



# **Product Category Rules – Construction Products**

PCR#	PCR 2020:17
Version	v1.2.5
Issue Date	01.11.2022
Valid to	30.10.2026



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# **1.0 INTRODUCTION**

The guidelines in this document are meant for businesses making an environmental product declaration (EPD) for construction materials and services. These materials include construction parts and combined technical systems used in any kind of building work. These parts and systems can be considered as construction materials. The purpose of this document is to provide clear instructions for conducting a life cycle assessment (LCA), ensuring consistent LCA methods for all product groups, and supporting the modular principle, allowing each EPD to be a source of information for building projects.

The goal of these guidelines is to provide clear instructions for conducting life cycle assessments (LCAs) for these products. This ensures that everyone uses the same methods for each product group, making the process more consistent. Additionally, these guidelines support the idea of modularity, meaning that each EPD can be used as a source of information for different construction projects. This PCR can also be used for raw materials and intermediate products that can among others be used as input to construction products.

# **2.0 SCOPE**

The purpose of Product Category Rule is to provide instructions for creating environmental product declarations (EPDs) for construction products and services. They also aim to clarify the specific requirements of the underlying life cycle assessments (LCAs) and offer guidance for developing additional parts of the guidelines when necessary. These core rules apply to all construction products listed in the standard EN 15804. The different sections in this document follow the structure of EN 15804, with any additional details provided through examples and references to EN 15804. To use these guidelines, you will need to have access to both EN 15804 and the general program instruction (GPI) from International Climate Intelligence System.

Following type of EPDs is possible for construction products as required by clause 5.2 of EN 15804;

- a) Cradle to gate with modules C1–C4 and module D (A1–A3 + C + D).
- b) Cradle to gate with options, modules C1–C4, module D and with optional modules (A1–A3 + C + D and additional modules). The additional modules may be one or more selected from A4–A5 and/or B1–B7.
- c) Cradle to grave and module D (A + B + C + D).
- d) Cradle to gate (A1–A3).
- e) Cradle to gate with options (A1–A3 and additional modules). The additional modules may be A4 and A5.

The EPDs type "d" and "e" can only be used if all three of the following conditions are met:

- The product or material cannot be physically separated from other products after installation (at the end of life).
- The product or material is no longer recognizable after a physical or chemical change at the end of life.



• The product or material does not contain biological carbon.

If the packaging contains more than 5% biological carbon, module A5 must be included to balance out the emissions of this carbon.

# **3.0 NORMATIVE REFERENCE**

- 1. ISO 14025:2006, Environmental management Type III environmental declarations Principles and procedure.
- 2. ISO 21930:2017, Sustainability in buildings and civil engineering works Core rules for environmental product declarations of construction products and services
- 3. ISO 14044:2006, Environmental management Life cycle assessment Requirements and guidelines.
- 4. ISO 15686-1:2000, Buildings and constructed assets Service life planning Part 1: General principles.
- 5. ISO 15686-8:2008, Buildings and constructed assets Service life planning Part 8: Reference service life.
- 6. EN 15804:2012+A2:2019, Sustainability in construction works Environmental product declarations Core rules for the product category of construction products.
- 7. EN15942: 2011, Sustainability of construction works Environmental product declarations Communication formats: business to-business.

Note: The standards may be referred to in short format for readability. E.g. EN 15804:2012+A2:2019 is referred to as EN 15804 in this document.

#### 4.0 TERMS AND DEFINITIONS

#### **Environmental Product Declaration (EPD)**

Environmental declaration providing quantified environmental data using predetermined parameters and, where relevant, additional environmental information. (EN 15804:2012 definition of type III environmental product declaration)

#### Life cycle assessment (LCA)

Compilation and evaluation of the inputs, outputs and the potential environmental impacts of a product system throughout its life cycle (ISO 14044: 2006).

#### Declared unit

The quantity of a construction product for use as a reference unit in an EPD for an environmental declaration based on one or more information modules. (EN 15804)

#### Functional unit

The quantified performance of a product system for use as reference unit. (EN 15804)



Item manufactured or processed for incorporation in construction works

Note 1 to entry: Construction products are items supplied by a single responsible body.

(Source: ISO 6707-1:2014, 6.1.2, modified – with 'construction product' being indicated, instead of 'product' as the primary preferred term used to designate this concept.)

For further terms and definitions, refer to EN 15804, Section 3.

