

PROFESSIONAL CLEANING SERVICES FOR PASSENGER TRAINS

PRODUCT CATEGORY CLASSIFICATION: UN CPC 85330

PCR 2017:02

VERSION 2.0

VALID UNTIL: 2026-07-15



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## 1 INTRODUCTION

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

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

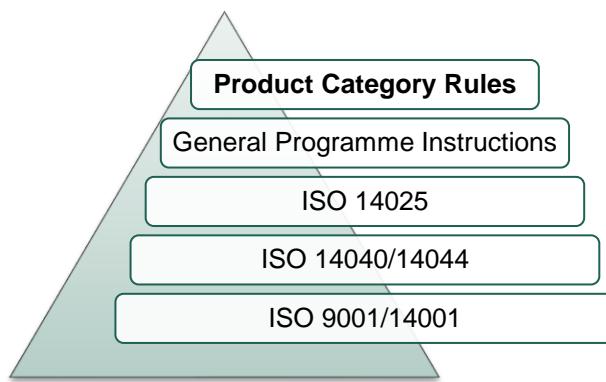


Figure 1 The hierarchy between PCRs, standards and other documents.

Within the present PCR, the following terminology is adopted:

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

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

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

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

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

<sup>1</sup> Type III environmental declarations in the International EPD® System are referred to as EPDs, Environmental Product Declarations.

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## 2 GENERAL INFORMATION

### 2.1 ADMINISTRATIVE INFORMATION

Name:	Professional cleaning services for passenger trains
Registration number and version:	2017:02, version 2.0
Programme:	 The International EPD® System
Programme operator:	EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden. Website: <a href="http://www.environdec.com">www.environdec.com</a> E-mail: <a href="mailto:info@.environdec.com">info@.environdec.com</a>
PCR Moderator:	Gian Franco Graziano, Rekeep S.p.A. <a href="mailto:GGraziano@rekeep.com">GGraziano@rekeep.com</a>
PCR Committee:	Rekeep S.p.A. NTV - Nuovo Trasporto Viaggiatori S.p.A Dr. Paolo Simon Ostan
Date of publication and last revision:	2022-07-15 (Version 2.0)  Version 1.0 was published 2017-05-12. A version history is available in Section 8
Valid until:	2026-07-15
Schedule for renewal:	A PCR is valid for a pre-determined time period to ensure that it is updated at regular intervals. When the PCR is about to expire, the PCR Moderator shall initiate a discussion with the Secretariat how to proceed with updating the PCR and renewing its validity.  A PCR may be also be updated without prolonging its period of validity, provided significant and well-justified proposals for changes or amendments are presented.  See <a href="http://www.environdec.com">www.environdec.com</a> for the latest version of the PCR.  When there has been an update of the PCR, the new version should be used to develop EPDs. The old version may however be used for 90 days after the publication date of the new version, as long as the old version has not expired.
Standards conformance:	<ul style="list-style-type: none"><li>General Programme Instructions of the International EPD® System, version 4.0, based on ISO 14025 and ISO 14040/14044</li></ul>
PCR language(s):	At the time of publication, this PCR was available in English. If the PCR is available in several languages, these are available at <a href="http://www.environdec.com">www.environdec.com</a> . In case of translated versions, the English version takes precedence in case of any discrepancies.

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## 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 professional cleaning services for passenger trains and the declaration of this performance by an EPD. The product category corresponds to UN CPC 85330 "General cleaning services":

Division 85 - Support services			
Group	Class	Subclass	Description
853			Cleaning services
	8533	85330	<b>General cleaning services</b>

See <https://unstats.un.org/unsd/classifications/Family/Detail/1074> for additional information about the product category.

The services included in the product category definition are all the professional cleaning services for passenger trains. Cleaning services are intended for both internal and external surfaces of the passenger coaches. The service is provided in areas made available from the customer in the main cities of the rail network and/or in their proximity.

Passenger trains may be broadly divided into three major types:

- **Regional trains:** trains operating between towns and cities with frequent stops at all intermediate stations over short distances
- **Inter-city trains:** trains with limited stops and comfortable coaches to serve long-distance travel.
- **High-speed trains:** special inter-city trains that operate at much higher speeds than conventional railways

Cleaning services applied to other types of passengers rolling stock such as metro, light rail and tram are not under the purpose of this PCR document.

Environmental results related to cleaning services applied to different type of train (regional, inter-city, high speed) shall be calculated and reported in separate EPDs. Only environmental results of EPD referring to same type of train can be compared.

