

SYNTHETIC CARPET YARN (CONSTRUCTION PRODUCT)
PRODUCT GROUP CLASSIFICATION: UN CPC 264,355

C-PCR-015 (TO PCR 2019:14)
VERSION 1.0.0

VALID UNTIL: 2027-03-06



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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 EPDs¹ 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 declarations³ 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.

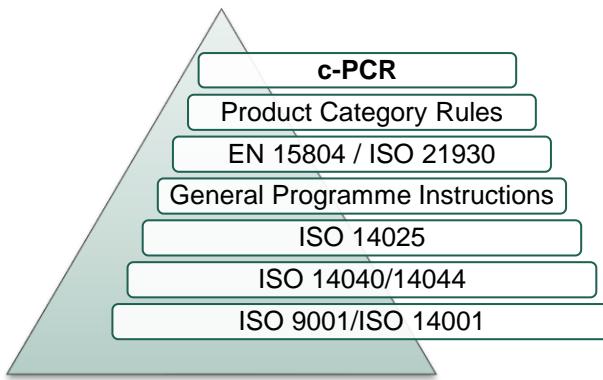


Figure 1 This c-PCR in relation to the hierarchy of standards and other documents.

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.

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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.

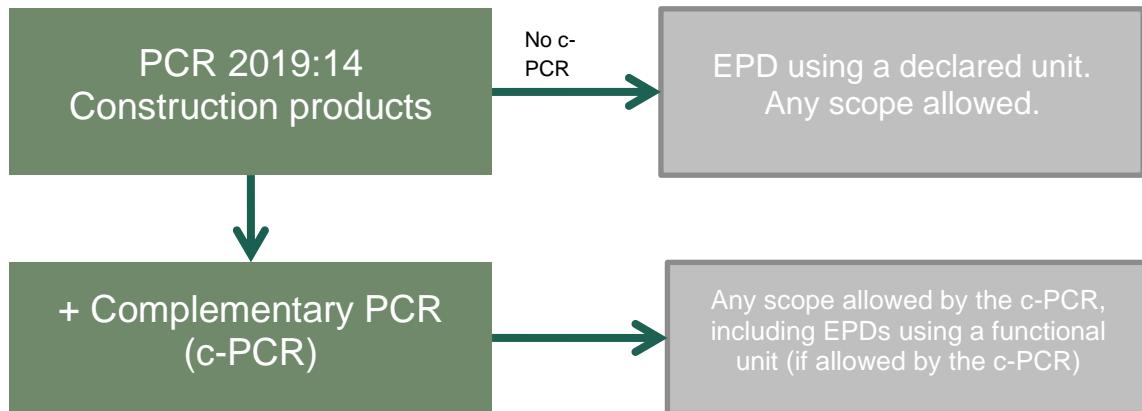


Figure 2 Overview of using PCR 2019:14 directly to develop an EPD or how to use it together with a c-PCR.

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2 GENERAL INFORMATION

2.1 ADMINISTRATIVE INFORMATION

Name:	Synthetic carpet yarn (construction product)
Registration number and version:	c-PCR-015, version 1.0.0
Programme:	 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:	Lucija Aleksic, Aquafil S.p.A., lucija.aleksic@aquafil.com
PCR Committee:	Aquafil & Life Cycle Engineering
Date of publication and last revision:	2025-04-15 (version 1.0.0) A version history is available in section 8.
Valid until:	2027-03-20
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 and declaration of the environmental performance of all synthetic carpet yarns (construction product) comprised within the scope of the following standards:

- BISFA - Terminology of man-made fibers

2.2.2 SPECIFICATION OF THE COMPANY

Information about the company issuing the EPD shall be specified in the EPD, including a description of the company and a description of its overall environmental work, as follows:

Mandatory information:

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- Name and address of the company
- Voluntary information:
- Short description of the company
- Geographical location of suppliers/manufacturing sites/customers
- Information about management system certifications (e.g. ISO 14001 and/or others) in the core processes
- Specific aspects regarding the production
- Company logotype

2.2.3 SPECIFICATION OF THE PRODUCT

The product category referred to in this PCR includes all synthetic yarn used for building purposes (e.g. in floor, roof, ceiling, walls, etc.).

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

The ISIC-CPC's classification list class and subclass taken into consideration by the CPC 355, 262, 264 groups are hereby reported.

Table 1 Specification of the product.

