
GENERAL INSTRUCTIONS FOR THE DAPHABITAT SYSTEM



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I. Context

1. Objective

The main goal of the General Instructions for the DAPHabitat System is to ensure the registration program works correctly and coherently. This document establishes transparent procedures for the creation and validation of the Product Category Rules (PCR) and for the creation, verification and registration of the Environmental Product Declarations (EPD), type III environmental declarations (ISO 14025), carried out within the DAPHabitat System.

This document was prepared according to the standard requirements (ISO 14025:2009) that guarantee the reliability of the DAPHabitat System.

II. The DAPHabitat System – National EPD Registration System

1. General Thoughts

The DAPHabitat System is a registration program of EPD for a rank of products in the habitat field. This national registration program allows that any interested company or entity can request the development of PCR documents or register EPD, regardless the country of origin.

The DAPHabitat was developed with the aim to communicate the environmental performance of products, through EPD, so that the manufacturer and producers can use this credible and reliable communication tool in the national and international markets. The development and operational of EPD program and EPD are voluntary.

2. Objectives

The main objective of DAPHabitat System is to disseminate information from organizations of the environmental performance of its products on national or international markets.

To achieve this purpose, the DAPHabitat System focuses its work in the development and/or adaptation of PCR documents and in the EPD registration for all products and services involved in the building and other construction works, belonging to the habitat field.

The EPD registration helps to verified information about environmental performance of products be visible.

The EPD registration helps to make visible the information about the environmental performance of products, which was previous verified.

The EPD as a communication tool helps the manufacturers' to develop environmentally acceptable products, as well as encourage the purchase of products covered by reliable environmental information. When developing an EPD the accurate and verified information can stimulate the continuous improvement of construction products. On one hand, the manufacturers know in detail the performance of their products and can identify opportunities for improvement leading to a reduction of the negative environmental impact. On the other hand, at the time of the acquisition of product for the habitat, customers (companies or users) may find their choice through reliable information.

The EPD from other registration programs may not be comparable with the EPD registered in the DAPHabitat System. ISO 14025 recommends not duplicating efforts in the development of PCR documents, facilitating wherever it is possible the recognition and adoption of Product Category Rules developed by other registration programs. This is a key issue to avoid obstacles in the commercialization of products in markets that consider the requirement of EPD. To achieve this goal, the DAPHabitat System considers the possibility of recognizing and adopting PCR documents from other European registration programs according to some requirements aligned with ISO 14025 and the main objectives of ECOPlatform (International Non-Profit Association established by European EPD Program Operators registering ECO Platform EPD's, European Trade Associations in the building and construction sector and LCA Practitioners), where DAPHabitat is a founding member.

Sticking to the main goal, assist and support organizations that intend to communicate the environmental performance of its products, DAPHabitat System provides two databases, one corresponding to the publication of the PCR documents developed and another corresponding to the list of verified and registered EPD in Portugal, according to the procedures described herein. The EPD and PCR documents have validity periods, giving these databases an updated basis, ensuring updated information sources about the products.

3. Organizational Structure

The DAPHabitat Systems is organized according to the following administrative and functional structure, following the NP ISO 14025:2009, as illustrated in the Figure 1. There are structures that assume different roles and responsibilities, allowing this registration program to operate in a transparent manner.