The comparison of different EPDs shall be carried out taking into account:

- The level of cleanliness provided by the cleaning services
- The dimensions of the coach taken as functional unit for the LCA study

### 2.2.2 SPECIFICATION OF THE SERVICE

The followings information shall be reported in the EPD:

- train(s) type and size considered in the LCA;
- length and number of seats of the passenger coach taken as reference;
- a description of the periodic cleaning activities done during the year for the specific train type, including their frequency and main operations. The table reported in the Appendix A shall be used.
- the maximum value of grey<sup>2</sup>, assessed by the Bacharach scale, admitted for the rigid surfaces (e.g., tables, stainless steel parts, etc.) after the execution of the cleaning service, if applicable.

The EPD may also include additional verified information relevant for the intended application of the EPD, such as public procurement.

### 2.2.3 GEOGRAPHICAL SCOPE

This PCR may be used globally.

<sup>2</sup> The maximum value of grey admitted refers to the contractual agreement between the client(s) and the cleaning service supplier.

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## 2.2.4 EPD VALIDITY

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

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

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

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

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### 3 PCR REVIEW AND BACKGROUND INFORMATION

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

#### 3.1 OPEN CONSULTATION

##### 3.1.1 VERSION 1.0

This PCR was available for open consultation from 2016-10-14 until 2016-12-14, during which any stakeholder was able to provide comments by contacting the PCR Moderator and/or the Secretariat.

A total of 203 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.

##### 3.1.2 VERSION 2.0

This PCR was available for open consultation from 2021-08-12 until 2021-10-12, during which any stakeholder was able to provide comments by contacting the PCR Moderator and/or the Secretariat.

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

- Greendesk AB

#### 3.2 PCR REVIEW

##### 3.2.1 VERSION 1.0

PCR review panel:	<p>The Technical Committee of the International EPD® System. A full list of members is available at <a href="http://www.environdec.com">www.environdec.com</a>. The review panel may be contacted via <a href="mailto:info@.environdec.com">info@.environdec.com</a>.</p> <p>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.</p>
Chair of the PCR review:	Maurizio Fieschi
Review dates:	2016-12-14 – 2016-04-01

##### 3.2.2 VERSION 2.0

PCR review panel:	<p>The Technical Committee of the International EPD® System. A full list of members is available at <a href="http://www.environdec.com">www.environdec.com</a>. The review panel may be contacted via <a href="mailto:info@.environdec.com">info@.environdec.com</a>.</p> <p>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.</p>
Chair of the PCR review:	Claudia A. Peña
Review dates:	2022-04-24 until 2022-06-06

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### 3.3 EXISTING PCRS FOR THE PRODUCT CATEGORY

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

- International EPD® System. [www.environdec.com](http://www.environdec.com).

Table 1 lists the identified PCRs and other standardized methods.

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

NAME OF PCR/STANDARD	PROGRAMME/STANDARDISATION BODY	REGISTRATION NUMBER, VERSION NUMBER/DATE OF PUBLICATION	SCOPE
PROFESSIONAL CLEANING SERVICES FOR BUILDINGS	EPD® International AB	PCR 2011:03, v.3.0, 2021-05-06	No overlap in scope

### 3.4 REASONING FOR DEVELOPMENT OF PCR

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

The motivation to develop this PCR is based on the harmonization of methodological rules for the LCA studies regarding the professional cleaning services for passenger trains and the declaration of the environmental performances with an EPD. No existing PCR was found that covered this product group.

### 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 internal LCA studies commissioned by Rekeep S.p.A.:

- Simon Ostan P. (2020), LIFE CYCLE ASSESSMENT (LCA) SERVIZIO DI PULIZIA OSPEDALIERO REKEEP S.P.A, Rev.1, 26/10/2020
- Simon Ostan P. (2021), SCREENING LIFE CYCLE ASSESSMENT (LCA) SERVIZIO DI PULIZIA TRENI REKEEP S.P.A, Rev.0, 05/06/2021
- Consorzio stabile CMF (2021), Carbon Footprint di prodotti detergenti per il servizio di pulizia treni, Rev.0, 09/10/2021

Moreover the existing PCR 2011:03 for the professional cleaning services for buildings was used to develop this PCR document, supporting the choice of system boundaries, allocation methods, impact categories, etc., in the PCR.

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

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

### 4.1 FUNCTIONAL UNIT

The functional unit is one passenger coach kept cleaned in a period of 1 year.

