EPD
INTERNATIONAL EPD SYSTEM

ESCALATORS AND MOVING WALKS

PRODUCT GROUP CLASSIFICATION: UN CPC 4354

C-PCR-025 (TO PCR 2019:14)
VERSION 1.0.0

VALID UNTIL: 2028-06-08

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1 INTRODUCTION

1.1 GENERAL

This document constitutes complementary Product Category Rules (c-PCR) for developing Environmental Product Declarations (EPD) in the framework of the International EPD System: a programme for EPDs[1] according to ISO 14025, ISO 14040, ISO 14044, and product-specific standards, such as EN 15804, EN 15941 and ISO 21930 for construction products.[2] developed in the framework of the International EPD System: a programme for type III environmental declarations[3] according to ISO 14025:2006. EPDs are voluntary documents for a company or an industry association to present transparent, consistent, and verifiable information about the environmental performance of their products (goods or services).

The General Programme Instructions (GPI), publicly available on www.environdec.com, includes the rules for the overall administration and operation of the programme and the basic rules for developing EPDs registered in the programme. A PCR complements the GPI and the normative standards by providing specific rules and guidelines for developing an EPD for one or more specific product categories (see Figure 1), thereby enabling the generation of consistent EPDs within a product category.

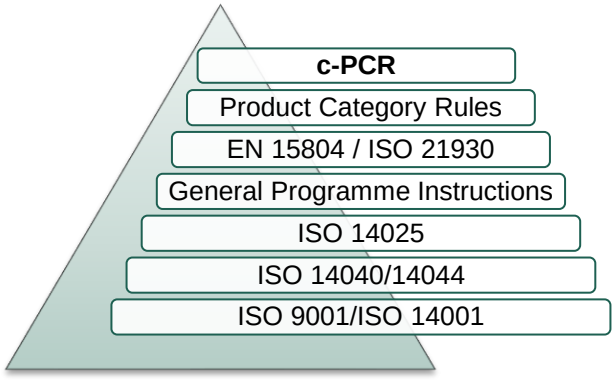

Figure 1 This c-PCR in relation to the hierarchy of standards and other documents.

The present c-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, normative standards, and PCR 2019:14 Construction products.

The latest version of the PCR is available on www.environdec.com.

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

Stakeholder feedback on PCRs is very much encouraged. Any comments on this PCR document may be sent directly to the PCR Moderator during its development or during the period of validity.

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

1 Termed type III environmental declarations in ISO 14025.

2 When standards are referred to in this document, the version listed in Section 7 is intended unless otherwise stated.

3 Type III environmental declarations in the International EPD System are referred to as EPD, Environmental Product Declarations.

1.2 ROLE OF THIS DOCUMENT

This document provides complementary product category rules (c-PCR) to PCR 2019:14 Construction products, available on www.environdec.com. This document cannot be used by itself but shall be used together with PCR 2019:14 and EN 15804. The document can be used together with any valid version of PCR 2019:14, regardless of the version of PCR 2019:14 referred to in this document.

See Figure 2 for an illustration on how PCR 2019:14 and this c-PCR relates to each other and the EPDs that may be based on them.

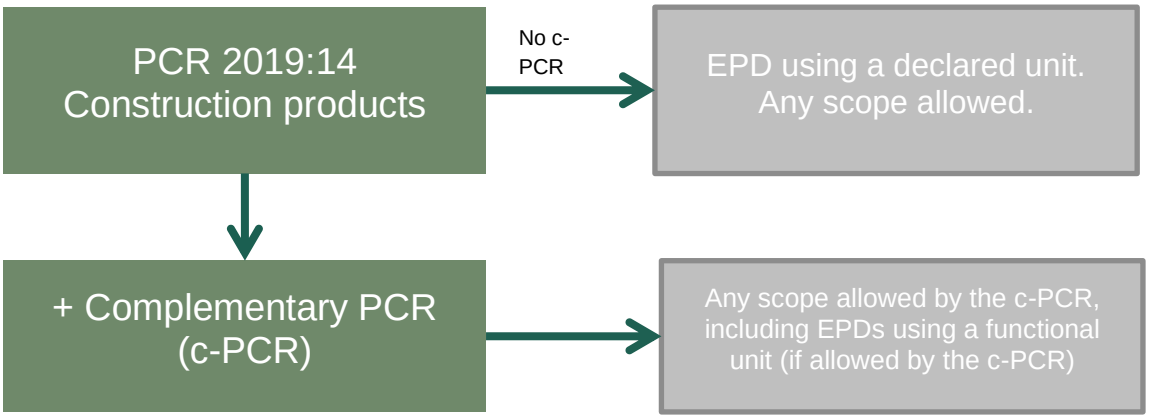

Figure 2 Overview of using PCR 2019:14 directly to develop an EPD or how to use it together with a c-PCR.

2 GENERAL INFORMATION

2.1 ADMINISTRATIVE INFORMATION

Name:	Escalators and moving walks
Registration number and version:	c-PCR-025, version 1.0.0
Programme:	EPD INTERNATIONAL EPD SYSTEM
Programme operator:	EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden Website: www.environdec.com E-mail: support@environdec.com
PCR Moderator:	Nikolay Minkov, greentability Ltd. (on the behalf of the European Lift Association, ELA), nikolay@greentability.com
PCR Committee:	IQ Consult GmbH, "Product Ecology" Working Group (WG) for PCR of the ELA (Otis, Kone, ThyssenKrupp Elevator, Schmitt Aufzuege, Schindler Aufzuege)
Date of publication and last revision:	2025-04-22 (version 1.0.0) A version history is available in Section 8.
Valid until:	2028-06-08
Schedule for renewal:	This document will be revised upon its expiration. In case a c-PCR is developed by a CEN Product TC, the standard will replace this c-PCR with a transition period of 90 days.
Standards conformance:	For compliance to standards and other documents, see PCR 2019:14.
PCR language(s):	This PCR was developed and is available in English. In case of translated versions, the English version takes precedence in case of any discrepancies.