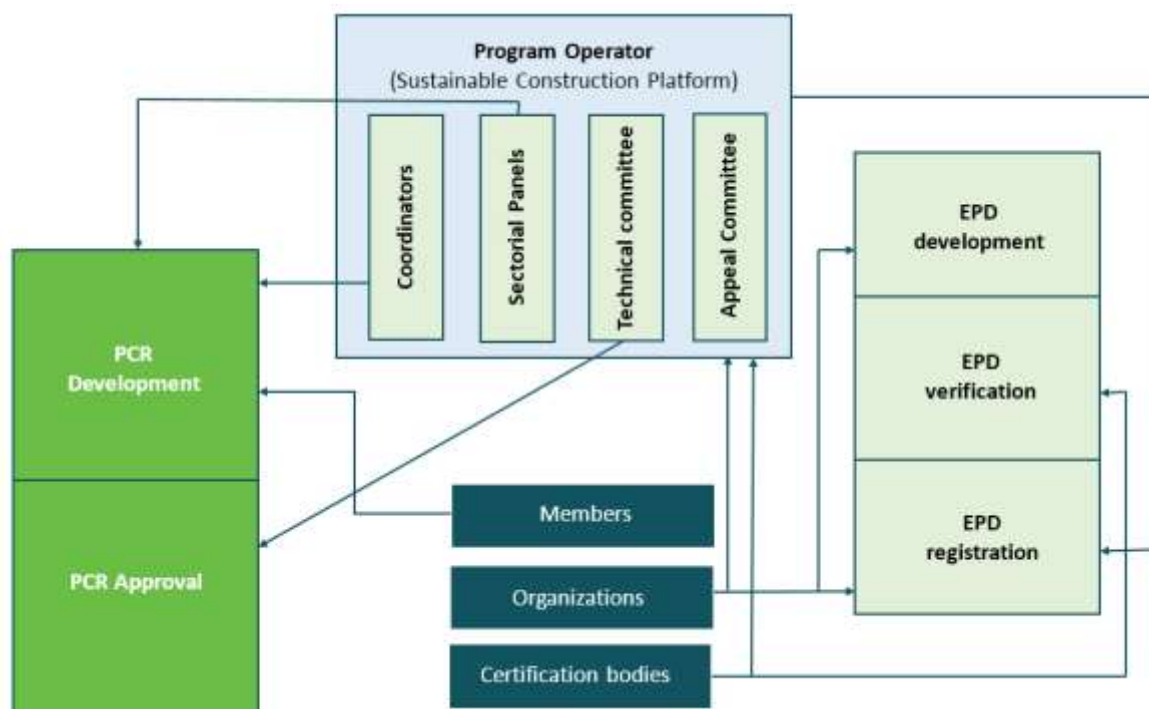


Figure 1. Organizational structure of DAPHabitat System

The organization of DAPHabitat System is divided according to the development of PCR documents, recognition and adoption of the PCR documents from other registration programs; EPD development, EPD verification and their inclusion in the program database.

3.1. Administration

The DAPHabitat System is managed by the Sustainable Construction Platform. In this EPD program, the administrator is named Program Operator (PO).

Identification	Sustainable Construction Platform
NIF	509 037 321
Location	<u>Delegation:</u> Departamento de Engenharia Civil Universidade de Aveiro 3810-193 Aveiro Portugal
Contact	deptecnico@centrohabitat.net
Website	www.centrohabitat.net

The PO should assure that the following information is available:






- General Instructions for the DAPHabitat System;
- List of all the PCR documents developed in the scope of the DAPHabitat System;
- EPD registered in the DAPHabitat System;
- Explanatory material, when necessary.

The PO is a key agent in the work of the DAPHabitat System, being responsible for the following functions:

- Prepare, revise and communicate the General Instructions of the DAPHabitat System, in cooperation with the Technical Committee;
- Publish the entities involved in the program;
- Assure the choice of skilled professionals to take part of the Technical Committee of the DAPHabitat System, giving them information on what will be their functions, namely those referring to the revision and approval of the coherence of the PCR documents developed throughout this registration program;
- Establish a clear and coherent procedure for the elaboration of a PCR;
- Cooperate with specialists in the elaboration of a PCR, that will determinate the development of a guideline of an environmental product declaration Type III;
- Guarantee that the developed EPD are in accordance with the standard requirements and DAPHabitat rules;
- Publish the PCR and EPD documents developed in the registration program;
- Management of PCR document lists and EPD registrations available to the public at www.daphabitat.pt;
- Assure that the certification parts are qualified to carry out their functions;
- Assure the quality in the selection of the qualified verifiers for the verifiers pool;
- Assure the qualification of the members that take part of the PCR revision panel (technical committee);
- Establish a clear and reliable procedure for the revision process of a PCR and make available the identification of the members that belong to the revision group of these documents;
- Monitoring the changes made in the procedures and documents of the other EPD registration programs and get a revision of the procedures and documents, when necessary;
- Manage and settle the price of the EPD registration and maintenance fees;
- Participate in ECO-Platform activities;
- Establish the communications with the ECO-Platform;
- Assure the ECO-Platform rules;
- Establish the logo and brand procedures of the DAPHabitat System.

