impacts is required. In this case, the product delivers its full service over the entire RSL without the need for replacement, and therefore the impacts modelled for the product unit correspond directly to the allocated impacts over the RSL. Consequently, the note above the impact tables shall state that no multiplication is needed, as the declared values already represent the complete life-cycle impacts for a single product: “The RSL is equal to the technical lifespan of the product; therefore, the values in this table already represent the full impacts for one physical product unit and its packaging”.

6.4.8 ADDITIONAL ENVIRONMENTAL INFORMATION

See Section 7.4.8 of the GPI.

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.

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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
DU	Declared unit
FU	Functional unit

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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.

CEN, 2024. EN 15941:2024, Sustainability of construction works – Data quality for environmental assessment of products and construction work – Selection and use of data.

EN 50693:2019, Product category rules for life cycle assessments of electronic and electrical products and systems

PCR Under development - Industrial trucks, v1.0.0

EPD International (2024) General Programme Instructions for the International EPD System. Version 5.0.1, dated 2025-02-27. Available on www.environdec.com.

Erumban, A. A. (2008). Lifetimes of Machinery and Equipment: Evidence from Dutch Manufacturing. *Review of Income and Wealth*, 2(54), 237-268.

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 (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/TS 14067:2018, Greenhouse gases – Carbon footprint of products – Requirements and guidelines for quantification and communication.

ISO 15686-1:2011, Buildings and constructed assets — Service life planning — Part 1: General principles.

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9 VERSION HISTORY OF PCR

VERSION 1.0.0, 2010-04-19

Original version published

VERSION 2.0.0, 2010-05-12

Updated template

VERSION 3.0.0, 2014-01-24

no specific data are available for Module A4, the following default transportation option may be used:

- Compliance with General Programme Instructions 2.01.
- Recommendation to use regional or national databases, where data quality rules are respected.
- Clarification that the use phase should be based on 1.200 hours in the declared unit.
- Clarification that indicators such as noise is only applicable to the use phase.
- Recommendation to use regional or national databases, where data quality rules as respected.

VERSION 3.0.1, 2015-01-27

Editorial changes by the secretariat, without changes to LCA methodology.

VERSION 4.0.0, 2015-01-27

- Compliance with General Programme Instructions 4.0.
- EPD validity has been updated.
- 2.2.1 Product category definition and description: scope has been updated to include UN CPC group 449 (Other special-purpose machinery and parts thereof) and underlying classes, as well as machines designed for a general purpose, as defined by the UN CPC group 439 (Other general-purpose machinery and parts thereof) and underlying classes. Inclusion of Annex A Flexible printing machinery.
- 3.3 Existing PCR for the product category: List of other PCRs available has been updated.
- 4.1 Functional unit/declared unit: modification from 1200 working hours (Reference service life) to 1 product unit, including the proportional impact of the raw materials production, manufacturing, transportation and end of life. The function of the product shall be declared to allow comparability of results.
- 4.3.1 Life cycle stages have been updated including consumption of chemicals and consumables during use phase. Module D explanation has been included
- 4.3.1.2 Core processes system boundaries: the description of the manufacturing parts to be included has been eliminated. Process waste that is deposited in landfill is included in the system boundaries. In this PCR version is not mandatory to declare waste that is deposited in landfill as hazardous waste.
- 4.4 System Diagram: Diagram was updated including processes described in life cycle stages. Module D reference has been included.
- 4.6 Allocation rules: co-product allocation rules have been clarified.
- 4.10.3 Other calculation rules and scenarios; Downstream module: modification of the processes included in the Downstream module.
- 4.7 Recommended databases for generic data: modification of the recommendation of the LCA databases to be used.
- 4.8 Specific impact indicators were removed. Reference to <https://environdec.com/resources/indicators> has been included.
- 5.4.6 Additional Environmental Performance: More comprehensive guidance has been included.

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- Annex A: FU, RSL and System diagram were updated to provide specific guidance, based on market standard

VERSION 4.0.1, 2025- 12-12

- Validity was extended for 6 months until 2026-10-04 as a new version was being developed and to ensure stability in the market.

VERSION 5.0.0, 20XX-XX-XX

- Compliance with General Programme Instructions 5.0.1.
- 2.2.1 Product category definition and description: scope has been updated to include UN CPC group 444 (Machinery for mining, quarrying and construction, and parts thereof) and UN CPC class 4354 group 435 (Only for skip hoists).
- Indication of a default transportation option for core and downstream stages
- Annex for printing machines was removed

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PRODUCT CATEGORY RULES (PCR)

PUBLICATION DATE 20YY-MM-DD (TO BE ADDED BY THE SECRETARIAT)

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PRODUCT CATEGORY CLASSIFICATION: UN CPC 435, 439, 442, 444, 446 AND 449.

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