2.2 SCOPE

2.2.1 PRODUCT CATEGORY DEFINITION AND DESCRIPTION

This c-PCR provides category rules for the assessment of the environmental performance of escalators and moving walks and the declaration of this performance by an EPD. The product category corresponds to UN CPC 4354 Lifts, skip hoists, escalators and moving walkways.

The product category corresponds to the following group and underlying classes and sub-classes in the UN CPC classification (when used within construction):

- Section: 4 – Metal products, machinery and equipment

- Division: 43 – General-purpose machinery
    - Group: 435 – Lifting and handling equipment and parts thereof
        - Class: 4354 – Lifts, skip hoists, escalators and moving walkways

UN CPC 4354 Lifts, skip hoists, escalators and moving walkways includes many different types of machinery. However, the scope of this PCR is limited to machinery defined as escalators and moving walks (called only "escalators" for short further on, when a specific differentiation between escalators and moving walks is not necessary[4]), since production technologies and functionality are specific. Therefore, the PCR cannot be used for other type of products (e.g., skip hoists, or lifts (elevators)) classified under the same UN CPC 4354. The product group and UN CPC code shall be specified in the EPD. Moreover, the EPD shall clearly describe the escalator system considered and its scope of application using as a minimum the mandatory performance characteristic listed in Section 4.2.

Escalators covered by this PCR are designed for transportation of passengers and can have inclined or horizontal trajectories. Escalator systems consist of subsystems and components, which may be grouped differently, depending on the product structure definition, applied by the respective company (escalator manufacturer). The company shall define and disclose the configuration of the product under analysis in a tabular or schematic format in the EPD.

This c-PCR and PCR 2019:14 are limited to those products that are used as construction products. Products used in other applications are outside of the scope.

[4] The following definitions for distinguishing between the different systems are adopted: a **horizontal moving walk** is such that has no inclination (angle of inclination, α = 0°); an **inclined moving walk** is such with an inclination α up to 12°; an **escalator** is such that has an inclination α from 12° up to 35° and consists of steps, instead of pallets/belts (in contrast to moving walks).

2.2.2 TYPE OF EPD AND INFORMATION MODULES INCLUDED

Following the requirements in PCR 2019:14, an EPD based on this c-PCR are of a type c) “cradle to grave and module D (A + B + C + D)”. Section 4.3 below provides more information on each life-cycle stage concerning the product category in scope.

2.2.3 GEOGRAPHICAL SCOPE

This c-PCR may be used globally (as in PCR 2019:14).

2.2.4 EPD VALIDITY

As in PCR 2019:14.

3 PCR REVIEW AND BACKGROUND INFORMATION

This c-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 2023-06-08

This c-PCR was available for a first open consultation from 2022-07-05 until 2022-10-16, during which stakeholders were able to provide comments by contacting the PCR Moderator and/or the Secretariat. Physical or web-based meetings have not been held during the open consultation phase. Stakeholders were invited via e-mail to take part in the open consultation and were encouraged to forward the invitation to other relevant stakeholders.

Due to a stakeholder's complaint with regard to the limited invitation and involvement of stakeholders at the c-PCR initiation phase, the Programme Operator decided to allow any additional stakeholders to join the PCR Committee. After giving time for additional comments from the newly involved stakeholders, a second open consultation took place from 2022-12-08 until 2023-01-15.

The following stakeholders provided comments during the open consultations and agreed to be listed as contributors in the c-PCR and at www.environdec.com.

- Schindler Aufzüge AG (also PCR Committee member)
- IQ Consult GmbH (also PCR Committee member)
- EFESME
- KONE S.p.A. (also PCR Committee member)

3.2 PCR REVIEW

3.2.1 VERSION 2023-06-08

PCR review panel:	The Technical Committee of the International EPD System. A full list of members is available at www.environdec.com. The review panel may be contacted via info@environdec.com. Members of the Technical Committee were requested to state any potential conflict of interest with the PCR Committee, and if there were conflicts of interest they were excused from the review.
Chair of the PCR review:	Hüdai Kara
Review dates:	2023-01-19 until 2023-04-06

3.3 EXISTING PCRS FOR THE PRODUCT CATEGORY

As part of the development of this c-PCR, existing PCRs/c-PCRs and other internationally standardised methods that could potentially act as c-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
- IBU (Institut Bauen und Umwelt e.V.)