3.2. Technical Committee

The technical committee consists in a group of technical experts on LCA and specific skills in various sectors from habitat fields. One of the main purposes of this Committee is the technical and scientific assistance to the registration program on issues relating to the Product Category Rules, the Environmental Product Declarations and Life Cycle Assessment. The Technical Committee is the panel for the approval and validation of the developed PCR and review panel. This group consists of invited members by the PO, respecting the detention of the necessary skills that are described below:

-  Knowledge of the general context of the sector, product and environmental aspects related with the product;
-  LCA expertise and corresponding working methodologies;
-  Knowledge of the relevant labelling , environmental declarations and LCA rules;
-  Knowledge of applicable PCR rules;
-  Knowledge of the EPD registration program.

3.3. Members

The members of the DAPHabitat System are all of those that register on www.daphabitat.pt. The registration allows the members to have access to developed PCR database and the possibility to participate by giving their opinion, within the public consulting stage inherent to the elaboration of the documents. This procedure of cooperation is developed through the EPD Forum and the PCR Forum, a tool available at www.daphabitat.pt.

3.4. Certification Bodies

The DAPHabitat System guarantees the clarity and independence of the verification process of the EPD because it can only be registered when the documents (EDP and project report) were submitted and approved in a verification process required by the registration program. The verification process is made by verifiers that are part of the “verifiers pool” managed by certification bodies (third independent party), recognized by the PO. The recognition of an entity as a certification body of the DAPHabitat System is done accordingly with the procedure mentioned in line 6.3.1. chapter IV.

The identification of the recognized entities as certification body of the DAPHabitat System should be available at www.daphabitat.pt.

3.5. Verifiers










The verifiers are qualified professionals that will integrate the “verifiers pool” managed by the certification body approved by the PO. The admission of the verifiers should be done accordingly with the procedures and demands mentioned in line 6.3.2. of this document.

The verifiers are responsible for deciding if the EPDs, elaborated by an organization, are in accordance with the corresponding national and international requirement of the rules, and also with required procedures of the registration program. To authenticate the verification of an EPD, the verifiers should prepare a report of the procedure of the verification made, accordingly with the predetermined format (in accordance with ECO-Platform rules) given by the corresponding certification body. This report may be available to the public, if required.

3.6. PCR Moderators

The development of the PCR documents should be led by specialists/experts in the LCA methodology and experts in the requirements and operation of the DAPHabitat System.

When the necessity of developing a PCR document arises, the Sustainable Construction Platform should assign at least one moderator responsible to develop the following tasks:

-  Develop a draft of the PCR document, by applying the required procedure, according to the requirements of the reference standards, considering the PCR documents of similar products developed by other European registration programs;
-  Evaluate the necessity of developing new LCA studies in order to complete the draft of the document;
-  Coordinate the organization of the sectorial panel with the program operator;
-  Gather the comments of the sectorial panel and the Technical Committee concerning the presented version of the PCR and include them in the document;
-  Manage the public consulting together with the PO, this is, gathering the relevant information mentioned in the PCR Forum or sent by email to the PO;
-  Manage the authentication of the PCR document accordingly to the gathered comments (PCR Forum and Technical Committee);
-  Elaborate the final draft of the document;
-  After the approval of the final version, the members of the DAPHabitat should be informed that the new PCR document is available in the data base of the registration program;
-  Keeping the PCR document in discussion, collecting with the PO, the comments for improvement that are given, so that they can be considered in the revision period.

During the development of the PCR it is recommended to provide scientific articles or other relevant documents at www.daphabitat.pt. The selection of the publications that should be available is the responsibility of the coordinator and the PO.

3.7. Sectorial Panel

The sectorial panel is constituted by representatives of companies, corporate associations or other entities and specialists in a certain product category. This sectorial structure is expressed through a consulting and participation mechanism where parties interested in the process of developing the PCR determine how the LCA study should be made.

For each PCR document, the PO and the coordinator should gather the most appropriate sectorial panel. This procedure should be carried out with a notice of convocation by email describing the process and the work tasks. It is the responsibility of the coordinator and the PO to gather the opinions and comments that appear from this work group and include them in the document so that it can be validated by the Technical Committee.