GROUP	CLASS	DESCRIPTION	CORRESPONDING HS 2012 CODES
355		Man-made fibres	
	3551	Synthetic filament tow and staple fibres, not carded or combed	5501, 5503
	3552	Synthetic filament yarn (except sewing thread and multiple or cabled yarn), not put up for retail sale	5402.11-.59
	3553	Synthetic monofilament and strip	5404
262		Man-made textile staple fibres processed for spinning	
	2621	Synthetic staple fibres, carded, combed or otherwise processed for spinning	5506
264		Textile yarn and thread of man-made filaments or staple fibres	
	2642	Yarn of man-made filaments, multiple or cabled (other than sewing thread, high tenacity yarn of polyamides, polyesters or viscose rayon), not put up for retail sale; man-made filament yarn (other than sewing thread), put up for retail sale	5402.61-.69

In case of inclusion of several similar products the international EPD System offers the possibility for similar products to be included in the same EPD. See General Programme Instructions for additional information.

2.2.4 TYPE OF EPD AND INFORMATION MODULES INCLUDED

Following the requirements in Section 2.2.2 of PCR 2019:14, an EPD based on this c-PCR is a type b EPD, including modules A1-A3, C1-C4 and D. Section 4.2 below provide more information on each life cycle stage concerning the product category in scope.

2.2.5 GEOGRAPHICAL REGION

This PCR may be used globally.

2.2.6 EPD VALIDITY

To be carried out as in PCR 2019:14.

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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 2022-03-06

This c-PCR was available for open consultation from 2021-06-08 until 2021-08-08, 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. No comments were provided during this period.

3.2 PCR REVIEW

3.2.1 VERSION 2022-03-06

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:	Gorka Benito Alonso
Review dates:	2021-09-21 until 2021-11-19

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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 DECLARED UNIT

EPDs based on this c-PCR shall be based on a declared unit (DU), which is used to quantify the environmental performance of the investigated product. All subsequent analyses shall refer to that DU, as all inputs and outputs in the life cycle inventory (LCI) and consequently the life cycle impact assessment (LCIA) profile are related to the DU.

The use of the DU is necessary to ensure comparability of the LCA results. This is particularly critical when synthetic carpet yarns (construction product) of different materials are being assessed. Furthermore, comparability is only achievable if the comparison is made on a common basis. Hence, EPDs based on this c-PCR are only comparable if the performance characteristics described in the specifications of the product are equivalent.

Based on this, the DU is defined as 1 kg of synthetic carpet yarn (construction product). In this regard, LCA results shall be presented per 1 kg of synthetic carpet yarn (construction product) with the required packaging as presented to the final destination. The declared unit shall be declared in the EPD. The environmental impact shall be given per declared unit.

4.2 SYSTEM BOUNDARY

EPDs that are developed based on this c-PCR shall cover product stage (A1-A3), end of life stage (C1-C4) as well as benefits and loads beyond the system boundary (D). In the following Table 1, the life cycle stages, and information modules are described in relation to the specifics of synthetic carpet yarns (construction product).

Table 1 Life cycle stages and information modules relevant for synthetic carpet yarn (construction product).

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	Excluded
	A5	Installation	Excluded
B1-B7 Use stage	B1	Use	Excluded;
	B2	Maintenance	Excluded;
	B3	Repair	Excluded;
	B4	Replacement	Excluded;
	B5	Refurbishment	Excluded;
	B6	Operational energy use	Excluded;
	B7	Operational water use	Excluded;
C1-C4 End-of-life stage	C1	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

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The scope of the LCA for yarn production shall be "Cradle to gate with modules C1–C4 and module D (A1–A3 + C + D)", as defined by the PCR 2019:14 Construction products and construction services.

In Section 4.3, more detailed information and description of each life cycle stage and information module are provided.

4.3 DESCRIPTION OF PROCESSES AND INFORMATION MODULES

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

4.3.1 PRODUCTION STAGE: MODULES A1 – A3

To be carried out as in PCR 2019:14 and Section 6.3.5.2 of EN 15804.

A1 Raw material supply: Extraction and production of raw material for parts needed to produce the product, including:

- Extraction or synthesis of the raw material
- Polymer production
- Plastic waste and scrap recovery/recycling processes¹
- Production of materials (including additives, etc.) and ancillaries used in the process
- Pigments and dyes where applicable
- Production of packaging, if relevant
- Other ancillary materials (e.g. lubricants)

If generic data are used for raw material acquiring, it shall be stated in the EPD for which materials this is valid. The source of raw materials dataset and main hypotheses adopted shall be declared in the EPD.

Processes that can be excluded:

- Production, maintenance and disposal of manufacturing infrastructure (buildings, machinery and capital goods).

A2 Transportation:

- External transportation to the core processes and internal transport.