- All program operators listed under the ECO-Platform initiative (https://www.eco-platform.org/the-eco-epd-programs.html)

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

3.4 REASONING FOR DEVELOPMENT OF C-PCR

This c-PCR was developed to provide requirements and guidelines additional to those in PCR 2019:14 and EN 15804, for developing EPDs for the product category. The c-PCR thereby 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 C-PCR DEVELOPMENT

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

- Schindler Fahrtreppen International GmbH, ENVIRONMENTAL FACT SHEET (EFS) of Escalator Schindler 9300-11 / -15, Version 1.0, June 2018
- KONE Corporation, ENVIRONMENTAL PRODUCT DECLARATION of KONE TransitMaster™ 140, February 2021
- KONE Corporation, ENVIRONMENTAL PRODUCT DECLARATION of KONE TransitMaster™ 140T, December 2021
- KONE Corporation, ENVIRONMENTAL PRODUCT DECLARATION of KONE TravelMaster™ 110, August 2022
- KONE Corporation, ENVIRONMENTAL PRODUCT DECLARATION of KONE TravelMaster™ 110T, August 2022
- Otis a.s., Environmental Product Declaration of OTIS LINK™ ESCALATOR, July 2022

These are the only available documents identified (publicly available or provided by their owners for the purpose of developing the present document) during the PCR development process. It is known that some of the PCR Committee members have experience with LCA of escalators and their knowledge and experience is applied in this project. Due to the confidentiality of their work, however, no other data or studies have been publicly disclosed herewith.

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

This section provides specific rules, requirements and guidelines for developing an EPD for the product category as defined in Section 2.2.1.

4.1 FUNCTIONAL UNIT

EPDs based on this c-PCR shall use a functional unit (FU). All subsequent analyses then refer to that FU, as all inputs and outputs in the life cycle inventory (LCI) and consequently the life cycle impact assessment (LCIA) profile are related to the FU.

The function of an escalator is the transportation of passengers over an inclined (or horizontal) trajectory. Thus, the FU is defined as the transportation of one passenger over one kilometre, i.e., one passenger-kilometre (pkm) over an inclined (or horizontal) trajectory.

LCA results shall be presented per FU, i.e., per 1 pkm. To do so, first the total amount of pkm delivered by the product during its technical lifespan (called also transportation value, TV for short) shall be calculated, followed by division of the respective inputs and outputs by the TV to obtain the LCA results per FU.

TV shall be calculated following the next two steps:

1. Definition of the usage class (UC)

Four UCs are defined to distinguish between different use cases. The average number of passengers per day (N) shall be defined according to one of the selected UC shown in Table 1.

Table 1 Different UCs of escalators and their characteristics .

Usage class	1	2	3	4
Typical location (as per ISO 25745-3, Table A.1)	Shops, museums…	Department stores…	Major airports…	Larger major airports…
Usage intensity	Very low	Low	Medium	High
Average number of passengers per day (N)*	2’500	7’000	15’000	40’000
Typical range (as per ISO 25745-3, Table A.1)	<3’000	3’000 to < 10’000	10’000 to < 20’000	≥ 20’000

*Based on default step width 1000 mm and speed 0.5 m/s

2. Definition of the transportation value (TV)

TV shall be calculated as passenger-kilometre (pkm) during the technical lifespan according to the following formula:

$$TV = L * N * d_{OP} * TL \text{ / } 1000$$

where:

- L – length of the escalator/moving walk in [m], based on the specification of the product (according to Table 2); when the system under study is inclined (for escalators and inclined moving walks), the length shall be calculated as the rise (H) in [m] divided by a sinus of the angle of inclination (α in [rad]), i.e., L=H/sin(α)
- N – average number of passengers transported per day (according to Table 1)
- d_{OP} – number of operating days per year, based on the specification of the product (according to Table 2)
- TL – technical lifespan in years, based on the specification of the product (according to Table 2)

4.2 SPECIFICATION OF THE PRODUCT AND COMPARABILITY

Comparability is one of the key principles of ISO 14025 (clause 5.6) compliant EPDs, intending "[...] *to allow a purchaser or user to compare the environmental performance of products on a life cycle basis* [...]". This is particularly critical when different systems with the same function are being assessed, to ensure that such comparisons are made on a common basis. Comparability as per ISO 14025 is therefore only achievable when FU, UC and the operation mode are identical, as well as when the geographic region[5] is equivalent.

To ensure transparency and credibility, the product-related part of the EPD shall include the following mandatory information as per Table 2 (in addition to Section 5.4.3)

Table 2 Mandatory information required for the specification of the product.

Characteristic	Values	Representative values chosen in case of ranges
Type of installation	• *escalator OR moving walk (horizontal)[6] OR moving walk (inclined)*	
Type of configuration *(see Section 4.3)*	• *new specific installation OR new generic installation* • *with modernization OR without modernization*	
Commercial name	*As stated in the operating manual or sales catalogue*	
Recommended application (main market)	*e.g. commercial, public transport, etc.*	
Geographic region of intended installation	*Region, e.g., specific country or continent*	
Optional equipment	*List, if applicable*	
Technical lifespan (TL)[7]	*e.g., 15 years*	
Applied usage class (UC) (fixed or range) (as per Table 1 of the c-PCR)	*e.g., 1 ... 4*	*e.g., 1*
Nominal speed (fixed or range)	*e.g., 0.4 -0.75 m/s*	*e.g., 0.5 m/s*
Number of operating days per year (fixed or range)	*e.g., 150 – 365*	*e.g., 365*
Operation mode (as per Table 3 of ISO 25745-3)	*e.g., Auto start, continuous, slow- speed, power off*	
Specific parameters in case of an escalator (to be skipped if a moving walk is declared)		
Angle of inclination, α (fixed or range) [degree]	*e.g., 27.3° / 30° / 35°*	*e.g., 30°*
Vertical rise (fixed or range)	*e.g., up to 20 m*	*e.g., 4.5 m*
Step width (fixed or range)	*e.g., 600 / 800 / 1000 mm*	*e.g., 1000 mm*
Specific parameters in case of a moving walk (to be skipped if an escalator is declared)		
Angle of inclination, α (fixed or range) [degree]	*e.g., 0° / 10° / 12°*	*e.g., 12°*
Vertical rise, in case of inclined moving walk (fixed or range)	*e.g., up to 5 m*	*e.g., 4 m*
Length, in case of horizontal moving walk (fixed or range)	*e.g., up to 100 m*	*e.g., 65 m*
Pallet / belt width (fixed or range)	*e.g., 800 – 1600 mm*	*e.g., 1000 mm*

[5] For the sake of comparability of EPDs required by ISO 14025, the equivalence of the geographic region is important due to the specifics of the electricity mix used to operate the escalator/moving walks.