By applying this functional unit the following rules shall be taken into consideration:

- The level of cleanliness refers to the contractual agreement between the client(s) and the cleaning service supplier: for assuring cleanliness, the cleaning service activities can be provided periodically (daily, weekly, etc.), but the functional unit is to be considered cleaned during the fixed period of 1 year, regardless of periodicity.
- Professional cleaning services are provided for different types of passenger coach (e.g. 1st class, 2nd class). The results shall be referred to a representative average passenger coach for the professional cleaning service, per type of train (regional, inter-city, high-speed) separately. "Representative" is referred to the different types of coach while "average" refers to the inventory data. The EPD shall include appropriate considerations regarding representativeness and relevance of the selected coach used as functional unit.
- Inventory data may be collected in a single site/city where the service is provided or in several sites/cities. If several sites/cities are involved, an average shall be defined by accounting for the annual number of trains kept cleaned as the weighting factor. A list of all the sites/cities involved in data collection shall be reported in the EPD.
- A passenger coach with toilet(s) shall be considered.

The functional unit shall be stated in the EPD. The environmental impact shall be given per functional unit.

A description of the function of the service should be included in the EPD®, if relevant.

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

Not applicable for this product category.

### 4.3 SYSTEM BOUNDARY

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

#### 4.3.1 LIFE-CYCLE STAGES

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

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

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

##### 4.3.1.1. Upstream processes

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

- extraction and processing of raw materials (e.g. steel, plastics, etc.) for the production of the machineries and equipment (e.g. washing machine, vacuum cleaner, trolley, etc.) used in the cleaning service

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- extraction and processing of raw materials used in the production of consumables, such as chemicals and materials (e.g. trays, buckets, bag holders, broom, brush, gloves, etc.) used in supplying the cleaning service
- recycling processes of secondary materials from other product life cycles,
- transports needed for the upstream processes

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

Production of machinery, equipment and consumables components and their transport to the production site may be included, if relevant.

#### 4.3.1.2. Core processes

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

- external transportation to the core processes of the machineries, equipment, chemicals and other consumables. Transportation shall be considered only in case is carried out constantly in supplying the service
- supply of the service: use of the machineries, equipment and any other support involved in the cleaning service (electricity, fuels and water)
- ordinary maintenance<sup>3</sup> of machineries and equipment
- end-of-life treatment of waste generated in the core processes during the supply of the cleaning service, even if carried out by third parties, including transportation
- Water treatment of mixtures prepared for the cleaning service and the washing machines wastewater

Core processes not listed may also be included.

The following processes shall not be included:

- manufacturing of production equipment, buildings and other capital goods,
- extraordinary cleaning activities such as the graffiti removal
- manufacturing of products and materials that are not directly used for the cleaning service activities (e.g. hand soaps, toilet papers, wipes, etc.)
- water used for the filling of the toilet tanks
- treatment of waste generated by the train passengers
- treatment of waste and wastewater of the toilet
- business travel of personnel,
- travel to and from work by personnel, and
- research and development activities.

#### 4.3.1.3. Downstream processes

The downstream processes may include qualitative or quantitative information about recycling or handling (end of life) of capital goods (e.g. machineries and equipment).

The use of qualitative or quantitative information shall be clearly declared in the EPD.

### 4.3.2 OTHER BOUNDARY SETTING

#### 4.3.2.1. Boundary towards nature

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

<sup>3</sup> Maintenance activities more frequent than every three years.

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#### 4.3.2.2. Boundary towards other technical systems

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

See Section 4.6.2 for further guidance.