A3 Manufacturing: Manufacturing of the product.

- spinning of man-made fibers (e.g. melt spinning, wet spinning, dry spinning, gel spinning)
- any post spinning process of yarn of man-made filaments (e.g. air entanglement, twisting, cabling, heat setting...)
- any post spinning process of yarn of man-made staple fibers (e.g. drawing, carding, combing, mechanical spinning,)
- Quality control
- Emission to air: data at the stacks, after treatment shall be considered; fugitive emissions should be considered if appropriate
- Emissions to water: data from process release shall be considered
- Energy consumption with specific regard to the use of electricity and thermal energy. The production stage shall be included in the core process. Other fuels shall be considered if used for the process or local transports (e.g. forklifts). Local energy mix shall be considered.
- If waste from the process is considered as by-product, then it should satisfy the requirement of Article 5 of 2008/98/EC of 19 November 2008. This shall be clearly mentioned in the EPD in order to make evident that such by-products are not environmentally free of burdens. Outputs of the system relevant to energy production processes (waste to energy processes) shall never be considered a by-product.
- Waste treatments
- Waste that is deposited in landfill shall be declared as kg of waste and kg of hazardous waste

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- A minimum of 99% of the total weight of the declared product including packaging shall be included
- Waste treatment is omitted for the processing of waste into a resource for a subsequent user

Processes that can be excluded:

- Business travel of personnel and travel to and from work by personnel
- Indirect activities (such as administration, sales, research and development activities, etc.)

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

To be carried out as in PCR 2019:14 and section 6.3.5.5 of EN 15804. The used EOL scenario shall be clearly documented and justified in the EPD, describing the adopted method for waste handling, i.e. recycling, incineration and/or landfill.

C1 Deconstruction: This module can be calculated using generic data and literature values.

- Energy used for dismantling and/or demolition of the product at the construction site.
- Auxiliary materials and energy used during deconstruction of the product.
- Transport for decommissioning and disassembly (e.g. machinery and equipment needed for decommissioning services)

C2 Transport: transport of the deconstructed product from the site of construction to waste treatment site.

C3 Waste Processing: processing of waste for re-use, recovery and/or recycling.

C4 Waste disposal

4.3.3 BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY: MODULE D

To be carried out as in PCR 2019:14 and Section 6.4.3.3 of EN 15804.

Module D includes reuse, recovery and/or recycling potentials, expressed as net impacts (loads) and benefits. Any net flow leaving the product system that has passed the end-of-waste state shall be included in module D, except those which have been allocated as co-products. Declared scenario in module D shall conform to specified scenarios in module A and C. The used scenario for module D shall be clearly documented and justified in the EPD.

Please refer to Annex D (Section D.3.4) of EN 15804 for an approach to calculate the net impacts in Module D.