[6] Also known as "autowalks".

[7] As per the definition of GPI, TL is the average time for which the product has been designed or proven to last (expressed in years). This parameter is a reference for all the data in the EPD.

4.3 ESCALATOR CONFIGURATIONS

The present c-PCR can be used for the issuing of EPDs for new escalators. The manufacturer shall decide whether they want to declare the environmental performance of a specific escalator (designed for a specific installation and having already fixed parameters) or a generic escalator (i.e., selected by the company from their product portfolio and covering a given range of products and performance characteristics). In both cases, new escalators shall imply a complete escalator system. The type of escalator under declaration shall be clearly stated in the EPD, followed by the disclosure of the performance characteristics according to Section 4.2.

In case of generic escalator, ranges of different performance characteristics can be applicable. The EPD owner shall declare in the EPD for which UCs the generic escalator in scope is designed and the respective performance characteristics, and/or their ranges. Further, LCA results shall be reported for one specific UC, whereas results for any other UC may be disclosed under “Additional environmental information”. Moreover, the EPD shall describe whether the results cover the whole range (and even combinations of ranges) of the performance characteristics or not. If not, the limited representativity of the results shall be indicated. For more details on how multiple scenarios can be declared in the same EPD, see PCR 2019:14 and Section 6.3.9 of EN 15804. In cases when only the operational energy use (module B6 – see next section) differs, results for the different scenarios may be presented only for this module.

Furthermore, the FU and TV are independent of the travel direction, but this is not the case regarding the operational energy use (module B6). Therefore, to make the impact of the travel directions visible, the results for the operational energy use (module B6) and the total for the whole life cycle shall be presented for upwards direction in the main results table of the environmental performance section (see Section 5.4.5), whereas additional results, representing the downwards direction, may be declared in a separate subsection of the environmental performance section (Section 5.4.6). This requirement is not applicable to horizontal moving walks, where change in the direction has no effect on the energy use.

4.4 SYSTEM BOUNDARIES

EPDs that are developed based on this c-PCR shall have a cradle-to-grave scope. Considering also certain specifics of the production of escalators, their use and disposal, the present c-PCR gives additional guidance on the inclusion and modelling of certain information modules, see Table 3.

Table 3 Life cycle stages and information modules, relevant for escalators

Life cycle stage	Information module		Comment
A1-A3 Product stage	A1	Raw material supply	Included
	A2	Transport	Included
	A3	Manufacturing	Included
A4-A5 Construction process stage	A4	Transport	Included
	A5	Installation	Included
B1-B7 Use stage	B1	Use	Excluded
	B2	Maintenance	Included
	B3	Repair	Excluded
	B4	Replacement	Excluded
	B5	Refurbishment	Included when extension of the specific escalator's designed lifetime is foreseen (i.e., extended TL)
	B6	Operational energy use	Included
	B7	Operational water use	Excluded
C1-C4 End-of-life stage	C1	Deconstruction	Included
	C2	Transport	Included
	C3	Waste processing	Included
	C4	Waste disposal	Included
D Benefits and loads beyond the system boundary	D	Reuse, recovery, recycling, potential	Included

Additional clarifications to modules B2-B5:

Escalators are products with a long operation time, during which preventive maintenance (covered by B2 Maintenance) is needed. This is done by performing regularly scheduled maintenance activities to help prevent unexpected failures in the future. Preventive maintenance avoids corrective actions (covered under B3 Repair) by replacing wear parts and parts with limited lifetime. Therefore, B3 Repair is excluded from the scope of the EPD.

Under B4 Replacement normally the replacement of a whole construction element of a building is considered. In case of escalators, this means that in case of damage the whole escalator is to be replaced. In reality, because preventive maintenance activities take place, this does not happen. Therefore, B4 Replacement is not relevant for escalators and thus out of scope.

Activities under B5 Refurbishment are such that consider "modernization" of the escalator. Modernization is generally defined as a process of components' exchange that leads to the extension of the lifespan of an escalator by improving the original performance of the equipment in line with the latest safety regulations.

The following subsections describe the covered information modules and the respective processes. For detailed information on each module, see EN 15804 (Section 6.3.5). Here only specific descriptions related to this c-PCR are provided.

4.4.1 PRODUCT STAGE: MODULES A1-A3

See PCR 2019:14 and Section 6.3.5.2 of EN 15804.