#### 4.3.2.3. Temporal boundary

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

#### 4.3.2.4. Geographical boundary

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

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## 4.4 SYSTEM DIAGRAM

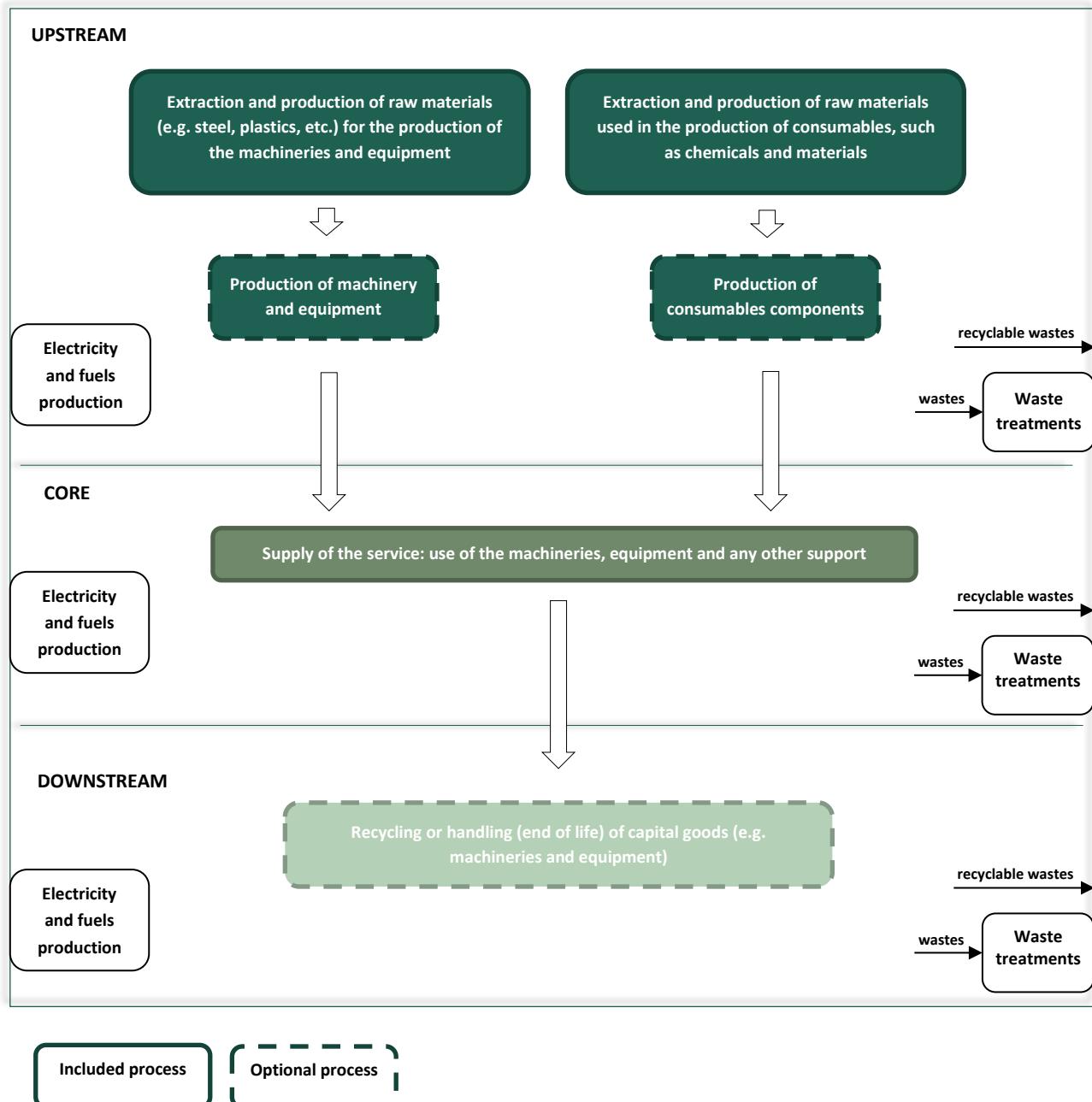


Figure 2 System diagram illustrating the processes that are included in the product system, divided into upstream, core and downstream processes.

## 4.5 CUT-OFF RULES

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

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

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

## 4.6 ALLOCATION RULES

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

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

### 4.6.1 CO-PRODUCT ALLOCATION

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

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

Allocation problems in the case of professional cleaning services for passenger trains may arise when specific data are not available for the train under analysis, regarding the consumption of energy, water and consumables. The following hierarchy shall be applied for the consumption of energy, water and consumables:

1. Allocation shall be avoided by using specific data referred to the train/coach under study, (e.g. daily cleaning instructions and worksheets, measurements of the quantities of products used, time spent for providing the cleaning operation, etc.)
2. If only general aggregated data are available (e.g. referred to many different types of train) the consumptions shall be partitioned by using physical relationships and, in particular, the surface area of the trains which are subject to the cleaning service.

### 4.6.2 ALLOCATION OF WASTE TREATMENT PROCESSES

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

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

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

## 4.7 DATA QUALITY REQUIREMENTS AND SELECTION OF DATA

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

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- specific data (also referred to as “primary data” or “site-specific data”):
  - data gathered from the actual manufacturing plant where product-specific processes are carried out;
  - actual data from other parts of the life cycle traced to the product under study, for example site-specific data on the production of materials or generation of electricity provided by contracted suppliers, and transportation data on distances, means of transportation, load factor, fuel consumption, etc., of contracted transportation providers; and
  - LCI data from databases on transportation and energy ware that is combined with actual transportation and energy parameters as listed above.
- generic data (sometimes referred to as “secondary data”), divided into:
  - selected generic data: data (e.g. commercial databases and free databases) that fulfil prescribed data quality requirements for precision, completeness, and representativeness (see below Section 4.7.1),
  - proxy data: data (e.g. commercial databases and free databases) that do not fulfil all of the data quality requirements of “selected generic data”.