The coordinator and the PO can decide to create a sectorial panel, although this is not mandatory. The participation of these groups in the development process of the PCR can be independent from the public consultation phase (addressed to the members of the DAPHabitat System) that will happen at the PCR Forum, this is, the PCR document can also be discussed in a private group through the tool available at www.daphabitat.pt (PCR Forum).

3.8. Appeal Committee

The Appeal Committee is part of the organizational structure of the DAPHabitat System and its function is to assist the solicitant organization in case of complaints or appeals concerning the decision of the EPD verification made by the certification bodies.

This Appeal Committee is constituted by a minimum number of three elements, including the PO and Technical Committee representatives, accordingly with the area of the complaint.

The documentation concerning the EPD registration process in the database (project report, EPD and verification report) is available in the DAPHabitat System during a period of one year from the validation date of the EPD.

III. PCR Development

1. Context

Given the increasing potential of internationalization of the organizations (companies, corporate associations, etc.) through the effective demonstration of the environmental performance of their products, the EPD appears as a reliable communication tool of the technical features and environmental aspects of the products. Nowadays, an increasing concern with the environmental performance of the products used in the habitat arises, consequently there is a need to implement measures that allow the decrease of the environmental pressure caused by the extraction process of raw material, product manufacturing, application, use and maintenance until their final disposal and elimination.

The main objective of the EPD for products of the habitat is to clarify quantitatively the environmental performance of the products, responding to the expectation of the markets. These declarations are made with a set of information that describes a product environmentally. LCA-based EPDs intend to compare products that have equivalent functions. To achieve this goal, harmonized calculation rules have to be established to ensure that similar procedures are used when creating EPDs from the same product category.

Given the exportation of products it is necessary to harmonize the development of the PCR on an international level, which for the construction products and services is done through the new European Standards EN 15804:2012+A1:2013.

2. PCR Definition

It is fundamental that the DAPHabitat System is accepted in the national and international markets, based on a transparent procedure that identifies and defines the category of the product for the habitat in a useful and well-structured document – PCR.

PCR are documents that include a set of rules, prerequisites, and specific guidelines for the EPD development, such as: parameters to declare, life cycle stages to consider in the processes, rules for the elaboration of scenarios, life cycle inventory data and assessment of the impact categories, additional environmental data rules, conditions for comparing products/services and EPDs registration in the DAPHabitat System's database, issues related to the verification and registration of the EPD on the DAPHabitat System and other information considered important.

The PCR are "living" documents that can be changed over the time in case of significant alterations in the LCA methodology or in the technological development of a given product. Any published PCR document should be verified and the necessary changes should be announced in the PCR Forum. This type of

regulating document has a validation period up to five years, assuring the revision and the update of the content.

The elaboration of a PCR document is composed by several development stages (**Erro! A origem da referência não foi encontrada.**), moderated by the coordinators.

After the development of the document draft for the PCR, the coordinator should send it to the PO, which should direct it to the Technical Committee, so they can verify the precision of the document namely the fulfillment of the normative requirements and General Instructions of the DAPHabitat System. This procedure assures that the EPD, developed based on the future PCR document, will contain the relevant environmental aspects of the product/service. In a final stage the PO will approve the final document and publish it in the data base of the DAPHabitat System at www.daphabitat.pt.