- A1 Raw material supply: extraction and production of raw material for parts and components needed to produce the escalator, including:
  - reuse of products or materials from a previous product system,
  - processing of secondary materials used as input for manufacturing the product, but not including those processes that are part of the waste processing in the previous product system,
  - generation of electricity, steam and heat from primary energy resources, also including their extraction, refining and transport,
  - energy recovery and other recovery processes from secondary fuels, but not including those processes that are part of waste processing in the previous product system.
- A2 Transport: transportation to manufacturing site (outsourced and in-house) from direct suppliers, i.e. from previous production or extraction process. Earlier transport journeys[8] should be included in module A1.
- A3 Manufacturing: in-house and outsourced manufacturing and assembly of components for the escalator in state ready for transportation to building site, including:
  - production and use of operating and auxiliary materials consumed,
  - production of intermediate packaging materials, incl. such that are necessary to protect the escalator components during their transport from the manufacturing site to the building site,
  - direct emissions to air, water or soils,
  - treatment of waste and wastewater generated from the manufacturing and assembly of main parts.

Processes that can be excluded are:

- business travel of personnel and travel to and from work by personnel,
- indirect activities (like administration, sales, research and development activities etc.).

4.4.1.1 Information requirements for component manufacturers

The component manufacturer shall provide the escalator manufacturer with the following information:

- information of materials used (mandatory),
- information of manufacturing processes (not needed if this process is allocated to the upstream module – see Error! R eference source not found.; data can be estimated by the escalator manufacturer),
- declaration of the component's expected life,
- information on the necessary maintenance activities to guarantee a correct operation during the declared useful life, and
- information regarding dismantling activities necessary for the management of the component end of life.

Alternatively, if there is an agreement between the customer and the supplier, the component manufacturer can directly provide the escalator manufacturer with data of the environmental impact of their components. If this is the case, the component manufacturer shall follow the rules of this PCR for the calculation of such environmental impacts, as if they were components for modernization[9]. It is mandatory that the component manufacturer use the same background generic data sources (i.e., databases) as the escalator manufacturer, which shall be provided to the component manufacturer (see Section 4.7). Moreover, all supporting documentation (in the best-case external verification or critical review) shall be made available to the EPD owner to facilitate the EPD verification process.

[8] Example: transport of raw materials, finished and semi-finished parts to in-house and outsourced manufacturing locations of main components, in particular air cargo transport such as e.g. electrical and electronic equipment & PWBs from South East Asia

[9] This PCR, however, cannot be used for the development of EPDs of single components.

4.4.2 CONSTRUCTION PROCESS STAGE: MODULES A4-A5

See PCR 2019:14 and Section 6.3.5.3 of EN 15804.

- A4 Transport: transportation of the product from the manufacturing site to the building site
- A5 Installation: installation of the product, including:
  - the production and transport of auxiliary materials and energy used during the installation of the escalator,
  - treatment of waste generated from the escalator packaging materials.

4.4.3 USE STAGE: MODULES B1-B7

See PCR 2019:14 and Section 6.3.5.4 of EN 15804.

- B2 Maintenance: also known as “preventive maintenance”, including:
  - transportation of workers from their working place to the building site,
  - the production and transport of the components and auxiliary materials and energy used for the escalator maintenance activities,
  - direct emissions to air, water or soils,
  - treatment of waste generated from the components and their packaging, and
  - the end-of-life processes of any waste from transportation and the maintenance process, including any part of the component and ancillary materials removed.

The expected preventive maintenance activities, number and type of spare parts expected to ensure a good functioning of the escalator during the useful lifetime declared by the manufacturer shall be communicated to the escalator customer and be reported in the LCA report.

- B5 Refurbishment: also known as “modernization”, including:
  - the production and transport of the components and auxiliary materials and energy used for the replacement,
  - direct emissions to air, water or soils,
  - treatment of waste generated from the components and their packaging, and
  - the end-of-life processes of any losses suffered during transportation and the refurbishment process, including the components and ancillary materials removed.

In case of modernization, the EPD shall clearly describe what original components remain in the installation and what parts or components are being replaced, as well as the foreseen effects that these replacements would have in the different life cycle phases of the escalator (e.g., higher or lower energy consumption during the technical or extended lifespan). This content shall be defined and disclosed by the manufacturer.

- B6 Operational energy use: expected energy consumption of the escalator calculated according to Annex A of ISO 25745-3; the calculation of the energy consumption shall be carried out, based on the same parameters as for the calculation of TV (e.g. N according to Table 1). The country/region-specific and the default mix shall be documented in the EPD.

The weight per passengers shall be considered as 75 kg for the calculation.

The usage profiles considered according to ISO 25745-3, Table 3, shall be declared in the EPD.

Results of different usage profiles and/or UCs can be declared in the same EPD. The results of usage profiles and/or UCs in addition to the main usage profile and UC declared in the environmental performance section (see Section 5.4.5), shall be declared in a separate subsection of the environmental performance section.

Regarding this module, the underlying LCA report shall contain as a minimum:

- Transparent documentation of power and energy measurements (as per ISO 25745-1), or
- Transparent documentation of all key parameter values used, and key assumptions made for the electricity demand calculation (as per ISO 25745-3).

In case of an EPD for a specific escalator, in which a customized estimation of the energy consumption (according to Annex A.3 of ISO 25745-3) has been made, any deviation to this calculation method shall be reported and justified in the EPD.

4.4.4 END-OF-LIFE (EOL) STAGE: MODULES C1-C4

See PCR 2019:14 and Section 6.3.5.5 of EN 15804.