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

#### 4.7.1 RULES FOR USING GENERIC DATA

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

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

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

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

#### 4.7.2 EXAMPLES OF DATABASES FOR GENERIC DATA

No specific databases are recommended for generic data.

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

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

##### 4.7.3.1. Upstream processes

- Data referring to processes and activities upstream in a supply chain over which an organisation has direct management control shall be specific and collected on site.
- Data referring to contractors that supply main parts, packaging, or main auxiliaries should be requested from the contractor as specific data, as well as infrastructure, where relevant.

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- Data on transport of main parts and components along the supply chain to a distribution point (e.g. a stockroom or warehouse) where the final delivery to the manufacturer can take place, should be specific and based on the actual transportation mode, distance from the supplier, and vehicle load.
- In case specific data is lacking, selected generic data may be used. If this is also lacking, proxy data may be used (see Section 4.7).
- For upstream processes modelled with specific data, generation of electricity used shall be accounted for in this priority:
  1. Specific electricity mix as generated, or purchased from an electricity supplier, demonstrated by a Guarantee of Origin or similar as provided by the electricity supplier.
  2. Residual electricity mix of the electricity supplier on the market.
  3. Residual electricity mix on the market.
  4. Electricity consumption mix on the market.

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

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

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

#### 4.7.3.2. Core processes

- The lifetime of the machineries used for the cleaning service activities shall be set at 10 years if no detailed information is provided by the manufacturer.
- If several sites are involved, an average shall be defined by accounting for the annual number of trains kept cleaned as the weighting factor. The average profile shall be created separately per type of train (regional, inter-city, high-speed). A list of all the sites involved in data collection shall be provided in the EPD. The EPD shall include appropriate consideration regarding representativeness and relevance of the selected sites for the analysis.
- Transport from the final delivery point of raw materials, chemicals, main parts, and components (see above regarding upstream processes) to the manufacturing plant/place of service provision should be based on the actual transportation mode, distance from the supplier, and vehicle load, if available.
- Services: Specific data shall be used for the consumption of materials, chemicals, steam, heat, electricity, etc., necessary for execution of the service
- For electricity used in the core processes, generation of electricity used shall be accounted for in this priority:
  1. Specific electricity mix as generated, or purchased from an electricity supplier, demonstrated by a Guarantee of Origin or similar as provided by the electricity supplier.
  2. Residual electricity mix of the electricity supplier on the market.
  3. Residual electricity mix on the market.
  4. Electricity consumption mix on the market. This option shall not be used for electricity used in processes over which the manufacturer (EPD owner) has direct control<sup>4</sup>.

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

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

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

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

<sup>4</sup> For electricity markets without trade of Guarantees of Origin (or similar), the residual mix will, however, be identical to the consumption mix.

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#### 4.7.3.3. Downstream processes

- The use of electricity in the region/country where the product is used (as specified in the geographical scope of the EPD) shall be accounted for in the following priority:
  1. Residual electricity mix on the market.
  2. Electricity consumption mix on the market.

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

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

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

- The downstream module shall be based on relevant scenarios for the geographical area in which the EPD® is valid.
- Scenarios for the end-of-life stage shall be technically and economically practicable and compliant with current regulations in the relevant geographical region based on the geographical scope of the EPD. Key assumptions regarding the end-of-life stage scenario shall be documented in the LCA report.

#### 4.7.4 DATA QUALITY DECLARATION

EPDs may include a declaration of the quality of data used in the LCA calculations.

### 4.8 ENVIRONMENTAL PERFORMANCE INDICATORS

The EPD shall declare the default environmental performance indicators and their methods as described at the website ([www.environdec.com/indicators](http://www.environdec.com/indicators)), which includes both inventory indicators and indicators of potential environmental impact. The source and version of the impact assessment methods and characterisations factors used shall be reported in the EPD. Alternative regional impact assessment methods and characterisation factors may be calculated and displayed in addition to the default list. If so, the EPD shall contain an explanation of the difference between the different sets of indicators, as they may appear to the reader to display duplicate information.

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

Apart from the required inventory indicators, other inventory data may also be declared in the EPD, if relevant and useful for EPD users. Such data shall not be declared in the main body of the EPD, but in an annex.