# **5.0 ABBREVIATIONS**

- EPD Environmental Product Declaration
- DU Declared Unit
- FU Functional Unit
- PCR Product Category Rules
- LCA Life Cycle Assessment
- LCI Life Cycle Inventory
- LCIA Life Cycle Impact Assessment
- RSL Reference Service Life
- ESL Estimated Service Life
- ICIS International Climate Intelligence System

#### 6.0 GENERAL CONDITIONS

The PCR outlines ICIS's method for creating EPDs for all construction products and services. The benefit of using a single PCR is that it ensures a consistent methodology for all product categories, supporting the modularity principle of ISO 21930 and EN 15804. This allows for easier combination of results from different subsystems.

This PCR document follows the requirements of EN 15804. Any information already included in EN 15804 is not repeated here. To make it easier to use, this document uses the almost same headings as EN 15804, with additional sub-headings as needed.

An EPD created using EN 15804 provides quantified environmental information for all types of construction products and services in a consistent and scientific way. The purpose of an EPD in the construction sector is to provide the foundation for evaluating buildings and other construction projects. This is done by identifying building solutions that have a lower environmental impact.

EPDs based on EN 15804 are not inherently comparative. This means that simply having two EPDs doesn't automatically allow for a direct comparison. Several factors can prevent comparability:



- Non-compliance with EN 15804: EPDs must follow the specific guidelines and standards set out in EN 15804 to ensure consistency and comparability.
- Lack of building context: EPDs should be considered within the context of their intended use in a building. Comparing products without understanding their specific applications can lead to inaccurate conclusions.
- Different functional units: A functional unit defines the amount of service a product provides. If EPDs are based on different functional units, it becomes difficult to compare their environmental performance directly.

Therefore, when comparing EPDs, it's essential to ensure that they meet all these conditions to avoid drawing misleading conclusions.

# 6.1 PCR STRUCTURE

The PCR structure applied in ICIS allows for the development of specifications in a Sub-PCR that provide additional product or service specific requirements to the requirements given in this document. Sub-PCR is optional if the EPD being developed is based on a declared unit. For most construction products, it is recognised that rules given in PCR are sufficient when developing an EPD based on a declared unit. PCR for construction products and services can therefore be used as basis for an EPD, even if a Sub-PCR has not yet been developed. However, this implies that the EPD is restricted to always use a declared unit, and not a functional unit.

Moreover, a declared unit does not include a full life cycle, and is not intended for comparison. An EPD that aims for comparison must be based on a full life cycle, and therefore use a functional unit. In this case, it is a requirement to develop Sub-PCR. The main reasons for developing a Sub-PCR is given below, but not limited to these aspects:

- The calculation rules have to be clarified for a specific construction product or service.
- To support inventory data, for instance where common generic data has to be accepted as specific (used by all).
- Make it possible to add additional environmental aspects or indicators to the EPD reporting format, which are common to that specific product group.
- Make it possible to publish an EPD for comparative purposes that, amongst other things, include the definition of a functional unit and harmonised scenario settings.

The structure of PCR approach simplifies the creation and understanding of PCRs. It avoids repeating information from PCR in Sub-PCR, which reduces redundancy and makes the system easier to maintain. This approach ensures modularity between different PCRs.

By referencing EN 15804 or PCR instead of repeating text, changes to PCR automatically update existing Sub-PCR documents. Therefore, all EPDs should reference the current version of PCR and, if necessary, the relevant Sub-PCR. Any future revisions to PCR will also affect all related PCRs,



potentially overriding specifications in Sub-PCR. To prevent confusion, it's recommended that these Sub-PCR documents be updated within a specific timeframe.

# 6.2 EPD Types

Following type of EPDs is possible for construction products as required by EN 15804;

- a) Cradle to gate with modules C1–C4 and module D (A1–A3 + C + D).
- b) Cradle to gate with options, modules C1–C4, module D and with optional modules (A1–A3 + C + D and additional modules). The additional modules may be one or more selected from A4–A5 and/or B1–B7.
- c) Cradle to grave and module D (A + B + C + D).
- d) Cradle to gate (A1–A3).
- e) Cradle to gate with options (A1–A3 and additional modules). The additional modules may be A4 and A5.



Figure 1

# 6.3 COMPARABILITY OF EPD OF CONSTRUCTION PRODUCTS

According to EN 15804.