- C1 Deconstruction: including:
  - dismantling or demolition of the product from the building,
  - initial on-site sorting of the materials,
  - auxiliary materials and energy used during the deconstruction of the escalator.
- C2 Transport: transportation of the deconstructed product from the building site to the waste treatment site.
- C3 Waste processing: e.g. collection of waste fractions from the deconstruction and waste processing of material flows intended for reuse, recycling and energy recovery according to a generic scenario defined by the company.
- C4 Waste disposal: including physical pre-treatment and management of the disposal site, according to a generic scenario defined by the company.

Each EPD owner shall define its own EoL (waste treatment) scenario, considering the specifics of the geographical region where the escalator is installed (or intended to be installed). The EoL scenario shall be clearly documented and justified in the EPD describing the final method of disposal, i.e., recycling, incineration and/or landfill.

Processes excluded are:

- Production, maintenance, and disposal of infrastructure (buildings, machinery and capital goods) at the sites where the product is disposed.

In order to differentiate between equipment that belongs and such that does not belong to the escalator system, please refer to Figure A.2 of ISO 25745-1.

4.4.5 BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY: MODULE D

See PCR 2019:14 and Sections 6.3.5.6 and 6.4.3.3 of EN 15804.

4.4.6 OTHER BOUNDARY SETTING

See PCR 2019:14 and EN 15804.

4.5 SYSTEM DIAGRAM

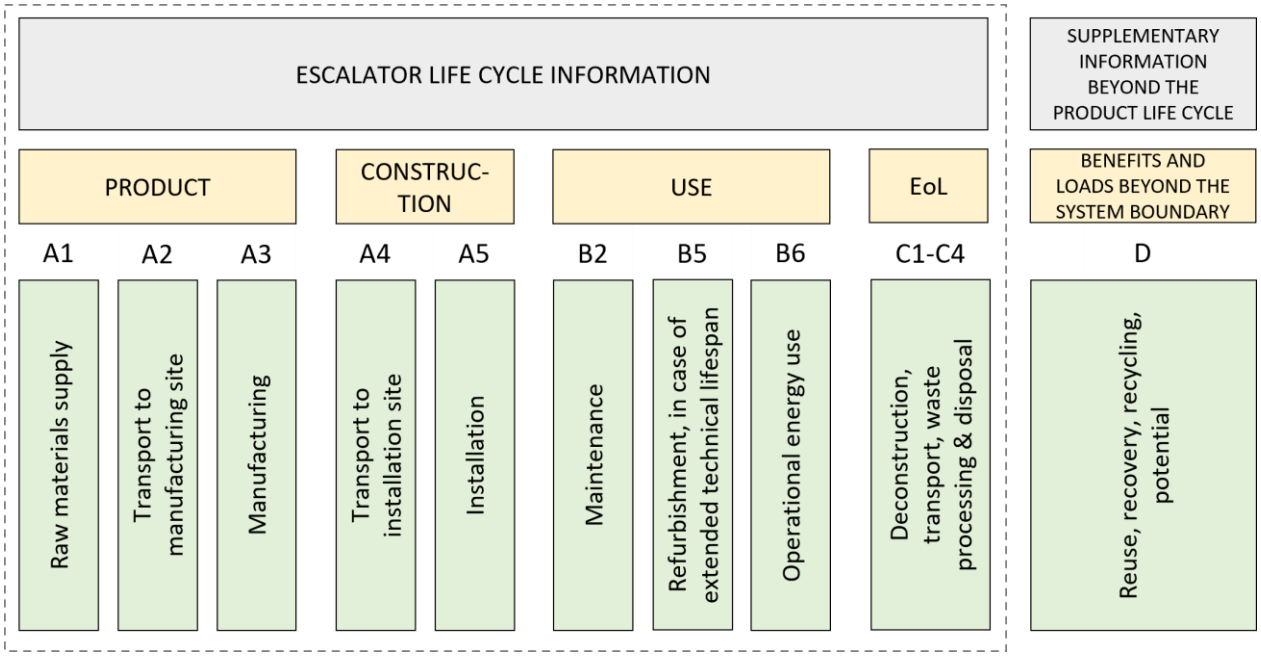

Figure 3 System diagram illustrating the processes that are included in the product system, divided into life-cycle stages and information modules.

4.6 CUT-OFF RULES

See PCR 2019:14 and EN 15804.

4.7 ALLOCATION RULES

See PCR 2019:14 and EN 15804.

If mass criteria are applied, the allocation factor shall be calculated as the total mass of the escalator or component divided by the total mass of all escalators or components produced at the given production site.

The use of economic allocation criteria should be avoided, because of its sensibility to market specific conditions. Moreover, please refer to Section 6.4.3.2 of EN 15804 where additional criteria for using economic allocation according to the different contributions to the overall revenue are described. If economic allocation has been used, a specific sensitivity analysis shall be provided to the verifier and the monitoring of the relationship between results and current economic value shall be documented and updated.

The allocation procedures shall be documented in the LCA report and the EPD. In case of economic allocation, the EPD shall explain the reference values that have been used.

4.8 DATA QUALITY REQUIREMENTS

See PCR 2019:14 and EN 15804.

The EPD shall include references to the generic database (and version) used and identify the unit processes represented. How the different materials were assigned to the respective generic LCI process dataset shall be documented in the LCA report.

4.8.1 DATA QUALITY REQUIREMENTS AND OTHER MODELLING GUIDANCE TO INFORMATION MODULES A1 AND A3

For information modules A1 and A3, depending on the production supply chain specifics for each manufacturer, different possibilities exist about which commodities, raw materials and/or product components are taking place in-house or are outsourced to external suppliers. In this regard, for processes that the manufacturer has influence over[10], manufacturer's average or specific data shall be used. Otherwise, when these processes are outsourced (i.e., upstream processes), generic data may be used. The respective data type rules as per Error! Reference source not found. above shall apply for each r espective process.