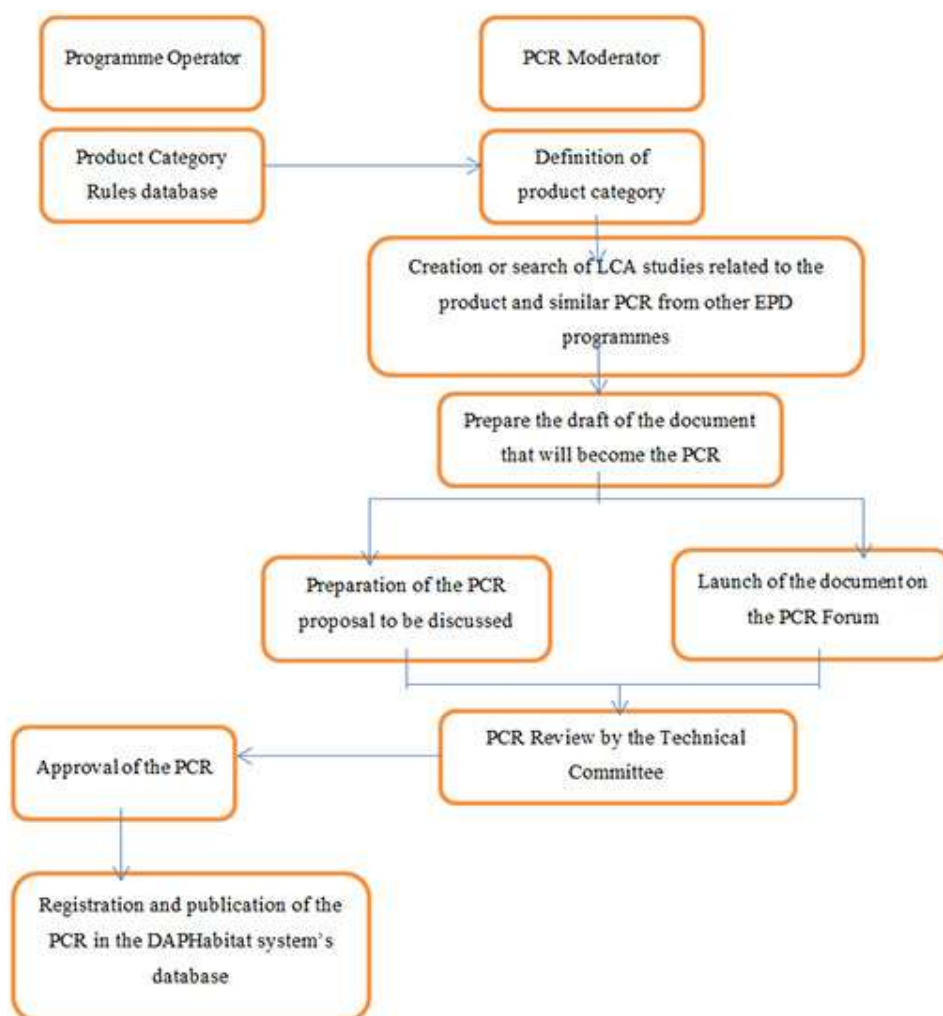


Figure 2. Development process of the PCR

3. Content Of The PCR Documents

Accordingly to the ISO 14025:2009 the PCR should be structured in a document that identifies the objective and the scope of the information based on the LCA study for a product category and the rules used in the production of additional environmental information for the same category. This document should also determine the stages of the life cycle to be included, the information modules to include and the way how these can be grouped and presented. The PCR should be based on one or more LCA studies (accordingly with the standard ISO 14040 and ISO 14044) and other relevant studies, allowing the requirements for additional environmental information be identified.

The PCR document should include:

- ☰ Definition and description of the product category (e.g.: function, technical performance and use);
- ☰ Definition of the objective and scope of the LCA of the product (e.g.: functional unit, border of the system, description and quality of the data, criteria for the inclusion of inputs and outputs and the units to be used);
- ☰ Results of the inventory analysis (e.g.: data collection, calculation procedure and allocation of the materials, energy and emission flows);
- ☰ Selection of the impact categories and calculation rules, if applicable;
- ☰ Predetermined considerations for the presentation of the LCA data (data category of the inventory and indicators of impact category);
- ☰ Requirements to provide additional environmental information, including all methodological requirements (e.g.: specifications to identify dangers and risk analysis);
- ☰ Materials and substances to be declared (e.g.: information about the product. Including the material specification and substances that can have a harmful effect on the human and/or environmental health in all of the life cycle stages);
- ☰ Instructions for the data production implicit in the declarations development (LCA, LCA Inventory (LCI), information module and additional environmental information);
- ☰ Instructions concerning the content and format of the EPD;
- ☰ Information about the stages that are not considered, in case the declaration is not based on a LCA that covers all the life cycle stages;
- ☰ Validation period of the document.