# 6.4 ADDITIONAL ENVIRONMENTAL INFORMATION

According to EN 15804 and additional requirements given in this PCR clause 8.4, and:

#### 6.4.1 GENERAL ASPECTS

According to EN 15804.

#### 6.4.2 ADDITIONAL IMPACT INDICATORS

According to EN 15804 section 5.4.2

#### 6.5 ADDITIONAL INFORMATION

According to EN 15804, and -A manufacturer/producer can be the owner of the production facilities or the company that puts the product to the market (including an agent or a sales company). Module A3 shall be the physical manufacturing process, regardless of ownership of the EPD.

#### 6.6 GEOGRAPHICAL DETAIL

This PCR can be used globally, according to European standard EN 15804:2012+A2:2019/AC:2021 and the global standard ISO 21930:2017.

#### 6.7 COMMUNICATION TEMPLATE

EPD template and a standardised digital communication format for an EPD, according to EN 15804, have been established according to ILCD+EPD.

#### 6.8 MULTIPLE PRODUCTS EPD

Single/One EPD cannot include results for multiple, unrelated products. However, similar products from the same company, made in the same location, and following the same core processes can be grouped together in a single EPD.

There are options for declaring results in this case:

- Weighted average: Calculate the average results for each indicator based on the production volume of each included product. Declare this average in the content declaration.
- Representative product: Choose one product to represent the group and declare its results. Justify this choice using statistical methods, such as production volume. Declare the content of the representative product.
- Worst-case Values: For modules A to C, declare the worst-case result among all included products for each environmental performance indicator. This means you'll report the highest negative impact (e.g., highest emissions) for each indicator. Content Declaration:
  - Recycled and biogenic content: Declare the lowest amounts of recycled and biogenic content found in any of the included products and their packaging.



- Environmental and hazardous properties: Report the highest share of environmentally harmful or hazardous substances present in any of the included products.
- Other parts: Declare the average content for the remaining sections of the content declaration.

This option provides a conservative estimate of the environmental impact, ensuring that the EPD reflects the potential worst-case scenario for the group of products.

By following these guidelines, you can create accurate and comparable EPDs for groups of similar products. In addition to declaring the average, representative, or worst-case content as specified above, you must also include the range of content for the included products in the content declaration.

If you're EPD to comply with ISO 21930, the variation between the declared environmental impact indicator results for all included modules (A to C) cannot exceed 10%. If this condition is not met, you cannot use any of the options mentioned above. If your EPD doesn't need to comply with ISO 21930, variations of more than 10% are allowed. However, you must justify these variations in the LCA report and declare the variation for each impact indicator that exceeds 10%.

The option chosen shall be clearly described at the cover page of the EPD. This statement is a requirement for EPDs that include multiple products. It ensures that the methodology used to create the EPD is transparent and clear to users.

Suggestions for each option:

- "EPD of multiple products, based on the average results of the product group": This indicates that the EPD's environmental performance indicators are calculated by averaging the results of all included products.
- "EPD of multiple products, based on a representative product": This means that one product was chosen to represent the entire group, and its results are used to represent the environmental performance of all included products.
- "EPD of multiple products, based on worst-case results": This signifies that the EPD uses the most negative environmental impact (e.g., highest emissions) among all included products for each indicator.

By clearly stating the chosen option on the cover page, EPD users can understand how the environmental data was calculated and make informed decisions.

EPDs with average or representative results: GWP-GHG results for modules A1-A3 (or A1-A5 for services) cannot vary by more than 10% compared to any individual product. If variations are larger, they must be justified in the LCA report and disclosed in the EPD. EPDs with worst-case results: Even if using worst-case results, variations in GWP-GHG results must still be reported if they exceed 10%. Optional reporting of best-case product: EPDs can optionally report the GWP-GHG results of the "best-case product" (lowest GWP-GHG) in a separate subsection and include its content in the content declaration.



EPDs of identical products: While a variation of over 10% is technically allowed, it's recommended to separate EPDs by site to maintain a variation of less than 10%. This is because some national regulations consider an EPD "product-specific" only if the variation between sites is below 10%. EPDs covering multiple sites: If an EPD covers multiple manufacturing sites in module A3 (production stage), the sites must be listed in the EPD.

# 6.9 SECTOR EPD

Industry associations or groups of companies can develop sector EPDs representing the average product of multiple companies in a specific sector and region. Consistent functional unit: A common declared/functional unit must be used for all products included in a sector EPD.