Manufacturer's average or specific data, called primary data herewith, are gathered from the actual manufacturing plant(s), where specific processes are carried out and data from other parts of the life cycle traced to the specific product system under study, e.g., materials or electricity provided from a contracted supplier being able to provide data for the actual delivered services, transportation taking place based on the actual fuel consumption and related emissions, etc.

The requirements for primary data also include actual product weights, gross amounts of raw materials used (including material losses) and amounts of waste, etc.

If no primary data is available to account for material losses (cuttings, wastage, residues, etc.) mass of materials used in the main components shall be accounted for with an increase of 5%. Generic data shall not exceed 10% of the life cycle inventory for the processes the manufacturer has influence over on the bases of the overall environmental impact from the product system.

For the calculation of the environmental impact of the manufacturing and assembly of components for the escalator (A3), the electricity mix should be modelled as per the required hierarchy described in PCR 2019:14 It is acceptable to use 100% generic/secondary upstream data for electricity production, whereas quantity of energy used shall be primary/system specific modelled data. In all cases, the applied electricity mix(es) shall be declared in the EPD.

Data regarding components manufactured and/or assembled by sub-suppliers can be approximated by own manufacturing data of comparable processes and be applied instead of using specific data from the sub-supplier, or in combination with (other) generic data (e.g., metal working process data of ecoinvent) representative for the sub-supplier's manufacturing process. In such a case, this shall be made transparent in the LCA report.

4.8.2 DATA QUALITY REQUIREMENTS AND OTHER MODELLING GUIDANCE TO INFORMATION MODULES A2 AND A4

For the transportation modules A2 and A4, use of primary data is recommended as a minimum for the specific distance and specific mass transported, and optionally for loading rates and empty return rates of the respective means of transportation (else predetermined value used by the underlying LCI background data is acceptable, e.g., average loading rate of 100%, and an empty return rate of 0%). Selection of generic LCI data within a transportation mode shall reflect as close as possible the specific context of the EPD, for example with regard to lorry capacities (e.g., 17 t, 40 t, etc.) or emission standards (e.g., EURO 3, EURO 5, etc.) and shall be transparently documented in the LCA report. This will make it possible to show the benefits of efforts of to reduce the environmental impact of transportation, such as regional manufacturing with shorter transport distances or using cargo fleets with lower-than-average environmental impact.

4.8.3 DATA QUALITY REQUIREMENTS AND OTHER MODELLING GUIDANCE TO INFORMATION MODULE B6

As regards module B6, accuracy of energy measurements and energy demand calculations shall comply with the requirements of ISO 25745-1 and ISO 25745-3. For the calculation of the environmental impact of the energy consumption during the operation phase (B6), the electricity mix shall correspond to the actual consumption mix of the market where the specific escalator is installed. For generic escalators, the consumption mix for the market where the escalator is intended to be installed shall be used. It is acceptable to use 100% generic upstream data for electricity production, whereas quantity of energy used shall be primary/system specific modelled data. In all cases, the applied electricity mix shall be declared in the EPD.

[10] A manufacturer has influence over the processes of his own plant and usually of his Tier-1 suppliers, since the suppliers' plant processes are directly dependent on the manufacturer's orders for components.

Moreover, following the requirements in PCR 2019:14 for documenting the GWP-GHG results, in kg CO_2 eq./kWh, of the upstream electricity used in the manufacturing process A3, the same rule shall apply also for module B6. This is justified by the fact that the energy consumption of the escalator operation accounted in B6 is assumed to have a highly significant overall environmental impact.

4.9 ENVIRONMENTAL PERFORMANCE INDICATORS

See PCR 2019:14 and EN 15804.

The environmental performance results shall be declared per FU, i.e., per 1 pkm, separately for each information module.

In a separate subsection, the environmental performance results shall also be declared for the complete product over its TL, plus extended lifespan if refurbished, as specified in Table 2, separately for each information module.

4.10 INCLUDING MULTIPLE PRODUCTS IN THE SAME EPD

See PCR 2019:14 and Section 4.2 above.

5 CONTENT AND FORMAT OF EPD

For most of the topics to this section, the present c-PCR follows the requirements as per PCR 2019:14 with certain exceptions.

5.1 EPD LANGUAGE

As in PCR 2019:14.

5.2 UNIT AND QUANTITIES

As in PCR 2019:14.

5.3 USE OF IMAGES IN EPD

See PCR 2019:14.

5.4 EPD REPORTING FORMAT

As in PCR 2019:14.

Additionally, the following voluntary information may be declared:

- Short description of the company
- Geographical location of suppliers / manufacturing sites / customers
- Information about ISO 14001 and/or EMAS certificates of manufacturing sites considered in the core module
- Specific aspects regarding the production
- Company logotype

5.4.1 COVER PAGE

As in PCR 2019:14.

5.4.2 PROGRAMME INFORMATION

As in PCR 2019:14.

5.4.3 PRODUCT INFORMATION

As in PCR 2019:14.

In addition, the EPD shall contain the following statement: “Comparability between EPDs based on c-PCR Escalators and moving walks (to PCR 2019:14) is only achievable, if the following performance characteristics apply: functional unit (FU), operation mode and usage class (UC) are identical and the geographic region is equivalent.”