If one of these parameters is not considered, it should be properly justified in the document.

3.1. PCR Basic Modules

The development of a PCR document is vital for the EPD registration programs and it is a complex process that involves an extensive period of development, comprising various stakeholders and several stages.

In the DAPHabitat System the development of the *PCR document: Basic Module for products and construction services*, in accordance with EN 15804, was considered important. This draft document aims to simplify and harmonize the creation of specific PCR documents, developing documents with similar appearance and structure and avoiding long documents that might contain the same information. Thus, the *PCR document: Basic Module* summarizes the main content and covers all the product categories of the construction sector, according to the specifications of the EN 15804.

The *PCR document: Basic Module* describes the general calculation rules to conduct LCA studies and the preparation of an EPD registration in the DAPHabitat System referring to all products and construction services for buildings and other construction works, while establishing technical guidelines for the preparation of the Project Report to be delivered along with the EPD for the verification process.

As mentioned in the version 1.1 of the General Instructions of the DAPHabitat System the development of an EPD through the PCR document: basic model Version 2.0 (or most updated) is allowed if:




- i. there is no specific PCR document in the DAPHabitat System or other registration program belonging to ECOPlatform;
- ii. a PCR document exists in another registration program belonging to ECOPlatform, although it cannot be recognized and adopted by DAPHabitat.

3.2. Specific PCR

A specific PCR document referring to a product category, under the construction products and services, must define at least the Reference Service Life (RSL), the functional unit and the declared unit applicable to the product category that represent. All specific PCR to be published in the DAPHabitat System database have to be submitted to a public consulting process, as well to the approval of the Technical Committee. The methodology for developing a specific PCR document is detailed in the next chapter.

4. PCR Development Process

A PCR document can be developed accordingly with at least 3 initiatives:

-  The organization that intends to develop an EPD requests the PCR document to the PO;
-  The organization develops and delivers a draft document to the PO for validation and publication in www.daphabitat.pt;
-  Development of the document by initiative of the PO.







The three initiatives presented for the development of a PCR document have different starting points, therefore they are in different development stages. The presented procedure shows the preparation process of a PCR document developed from the initial contact with the PO. However, in any of these cases, the PO should always be contacted so that, accordingly with the development stage of the document, it can evaluate and suggest the stages to be included in the validation and registration of the document at the DAPHabitat System at www.daphabitat.pt.

The development of the PCR documents should take place accordingly with the following stages:

- 1) Initiation;
- 2) Preparation;
- 3) Consulting;
- 4) Validation and Approval;
- 5) Publication;
- 6) Update.

4.1. Initiation

The initial development stage of these documents intends to determine the essential characteristics that will be an indispensable part of all the process. The initiation phase is divided in the following steps:

-  Indication of at least one Moderator for the development of the PCR document;
-  Assessment of available PCR;
-  Indication of LCA/PCR experts;
-  Definition and constitution of the sectorial panel;
-  Participation of the Technical Committee;
-  Announcement of the initiation of the PCR work.

4.1.1. Indication of the PCR Moderator(s)

The PO is responsible for the indication of a Moderator for the initiation process of each PCR document, which should consider specialists in LCA/PCR and experts on the registration program. This stage consists on the indication of someone responsible for the PCR document to be developed, that should coordinate

the work of the authors and the intervention of the interested parties. The Moderator of the PCR should guarantee in this initial stage:

- The participation of the interested parties in the development of the PCR document, accordingly with the sectorial board formed by product manufacturers belonging to the product category in question;
- The consulting of the existing PCR documents (of similar products) in other European registration programs. If it is decided not to use an existing and available PCR, the Moderator along with the Technical Committee has to justify the reasons for developing a new document;
- The enforcement of the standard NP ISO 14025:2009, EN 15804:2012+A1:2013 and ISO 21930:2007, concerning the products and construction services.

Through the mentioned instructions, the Moderators along with the PO should intervene accordingly with the following stages:

- Invite LCA and PCR development experts to be part of the team for the elaboration of the new PCR document;
- Develop the first draft of the PCR document, applying the procedure mentioned on the reference standards and considering PCR's of similar products of other registration programs;
- Manage the constitution of the sectorial panel.