Reporting variations: If GWP-GHG results for modules A1-A3 (or A1-A5) vary by more than 10% between products or sites, these variations must be reported in the EPD along with a qualitative explanation.

Communication of results: When communicating results from a sector EPD, it's essential to clarify that the data is based on sector averages and does not represent individual manufacturers or products.

# 7.0 LCA DEVELOPMENT

# 7.1 PRODUCT CATEGORY

This PCR is valid for any construction product or service. This PCR covers a broad spectrum of construction products, ensuring that environmental considerations are addressed across different sectors and applications. The inclusion of both construction elements and integrated technical systems allows for the assessment of a wide variety of products, from individual components to complete systems. This means it can be used to assess the environmental performance of various elements and systems used in construction, from basic materials to complex integrated technical systems.

# 7.2 LCA STAGES AND INFORMATION MODULES

#### 7.2.1 GENERAL

The life cycle stages or modules to be included in an EPD are dependent on the type of EPD given in 6.2. EPD's based on EN 15804 shall include the life cycle stages or modules as given in Figure 1 in 6.2. Besides the mandatory life cycle modules A1 – A3, it is up to each manufacturer to decide the scope of the EPD and the amount of life cycle information modules to be declared.

# 7.2.2 PRODUCT STAGE- LIFE CYCLE INFORMATION MODULES (A1-A3)

The product stage shall include, as given in standard EN 15804:2012, Clause 6.2.2

• A1 Raw material extraction and processing, processing of secondary material input (e.g. recycling processes),



- A2 Transport to the manufacturer,
- A3 Manufacturing, including provision of all materials, products and energy, as well as waste processing up to the end-of waste state or disposal of final residues during the product stage.

Module A1, A2 and A3 may be declared as one aggregated module, A1 - A3.

# 7.2.3 CONSTRUCTION PROCESS STAGE (A4-A5)

The construction process stage includes, as given in standard EN 15804:2012, Clause 6.2.3

- A4, transport to the building site,
- A5, installation into the building.

# 7.2.4 USE STAGE- LCA MODULES RELATED TO THE BUILDING FABRIC (B1-B5)

The use stage, relating to the building fabric includes, as given in standard EN 15804:2012, Clause 6.2.4

- B1 use;
- B2 maintenance;
- B3 repair;
- B4 replacement;
- B5 refurbishment.

# 7.2.5 USE STAGE - LCA MODULES RELATED TO THE OPERATION OF THE BUILDING (B6-B7)

The use stage related to the operation of the building includes, as given in standard EN 15804:2012, Clause 6.2.5

- B6 operational energy use;
- B7 operational water use.

# 7.2.6 END-OF-LIFE STAGE - LCA MODULES (C1-C4)

The end-of-life stage includes, as given in standard EN 15804:2012, Clause 6.2.6

- C1 de-construction, demolition;
- C2 transport to waste processing;
- C3 waste processing for reuse, recovery and/or recycling;
- C4 disposal.

# 7.2.7 BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY- LCA MODULE (D)

Module D includes, as given in standard EN 15804:2012, Clause 6.2.7

• D reuse, recovery, recycling and/or recovery potentials.

# 7.3 CALCULATION RULES FOR THE LCA

# 7.3.1 FUNCTIONAL UNIT OR DECLARED UNIT



The functional unit for EPD cradle to grave is defined as:

• e.g. 1 kg/tonne/m2/m3 of treated surface, with a specified function, properly maintained and repaired during a reference service life of 60 years.

Conversion factors are essential elements in Environmental Product Declarations (EPDs) that allow for the accurate calculation of environmental performance. When a functional unit is expressed in terms of a non-mass unit (e.g., square meters, liters), a conversion factor is needed to convert the results to a common unit, typically mass (kg). This ensures that the environmental performance can be compared consistently across different products.

Key points regarding conversion factors in EPDs:

- Consistency: Conversion factors help maintains consistency in environmental performance reporting by standardizing the units of measurement.
- Flexibility: Additional conversion factors can be included as needed to accommodate different units of measurement or specific applications.
- Transparency: The inclusion of conversion factors in EPDs enhances transparency and allows users to recalculate environmental performance based on their specific needs.

#### Example

If an EPD for a carpet tile uses the functional unit "square meters," a conversion factor should be provided to convert the results to "kilograms per square meter." This allows users to calculate the environmental performance of the carpet based on its mass, which is often a more relevant metric for comparison.