Table 2 as per Section 4.2 (Specification of the product) shall also be declared in the EPD.

5.4.4 CONTENT DECLARATION INCLUDING PACKAGING

As in PCR 2019:14.

In addition to PCR 2019:14, the gross weight declared in the EPD shall not include spare parts. Moreover, the EPD shall include a declaration of the escalator composition[11] in quantitative terms (percentage of the total weight, considering all lifecycle phases and according to the cut off rules), grouped at least according to the following categories:

- Ferrous metals
- Non-ferrous metals
- Plastics and rubbers
- Inorganic materials
- Organic materials (e.g. paper or wood)
- Lubricants (e.g. oils and greases), paintings, coatings, adhesives and fillers
- Electric and electronic equipment
- Batteries and accumulators
- Other materials[12]

Proprietary materials and substances covered by exclusive legal rights including patent and trademarks can be reported under ”Other materials”.

The escalator manufacturer can be more specific in the reporting of the escalators material composition if wished.

Escalators put on certain markets can be subject of further local regulations or specific requirements of stakeholders. In such cases, additional requirements to declare the content of certain substances may be needed. This can be done in in the content declaration section or in an annex of the EPD, which then shall be referred to in the content declaration section.

5.4.5 ENVIRONMENTAL PERFORMANCE

As in PCR 2019:14.

In addition to the main environmental performance results per FU, the environmental performance section shall, in a separate subsection, include a declaration of the environmental performance for the complete product over its TL, plus extended lifespan if refurbished (see Section 4.9). Furthermore, the separate subsection may include a declaration of the following additional LCA results:

- Results for additional usage profiles and/or UCs (see Section 4.4.3).
- Results for the downwards moving direction (see Section 4.3). This is not applicable for horizontal moving walks.

5.4.6 ADDITIONAL ENVIRONMENTAL INFORMATION

As in PCR 2019:14.

Additional environmental information may also include recommendations for energy saving measures. Other environmental information describing different waste categories and output flows may be declared as follows:

- Components potentially suitable for re-use; in kg and % of total system weight as installed.
- Materials potentially suitable for recycling in kg and % of total system weight as installed.
- Materials potentially suitable for energy recovery; in kg and % of total system weight as installed.

Additional environmental information may also include a more detailed description of an organization’s overall environmental work (e.g., relevant Type I and Type II environmental labels awarded to the product), information that is identified as an important environmental aspect of the product or information asked by the customer and other stakeholders

[11] A detailed bill of materials shall be available in the LCA report.

[12] Other materials include those, for which the material contents cannot be established.

Moreover, any extraordinary efforts performed by the company for recycling and reuse of their escalator material, such as e.g., voluntary take back programs of the escalator company for recycling, refurbishment and reuse of PWBs and e-waste can also be declared.

In case information regarding green building certification schemes is to be disclosed, this shall be done in this section. Such information can be e.g.:

- Annual energy consumption and energy efficiency, following ISO 25745-3
- Reference to published Health Product Declarations (HPD) or Cradle to Cradle certificates (C2C)
- Noise generation
- Reference to REACH regulation compliance.

Any claims made about the product shall be verifiable.

5.4.7 ADDITIONAL SOCIAL AND ECONOMIC INFORMATION

As in PCR 2019:14.

5.4.8 INFORMATION RELATED TO SECTOR EPD

As in PCR 2019:14.

5.4.9 DIFFERENCES VERSUS PREVIOUS VERSIONS

As in PCR 2019:14.

5.4.10 REFERENCES

As in PCR 2019:14.

5.4.11 EXECUTIVE SUMMARY IN ENGLISH

As in PCR 2019:14.

6 LIST OF ABBREVIATIONS

In addition to abbreviations listed in PCR 2019:14:

CPC	Central Product Classification
ELA	European Lift Association
EoL	End-of-Life
FU	Functional unit
GPI	General Programme Instructions
PWB	Printed Wiring Board
TL	Technical lifespan
TV	Transportation value
UC	Usage class

7 REFERENCES

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

EPD International (2026) General Programme Instructions of the International EPD System. Version 5.0.1, dated 2025-02-27. www.environdec.com.

EPD International (2025) PCR 2019:14 Construction products, version 2.0.0. www.environdec.com.

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 (2012) ISO 25745-1:2012 – Energy performance of lifts, escalators and moving walks – Part 1: Energy measurement and verification.

ISO (2015) ISO 25745-3:2015 – Energy performance of lifts, escalators and moving walks – Part 3: Energy calculation and classification of escalators and moving walks.

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

8 VERSION HISTORY OF C-PCR

VERSION 2023-06-08

Original version of the c-PCR.

VERSION 2024-04-30

- Updated with prolonged validity to align the updated validity of PCR 2019:14 as of version 1.3.4.
- Updates in references.

VERSION 2024-08-27

- New contact information to the PCR Moderator.

VERSION 1.0.0, 2025-04-22

- Updated with prolonged validity, until five years from the original publication of the PCR.
- Changed from version date to version number.
- Other editorial changes and clarifications, e.g., related to the use of the c-PCR (see Section 1.2).
- Removed references to specific sections of PCR 2019:14, as the sections of PCR 2019:14 changed as of the publication of version 2.0.0 in 2025-04-07 and as this c-PCR is applicable together with any version of PCR 2019:14.

ESCALATORS AND MOVING WALKS
PRODUCT GROUP CLASSIFICATION: UN CPC 4354