### 4.9 INCLUDING MULTIPLE SERVICES IN THE SAME EPD

#### 4.9.1 SERVICES FROM THE SAME COMPANY

Cleaning services, based on similar level of cleanliness from a single or several sites/cities and clients where the service is provided covered by the same PCR and provided by the same company with the same major steps in the core processes may be included in the same EPD if none of the declared environmental performance indicators differ by more than 10% between any of the included cleaning services. The results for the environmental performance indicators of one representative cleaning service shall be declared according to Section 5.4.4. The choice of representative service shall be justified in the EPD, using, where applicable, statistical parameters.

Inventory data may be collected for the professional cleaning services provided to a single client or to several clients. In case several clients are involved in data collection a list of all the clients shall be reported in the EPD. If only one client is involved in the data collection, a specific EPD may be developed and the client's name may be reported on the front page of the declaration.

#### 4.9.2 SECTOR EPDS

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

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

The following information shall also be included a Sector EPD:

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

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## 5 CONTENT AND FORMAT OF EPD

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

The EPD content shall:

- be in line with the requirements and guidelines in ISO 14020 (Environmental labels and declarations – General principles),
- be verifiable, accurate, relevant and not misleading, and
- not include rating, judgements or direct comparison with other products<sup>5</sup>.

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

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

### 5.1 EPD LANGUAGES

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

### 5.2 UNITS AND QUANTITIES

The following requirements apply for units and quantities:

- The International System of Units (SI units) shall be used where available, e.g., kilograms (kg), Joules (J) and metres (m). Reasonable multiples of SI units may be decided in the PCR to improve readability, e.g., grams (g) or megajoules (MJ). The following exceptions apply:
  - Resources used for energy input (primary energy) should be expressed as kilowatt-hours (kWh) or megajoules (MJ), including renewable energy sources, e.g., hydropower, wind power and geothermal power.
  - Water use should be expressed in cubic metres (m<sup>3</sup>)
  - Temperature should be expressed in degrees Celsius (°C),
  - Time should be expressed in the units most practical, e.g., seconds, minutes, hours, days or years.
  - Results of the environmental performance indicators shall be expressed in the units prescribed by the impact assessment methods, e.g. kg CO<sub>2</sub> equivalents.
- Three significant figures<sup>6</sup> should be adopted for all results. The number of significant digits shall be appropriate and consistent.
- Scientific notation may be used, e.g. 1.2E+2 for 120, or 1.2E-2 for 0.012.
- The thousand separator and decimal mark in the EPD shall follow one of the following styles (a number with six significant figures shown for illustration):
  - SI style (French version): 1 234,56
  - SI style (English version): 1 234.56

In case of potential confusion or intended use of the EPD in markets where different symbols are used, the EPD shall state what symbols are used for thousand separator and decimal mark.

- Dates and times presented in the EPD should follow the format in ISO 8601. For years, the prescribed format is YYYY-MM-DD, e.g., 2017-03-26 for March 26<sup>th</sup>, 2017.
- The result tables shall:

<sup>5</sup> Therefore, results of normalization are not allowed to be reported in the EPD.

<sup>6</sup> Significant figures are those digits that carry meaning contributing to its precision. For example with two significant digits, the result of 123.45 shall be displayed as 120, and 0.12345 shall be displayed as 0.12. In scientific notation, these two examples would be displayed as 1.2\*10<sup>2</sup> and 1.2\*10<sup>-2</sup>.

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- Only contain values or the letters "ND" (Not Declared). It is not possible to specify ND for mandatory indicators. ND shall only be used for voluntary parameters that are not quantified because no data is available.<sup>7</sup>
- Contain no blank cells, hyphens, less than or greater than signs or letters (except "ND").
- Use the value "0" only for parameters that have been calculated to be zero.
- Footnotes shall be used to explain any limitation to the result value.

## 5.3 USE OF IMAGES IN EPD

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

## 5.4 EPD REPORTING FORMAT

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

- Cover page (see Section 5.4.1)
- Programme information (see Section 5.4.2)
- Product information (see Section 5.4.3)
- Environmental performance (see Section 5.4.4)
- Additional environmental information (see Section 5.4.5)
- Additional social and economic information (see Section 5.4.6)
- References (see Section 5.4.8)

The following sections shall be included, if relevant:

- Differences versus previous versions (see Section 5.4.7)
- Executive summary in English (see Section 5.4.9)

### 5.4.1 COVER PAGE

The cover page shall include:

- Product name and image
- Name and logotype of EPD owner
- The text "Environmental Product Declaration" and/or "EPD"
- Programme: The International EPD® System, [www.environdec.com](http://www.environdec.com)
- Programme operator: EPD International AB
- Logotype of the International EPD® System
- EPD registration number as issued by the programme operator<sup>8</sup>
- Date of publication (issue): 20XX-YY-ZZ
- Date of revision: 20XX-YY-ZZ, when applicable
- Date of validity: 20XX-YY-ZZ
- A note that *"An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at [www.environdec.com](http://www.environdec.com)."*

<sup>7</sup> This requirement does not intend to give guidance on what indicators are mandated ("shall") or voluntary.