Note: Results shall not be reported as impact per year, but aggregated over the RSL.

#### 7.3.1.1 Functional Unit

As defined in EN 15804, in addition to: The use of a functional unit requires a Sub-PCR.

#### 7.3.1.2 Declared Unit

The declared unit for an EPD is cradle to gate and/or EPD cradle to gate with options, and is defined as:

• e.g. 1 <kg/tonne/m2/m3> of manufactured product, whereby mass (kg) is the preferable unit.

If the declared unit is not given by mass, where possible, a conversion factor shall be given in the EPD that makes it possible to recalculate the environmental performance to a mass unit (kg). Other conversion factors should be added, when relevant.

#### 7.3.2 REFERENCE SERVICE LIFE (RSL)



For EPDs that include stage B or a functional unit, a reference service life (RSL) is required. If an exact RSL can't be determined, an estimate or a common estimated service life (ESL) can be used. However, the EPD should explain the source of this estimate.

If the EPD reports both use stage and functional unit and uses a reference service life, the specific settings for that RSL must be documented according to EN 15804, Table 13.

Additionally, if relevant, it's acceptable to assume that the construction product will last as long as the building part it's used in, as defined by NS 3451: 2009.

# 7.3.3 SYSTEM BOUNDARIES

EN 15804 gives a detailed description of what is included in each life cycle information module. These module descriptions are valid in PCR without exceptions.

Note: The environmental impact related to electricity use in life cycle module A3 – Manufacturing is treated differently in EN 15804 and ISO 21930. In EN 15804 it is included as a raw material input and is accounted for in life cycle module A1. In ISO 21930 it is included as part of the manufacturing and is accounted for in life cycle module A3. Aggregated results for A1-A3 will be the same, so this is difference is not relevant for the EPD user when A1-A3 is aggregated.

# 7.3.4 END OF LIFE STAGE

As in EN 15804, and:

- Treatment of hazardous waste shall always be considered as waste processing.
- If the existence of a market or demand is not clear (e.g. when there are no agreedupon end-of-waste criteria) the justification shall be shown in the LCA project report.

# 7.3.5 CRITERIA FOR THE INCLUSION OF INPUTS AND OUTPUTS (CUT-OFF)

Personnel-Related Processes

According to EN 15804, personnel-related processes, such as the transportation of employees to and from work, should generally not be accounted for in an EPD. This is because these activities are often considered personal activities and not directly related to the production or use of the product.

Infrastructure/Capital Goods -The treatment of infrastructure/capital goods is more nuanced:

Exclusion: Generally, the production and end-of-life processes of infrastructure or capital goods used in the product system should be excluded. This is because their environmental impacts are often significant and can introduce complexity into the analysis.

Inclusion Criteria: However, there are exceptions:



Relevance: If there's evidence that the infrastructure/capital goods have a significant environmental impact, they should be included.

Generic LCI Datasets: If using a generic LCI dataset that includes infrastructure/capital goods and it's not feasible to remove this data, then the infrastructure/capital goods should be included. Single-Use Infrastructure: If the infrastructure/capital good is produced for a one-time or limited use (e.g., a manufacturing plant built for a specific product), it should be included.

If infrastructure/capital goods are included, the following disclaimer shall be included in the results sections of the LCA report and in the EPD (land use and toxicity indicators shall only be mentioned if declared in the EPD):

If infrastructure/capital goods are included, the following disclaimer shall be included in the results sections of the LCA report and in the EPD (land use and toxicity indicators shall only be mentioned if declared in the EPD);

"The results of the impact categories abiotic depletion of minerals and metals, land use, human toxicity (cancer), human toxicity (noncancer), and ecotoxicity (freshwater) may be highly uncertain in LCAs that include infrastructure/capital goods from generic datasets. This is due to potential limitations in the LCI data used to quantify these indicators, which may lack temporal, technological, and geographical representativeness. Caution should be exercised when using the results of these indicators for decision-making purposes".

# 7.3.6 SELECTION OF DATA

EN 15804, Clauses 6.3.7 and 6.3.8 outline general requirements and guidelines for using both generic and specific data in EPDs, along with their quality standards. In addition to this, the below rules to be followed;

- Manufacturing Data: Use either average annual data or site-specific data for manufacturing processes. Any deviations from this should be justified and explained in the EPD.
- Data Age: Clearly state when the data was collected.
- Upstream Processes: Prioritize using EPDs for upstream processes. If EPDs aren't available, opt for specific data. Only use generic data as a last resort.
- PCRs: If PCRs (Product Category Rules) exist for other background data, follow the procedures outlined in those PCRs.