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4.4 SYSTEM DIAGRAM

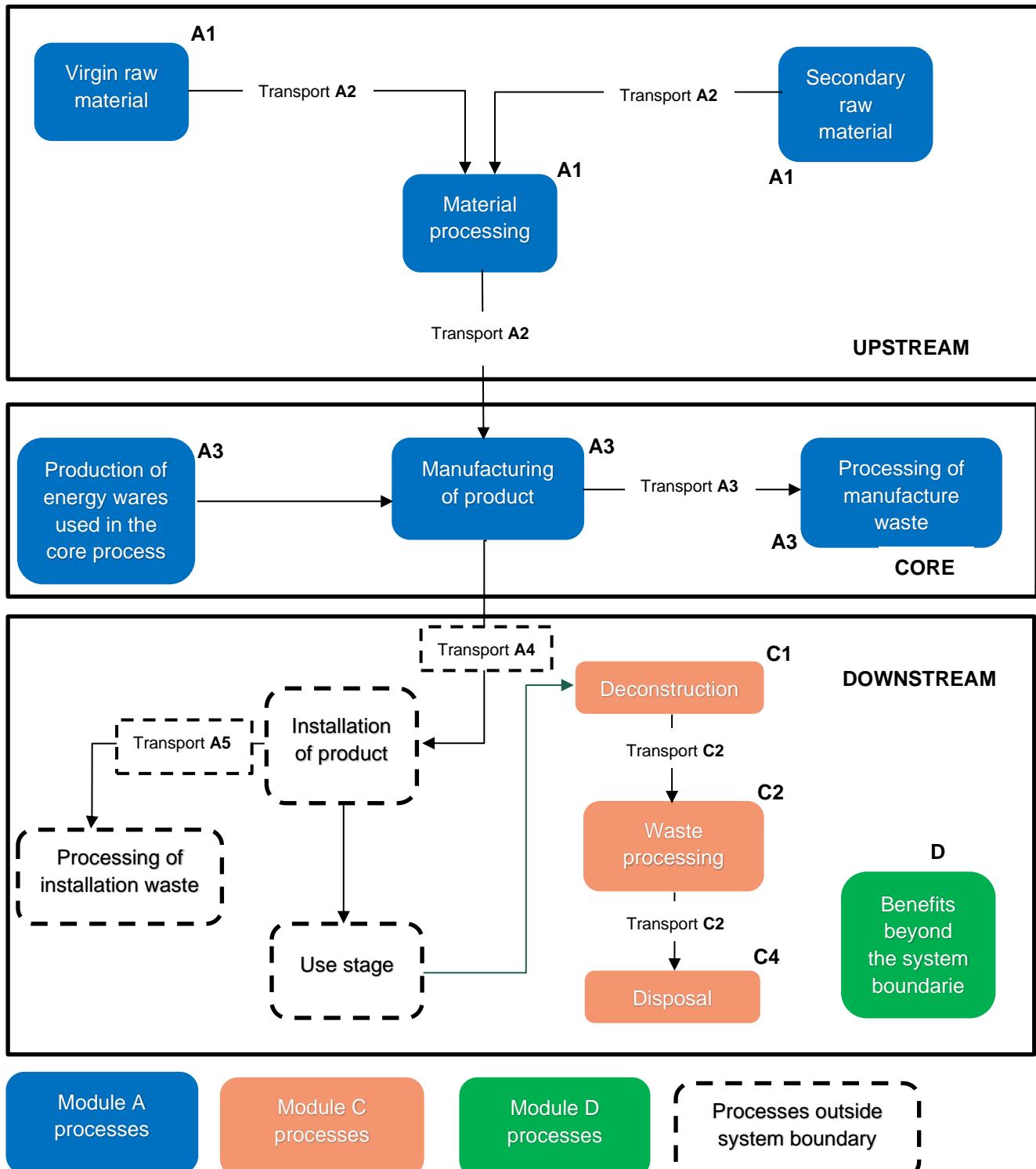


Diagram 1 System diagram illustrating the processes that are included in the product system, divided into upstream, core and downstream processes. The system diagram also displays the partitioning of the product processes into module A, C and D.

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4.5 CUT-OFF RULES

See PCR 2019:14 and EN 15804.

4.6 ALLOCATION RULES

See PCR 2019:14 and EN 15804.

The methodological choices in the allocation process shall be documented and motivated in the EPD. In case of economic allocation, the reference values shall also be documented and explained in the EPD.

4.7 DATA QUALITY REQUIREMENTS

To be carried out as in PCR 2019:14.

Generic/secondary and specific/primary data shall be applied as defined by EN 15804 and PCR 2019:14.

For dyes and pigments, the following rules could be used if no LCA data are available:

- TiO₂ instead of inorganic pigments
- Soot for organic pigments
- Anthraquinone as a replacement substance for dyes, that are applied with aqueous dyeing process

In the case of PA6 yarn, special care has to be taken when using data set for caprolactam or PA6 polymer production due to the relevant difference within results. Most common datasets available are:

- Gabi record DE: PA 6 (caprolactam via cyclohexane)
- Gabi record NL: PA 6 (caprolactam via phenol-route)

Selection of specific database has to be appropriately justified in the EPD and based on relevant proof of evidence.

4.8 ENVIRONMENTAL PERFORMANCE INDICATORS

See PCR 2019:14 and EN 15804.

4.9 OTHER CALCULATION RULES AND SCENARIOS

See PCR 2019:14 and EN 15804

4.10 INCLUDING MULTIPLE PRODUCTS IN THE SAME EPD

See PCR 2019:14.

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5 CONTENT AND FORMAT OF EPD

See PCR 2019:14.

5.1 EPD LANGUAGE

See PCR 2019:14.

5.2 UNIT AND QUANTITIES

See PCR 2019:14.

5.3 EPD REPORTING FORMAT

See PCR 2019:14. In addition, the EPD shall contain the following statement:

"Comparability between EPDs is only achievable if the following performance characteristics are equivalent: declared unit, containment level, level of working width, assumed service life, geographic region and fulfilment of the same requirements of the applicable standard.

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6 LIST OF ABBREVIATIONS

See PCR 2019:14.

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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.

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

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8 VERSION HISTORY

VERSION 2022-03-06

- Original version.

VERSION 2024-04-30

- Updated validity.
- Updates in references.

VERSION 1.0.0, 2025-04-15

- 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.

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