<sup>8</sup> The EPD shall not include a "registration number" if such is provided by the certification body, as this may be confused with the registration number issued by the programme operator.

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- A statement of conformity with ISO 14025.
- For EPDs covering multiple products: a statement that the EPD covers multiple products and a list of all products covered by the EPD.
- For Sector EPDs: a statement that the EPD is a Sector EPD.

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

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

#### 5.4.2 PROGRAMME INFORMATION

The programme information section of the EPD shall include:

- Address of programme operator: *EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden, E-mail: [info@environdec.com](mailto:info@environdec.com)*
- The following statement on the requirements for comparability of EPDs, adapted from ISO 14025: *"EPDs within the same product category but from different programmes may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison."*
- A statement that "The comparison of different EPDs shall be carried out taking into account:
  - The type of trains (regional, inter-city, high speed)
  - The dimensions of the coach taken as functional unit for the LCA study
  - The level of cleanliness provided by the cleaning services"
- A statement that the EPD owner has the sole ownership, liability and responsibility of the EPD
- Information about verification<sup>9</sup> and the PCR in a table with the following format and contents:

Product category rules (PCR): <name, registration number, version and UN CPC code(s)>
PCR review was conducted by: <name and organisation of the review chair, and information on how to contact the chair through the programme operator>
Independent third-party verification of the declaration and data, according to ISO 14025:2006:
<input type="checkbox"/> EPD process certification <input type="checkbox"/> EPD verification <input type="checkbox"/> Pre-verified tool
<i>In case of certification bodies:</i> Accredited by: <name of the accreditation body and accreditation number, if applicable>.
<i>In case of individual verifiers:</i> <Name, and organisation of the individual verifier. The signature may also be included> Approved by: The International EPD® System
The procedure for follow-up during EPD validity, as defined in the GPI, involves third-party verifier:
<input type="checkbox"/> Yes <input type="checkbox"/> No

<sup>9</sup> If the EPD has been verified by an approved individual verifier who has received contractual assistance from a certification body that is not accredited, this certification body shall not be included in this table.

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### 5.4.3 SERVICE INFORMATION

The product information section of the EPD shall include:

- address and contact information to EPD owner,
- description of the organisation. This may include information on products- or management system-related certifications (e.g. ISO 14024 Type I environmental labels, ISO 9001- and 14001-certificates and EMAS-registrations) and other relevant work the organisation wants to communicate (e.g. SA 8000, supply-chain management and social responsibility),
- name and location of site(s) where the service is performed,
- service identification by name, and an unambiguous identification of the service by standards, concessions or other means,
- identification of the service according to the UN CPC scheme system. Other relevant codes for service classification may also be included, e.g.
  - Common Procurement Vocabulary (CPV),
  - United Nations Standard Products and Services Code® (UNSPSC),
  - Classification of Products by Activity (NACE/CPA),
  - Australian and New Zealand Standard Industrial Classification (ANZSIC), or
  - Global Trade Item Number (GTIN).
- a description of the service:
  - train(s) type and size considered in the LCA,
  - length and number of seats of the passenger coach taken as reference,
  - a description of the periodic cleaning activities done during the year for the specific train type, including their frequency and main operations. The table reported in the Appendix A shall be used,
- a description of the background system, including the main technological aspects,
- for EPDs covering multiple products: a description of the selection of products/sites, a list of contributing manufacturers (if Sector EPD), etc. (see Section 4.9),
- geographical scope of the EPD, i.e., for which geographical location(s) the service's performance has been calculated,
- functional unit,
- declaration of the year(s) covered by the data used for the LCA calculation and other relevant reference years,
- reference to the main database(s) for generic data and LCA software used, if relevant,
- system diagram of the processes included in the LCA, divided into the life cycle stages,
- description if the EPD system boundary is "cradle-to-gate", "cradle-to-gate with options" or "cradle-to-grave",
- information on which life-cycle stages are not considered (if any), with a justification of the omission, and
- references to any relevant websites for more information or explanatory materials.