A1-A3	A4-A5	B1-B7	C1-C4	D



Modules	Production of	Product	Construction	Use	End-of-life	Next
commodities,		manufacture	processes	processes	processes	product
	raw materials					system
Process Upstream		Processes the	Downstream processes			
Туре	Type processes					
		has				
		influence over				
Data Type	a) Specific	Manufacturer's	Generic data			
	EPD data	average or site				
	b) Specific LCI	specific data				
	data					
	c) Generic					
	data					

# 7.3.6.1 ELECTRICTY DATA

LCIA results shall be calculated using the physical national grid mix. In addition, the LCIA results may be calculated using electricity sources with a guarantee of origin. If guarantees of origin are used, the LCIA results shall be reported separately in addition to the LCIA results using the physical national grid mix.

Note: ISO 14067 provides guidance on how to reduce the risk of double counting when using guarantees of origin.

For the physical grid mix, it shall be from the country where energy consuming processes take place. The mix of electricity (calculation procedure) shall be documented in the LCA report. Any deviations from these requirements shall be justified. The electricity mix used shall be the national production mix, including imports, direct emissions, infrastructure and transmission losses. If the available LCI data does not follow this approach for electricity consumed in A3 and A5, then a calculation based on statistics has to be performed.

When manufacturers purchase guarantees of origin for their electricity, they can use these to calculate additional, separate LCIA results.

Here's how to use guarantees of origin for electricity:

- Specific Data: Use average electricity mix data from the past 3-5 years if the mix isn't stable.
- Upstream Processes: If guarantees of origin aren't used for upstream processes, you can use data from commercially available databases for the relevant country.
- Downstream Processes: Don't use guarantees of origin for downstream processes (B1-B7, C1-C4, D).
- Validity: Ensure that guarantees of origin remain valid throughout the EPD's validity period. If the guarantee expires, the EPD's validity also ends.



For European countries, consider using data from ENTSO-E to calculate the physical electricity mix.

# 7.3.6.2 LOSSES TAKEN INTO ACCOUNT

If this information is lacking in the national average, grid losses may be used.

#### 7.3.7 DATA QUALITY REQUIREMENTS

The LCA project report should discuss the data quality used in the EPD calculations (refer to Chapter 8 and ISO 14044:2006, Clause 4.2.3.6). EN 15804:2012, Clause 6.3.7 provides specific requirements for construction products.

#### 7.3.7.1 GENERAL

According to EN15804

#### 7.3.7.2 DATA QUALITY REQUIREMENTS

As detailed in section 6.8 and 6.9

# 7.3.8 DEVELOPING PRODUCT LEVEL SCENARIOS

Scenarios for construction, use, end-of-life and transport shall be described and documented in the LCA report according to EN 15804:2012, Clause 7.3

Example Scenario:

- Product: Concrete block
- Construction: Urban site, mechanized construction, local materials sourcing
- Use: Residential building, moderate occupancy, regular cleaning, HVAC system
- End-of-Life: Landfill disposal, no salvage value, compliance with local regulations
- Transport: Truck transportation, short distances, minimal packaging

#### 7.4 INVENTROY ANALYSIS

Data collection shall follow the guidance provided in ISO 14044:2006, Clause 4.3.2. The same calculation procedures shall be applied consistently throughout the study in life cycle information module A to C. When transforming the inputs and outputs of combustible materials into inputs and outputs of energy, the net calorific value of fuels shall be applied according to scientifically based and accepted values, specific to the combustible material.

#### 7.4.1 COLLECTING DATA

According to EN 15804.

#### 7.4.2 CALCULATION PROCEDURES

According to EN 15804.

#### 7.4.3 ALLOCATION OF INPUT FLOWS AND OUTPUT EMISSIONS



# 7.4.3.1 **GENERAL**

According to EN 15804.