This section may also include:

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

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## 5.4.4 ENVIRONMENTAL PERFORMANCE

### 5.4.4.1. Environmental impacts

The EPD shall declare the environmental impact indicators, per functional unit, per life-cycle stage and in aggregated form, using the default impact categories, impact assessments methods and characterisation factors available at [www.environdec.com/indicators](http://www.environdec.com/indicators). The source and version of the impact assessment methods and characterisation factors used shall be reported in the EPD.

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

### 5.4.4.2. Use of resources

The EPD shall declare the indicators for resource use listed at [www.environdec.com/indicators](http://www.environdec.com/indicators) per functional unit, per life-cycle stage and in aggregated form.

### 5.4.4.3. Waste production and output flows

Waste generated along the whole life cycle production chains shall be treated following the technical specifications described in the GPI. The EPD shall declare the indicators for waste production and output flows as listed at [www.environdec.com/indicators](http://www.environdec.com/indicators) per functional unit, per life-cycle stage and in aggregated form.

## 5.4.5 ADDITIONAL ENVIRONMENTAL INFORMATION

The EPD shall declare additional environmentally relevant information not derived from the LCA-based calculations. The following indicators shall be reported in the EPD:

- Direct use of electrical energy in the core processes, in kWh per functional unit

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

- Direct use of toxic substances in the core process, in kg per functional unit

Information such as the presence of heavy metals and Polycyclic Aromatic Hydrocarbon (PAH), chemical products classified as carcinogenic, toxic to reproduction or causing inheritable damage should be provided by the organisation. The classification shall be in accordance with the applicable laws where the service is provided (e.g. in Europe regulations regarding the classification and labelling of hazardous chemicals in EU classification system 1999/45/EC, with amendments).

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

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

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#### 5.4.6 ADDITIONAL SOCIAL AND ECONOMIC INFORMATION

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

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

#### 5.4.7 DIFFERENCES VERSUS PREVIOUS VERSIONS

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

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

#### 5.4.8 REFERENCES

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

#### 5.4.9 EXECUTIVE SUMMARY IN ENGLISH

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

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## 6 LIST OF ABBREVIATIONS

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

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## 7 REFERENCES

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

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

EPD International (2021) General Programme Instructions for the International EPD® System. Version 4.0, dated 2021-03-29. [www.environdec.com](http://www.environdec.com).

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

ISO (2004) ISO 8601:2004 Data elements and interchange formats – Information interchange – Representation of dates and times.

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

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

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

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

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

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

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

ISO (2016a) ISO 21067-1:2016, Packaging – Vocabulary – Part 1: General terms.

ISO (2016b) ISO 14021:2016, Environmental labels and declarations - Self-declared environmental claim (Type II environmental labelling).

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

ISO (2018) ISO 14024:2018, Environmental labels and declaration – Type I environmental labelling – Principles and procedures.

PCR 2011:03, version 3.0, 2021-05-06 – PROFESSIONAL CLEANING SERVICES FOR BUILDINGS

Simon Ostan P. (2020), LIFE CYCLE ASSESSMENT (LCA) SERVIZIO DI PULIZIA OSPEDALIERO REKEEP S.P.A, Rev.1, 26/10/2020

Simon Ostan P. (2021), SCREENING LIFE CYCLE ASSESSMENT (LCA) SERVIZIO DI PULIZIA TRENI REKEEP S.P.A, Rev.0, 05/06/2021

Consorzio stabile CMF (2021), Carbon Footprint di prodotti detergenti per il servizio di pulizia treni, Rev.0, 09/10/2021

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## 8 VERSION HISTORY OF PCR

### VERSION 1.0, 2017-05-12

Original version.

### VERSION 1.1, 2019-02-13

Updated in accordance with GPI 3.0 and new PCR basic module.

### VERSION 1.11, 2019-09-06

- Clarified terms of use
- Editorial changes

### VERSION 2.0, 2022-07-15

Updated in accordance with GPI 4.0 and new PCR template.

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## APPENDIX A: CLEANING ACTIVITIES DESCRIPTION

cleaning operation	Cleaning procedure description	frequency (e.g. daily, weekly, etc.)
<i>e.g. basic cleaning</i>	<i>e.g. toilette cleaning, waste removal, sweeping and washing of floors, dusting of the parts in contact with customers. It aims to remove dirt, smudges and dust accumulated on the floors and...</i>	<i>e.g. daily</i>
<i>e.g. Ordinary disinfection</i>	<i>e.g. It aims to prevent infestation of crawling insects or other insects potentially vectors of pathogens on the rolling stock.</i>	<i>e.g. monthly</i>

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