# 7.4.3.2 CO-PRODUCT ALLOCATION

The purpose of this section is to align the requirements in EN 15804 and ISO 21930 with the following clarifications;

- Joint Co-production Definition: Processes where one product can't be produced without the other(s), or where the product ratio varies significantly, are considered joint co-production.
- Revenue and Physical Relationships: If there's a large difference in revenue between products and co-products, it suggests that their physical relationship is less important. In these cases (including joint co-production), the process inventory should be allocated based on the economic value of the co-products when they leave the process.
- Inherent Properties: The energy and material content of products should always follow the physical flow.
- Economic Value Assessment: To assess the economic value of co-products, consider the proportion of revenue each generates. Revenue is calculated by multiplying price and output. Use representative values (like rolling annual averages) for both.

#### 7.4.4 INFORMATION ON BIOGENIC CARBON CONTENT

According to EN 15804.

#### 7.5 IMPACT ASSESSMENT

The impact categories listed in EN 15804 shall be used, including the additional indicators listed in Clause 7.2.3. Supplementary indicators may be added, however this requires the development of a Sub-PCR unless they are reported as additional environmental information.

#### 7.5.1 GENERAL

According to EN 15804.

#### 7.5.2 CORE ENVIRONMENTAL IMPACT INDICATORS

As specifications given here in section 6.4.2 and with the following clarifications:

ISO 15804:2012+A2:2019 specifies that the unit for the indicator for Eutrophication aquatic freshwater shall be kg PO4eq., although the reference given ("EUTREND model, Struijs et al., 2009b, as implemented in ReCiPe") uses the unit kg Peq. This is likely a typo in EN 15804+A2 which is expected to be corrected in a future revision. Until this has been corrected in EN



15804+A2, results for Eutrophication aquatic freshwater shall be given in both kg PO4 eq. and kg P eq. in the EPD.

#### 7.5.3 ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS

According to EN 15804.

#### **8.0 CONTENT OF THE EPD**

#### 8.1 DECLARATION OF GENERAL INFORMATION

The content of the EPD shall follow the instructions given in EN 15804 Clauses 7.1 and 7.2. The EPD template from ICIS provides requirements and guidelines for the content and format of the EPD. Pages 1, 2 and the last page of the EPD template are mandatory.

Note: For transparency, it is recommended to report separately on indicators related to issues under development. Examples where this may be applicable are biogenic carbon, greenhouse gas emissions from direct land use change, carbonation, etc.

#### 8.2 DECLARATION OF ENVIRONMENTAL PARAMETERS DERIVED FROM LCA

#### 8.2.1 GENERAL

Documentation of technical information for the construction process shall follow the requirements given in EN 15804 Clause 7.3.2.

#### 8.2.2 RULES FOR DECLARING LCA INFORMATION PER MODULE

The rules shall follow EN 15804 Clause 7.2.2.

#### 8.2.3 INDICATORS DESCRIBING ENVIRONMENTAL IMPACTS BASED ON LCIA

Parameters describing environmental impacts shall follow the requirements given in EN 15804 Clause 7.2.3 with the addition of the general disclaimer given in section 5.4.2: "These indicator results are based on characterisation methods that still need development and the use of the indicator result is therefore limited."

#### 8.2.4 INDICATORS DESCRIBING RESOURCE USE & ENVIRONMENTAL INFORMATION

According to EN 15804.

#### 8.2.5 INFORMATION ON BIOGENIC CARBON CONTENT

According to EN 15804

#### 8.3 SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION

#### 8.3.1 General



Documentation of technical information for the construction process shall follow the requirements given in EN 15804 Clause 7.3.2.

# 8.3.2 A4-A5 CONSTRUCTION PROCESS STAGE

# 8.3.2.1 A4. TRANSPORT FROM PRODUCTION SITE TO THE CONSTRUCTION SITE

The construction or service site transportation stage shall be specified accord to EN 15804, Table 10 for construction products and for services, if relevant. If no official statistic is available, including statistics from the manufacturer, then estimated transport scenarios and distances may be used and documented in the EPD. It must then be stated that the scenario is based on an estimated figure, and the scenario should document what it is geographically representative of. It is also possible to include numeral transportation scenarios. i.e. different alternatives for A4 in the same EPD and results table.

#### 8.3.2.2 A5. INSTALLATION

The installation life cycle module shall be specified according to EN 15804, Table 11. The installation phase includes all materials and activities connected to installation. If the EPD deviates from the predefined scenarios in Sub-PCR, then this shall be clearly stated and justified. Installation also includes the core process of a service. The scope of what is allocated in life cycle module A5 shall be reported in the EPD.

#### 8.3.3 B1-B7 USE STAGE

The use stage shall be specified accord to EN 15804, Table 12 and Table 14.

#### 8.3.4 C1-C4 END-OF-LIFE

The end-of-life stage shall be specified according to EN 15804, Table 15.

#### 8.4 ADDITIONAL INFORMATION

This clause has a wider scope compared to EN 15804, and includes additional information not derived from LCA.

# 8.4.1 ADDITIONAL INFORMATION ON RELEASE OF DANGEROUS SUBSTANCES TO INDOOR AIR, SOIL & WATER – INDOOR AIR

According to EN 15804, in addition to the following requirement:

# 8.4.2 ADDITIONAL INFORMATION ON RELEASE OF DANGEROUS SUBSTANCES TO INDOOR AIR, SOIL AND WATER: SOIL AND WATER

According to EN 15804



# 8.4.3 GREENHOUSE GAS EMISSIONS FROM ELECTRICITY USE IN A3 MANUFACTURING

The EPD must show the global warming potential (GWP) of the electricity used by the manufacturer. This is reported as kilograms of CO2 equivalents per kilowatt-hour (kgCO2/kWh) or kilograms of CO2 equivalents per mega joule (kg CO2/MJ). The EPD should also specify if the electricity is reported in A1 (according to EN 15804) or A3 (according to ISO 21930).

If the electricity used in manufacturing (A3) is based on guarantees of origin or similar instruments, the EPD must report both the results calculated using guarantees of origin and the results calculated using the physical national grid mix. This additional reporting is only required for global warming potential (GWP). This is done for transparency purposes.

# 8.4.3.1 HAZARDOUS SUBSTANCES AND CONTENT DECLARATION

Products for the European market shall declare:

Substances of Very High Concern (SVHC): If the final product contains more than 0.1 % (weight by weight, w/w) of substances defined as Substances of Very High Concern (SVHC), these shall be listed in the EPD along with the authorisation to use the substance(s). The REACH Authorisation List contains a registry of SVHC. Substances on the REACH Authorisation List may be found at: https://echa.europa.eu/authorisation-list.

# 8.4.3.2 CARBON FOOTPRINT - Optional

The EPD can include additional information about the carbon footprint. This might include carbon footprint declarations based on standards like ISO 14067 or EN 15804:2012+A1:2013, or separate reports on indicators related to emerging carbon footprint issues.

#### 8.4.3.3 ADDITIONAL LCIA INDICATORS

The EPD can include additional LCIA indicators beyond those defined in EN 15804. However, these indicators must be clearly labelled to prevent confusion. A statement should be included stating that these additional indicators are not necessarily compliant with EN 15804:2012+A2:2019 and should be used with caution.

#### **8.5 AGGREGATION OF INFORMATION MODULES**

Environmental indicators declared in the individual life cycle information modules shall not be added up into any combination of a total or sub-total for the life cycle stages A, B, C or D. There is one exception, whereby life cycle information modules A1, A2 and A3 may be aggregated into A1 - A3.

#### 9.0 PROJECT REPORT

The project report is a detailed summary of the project documents used to verify an EPD. It includes LCA information and additional details declared in the EPD, following the requirements of EN 15804 and PCR Part A. The project report is not meant for public communication. It should follow the guidelines in ISO 14044 Clause 5.2 and EN 15804 Clause 8.



#### **10.0 VERIFICATION AND VALIDITY OF AN EPD**

The verification process for an EPD should follow the guidelines in EN ISO 14025 Clause 8 and ISO 21930 Clause 9. Once verified, an EPD is valid for five years. If the underlying data hasn't changed significantly, the EPD doesn't need to be recalculated or revised after five years.

#### **11.0 REFERENCES**

- 1. EN 15978:2011: Sustainability of construction works Assessment of environmental performance of buildings calculation method.
- 2. EN 15251:2007: Indoor environmental input parameters for design and assessment of energy performance of buildings addressing indoor air quality, thermal environment, lighting and acoustics.
- 3. EN 16760:2015 Bio-based products life cycle assessment

#### **12.0 DOCUMENT REVISION HISTORY**

Version	Date	Revision Description
1.2.1	20.05.2020	First Version
1.2.2	18.09.2020	Changes made to section 6.5
1.2.3	18.09.2021	Changes made to section 6.6
1.2.4	18.01.2022	Changes made to section 6.8
1.2.5	01.11.2022	Current Version