4.1.2. Assessment of the Available PCR Documents

A PCR document should be harmonized with the majority of the markets, so they can be used internationally. The development of these documents for a specific product category should be made considering the existing PCR on an international level for the same product category, adjusting, if necessary, to the new standards and the wishing market areas. In case a document is considered interesting or appropriate to the development, there should be a revision in order to validate its consistency and precision in the calculation rules for the LCA.

If there is no PCR document developed for the product category, it should be prepared and approved accordingly with procedures mentioned here.

4.1.3. Identification of the Documents Author

A PCR document can be prepared by PO and/or other entity initiative. The LCA experts with some experience on PCR and EPD development are essential elements for this conception process, which contribute to the creation and adjustment of new PCR documents.

The development of PCR documents for each product category should be included LCA experts should with knowledge of the intended type. The intervention of these experts makes the process more technical and reliable, guarantying that the PCR are regulating documents with precise information concerning the LCA studies on products. This assures that the presented results on future EPD based on these PCR are reliable.

4.1.4. Constitution Of The Sectorial Panel

The sectorial panels are essential to understand the needs of the national and international markets of the manufacturers, once they are trained by representatives of the company, corporate associations and other entities or experts in the field of product categories. The sectorial panels are constituted to help in the development of a PCR document.

The constitution of these sectorial panels should be made through individual communication (e.g. by e-mail) by the PO or by the coordinator of the PCR document in development. After the acceptance of the elements to be part of the panel, they should be informed about the situation of the work in course and the foreseen activities. The PO should guarantee that all the interested parties will be involved and provide a valuable source of contributions for the development of the PCR document.

The contribution of the sectorial panels in the development of a PCR document should be made through the PCR Forum, creating private work groups in www.daphabitat.pt, or by e-mail.


4.1.5. Participation Of The Members From The Technical Committee

Before the work can be announced publically at www.daphabitat.pt the Technical Committee of the DAPHabitat System should be informed regarding the constitution of the working group formed for the development of the PCR document. The PO must put in consideration the Moderator(s) of this process to the Committee.

4.1.6. Announcement of the Initiation Phase

The initiation phase for the development of a PCR document should be announced at the PCR Forum at www.daphabitat.pt. This announcement should be complemented with a brief explanation of the objective and identification of the assigned Moderator(s).

This announcement is very important for various reasons, namely because it allows to:

-  Inform publically about the work in development that can alert the interested parties, encouraging their participation and cooperation;

- ☰ Avoid the development of equivalent work regarding the same issue (national or international).

4.2. Preparation

The preparation phase of a PCR is divided into a few important activities that enable the orientation of the parties throughout a group of demanding tasks. Therefore, the preparation phase includes the following elements:

- ☰ Identify the parameters to be included in future EPD;
- ☰ Specify the LCA methodology to be explored in the PCR;
- ☰ Select relevant additional environmental information;
- ☰ Verify if there is coherence with standards demands.

4.2.1. Parameters Selection

There is a small group of parameters that should be presented in an EPD. However, it is important to determine if the contemplation of other parameters in a product category will become an asset to future EPD. This contemplation of other parameters groups should be assured in this stage of preparation of the PCR documents. The total of parameters to be approached does not have to be the same for all the product categories.





4.2.2. LCA Methodology

The general information presented in the EPD is based on the product LCA study, becoming essential that the content of the PCR includes the key elements of the LCA, such as:

- ☰ Instructions and definition of the functional unit;
- ☰ Instructions and explanation of the system boundaries;
- ☰ Instructions of the cut-off criteria;
- ☰ Instructions of the allocation rules;
- ☰ Instructions of the implicit data that show the general and specific data to be used;
- ☰ Instructions of the parameters that describe the environmental performance (additional to those that should already be included in the general format).




4.2.3. Relevant Additional Environmental Information

Accordingly with the NP ISO 14025:2009 the EPD should include additional environmental information considered relevant in the classification of the product. The PCR documents should mention what kind of relevant information must be included in the EPD. This type of information should be based on:

-  Data that are not integrated in the LCA study;
-  Information about other types of environmental management or environmental certificates of the product;
-  Options of waste management;
-  Information about activities related with social responsibility concerning the product.

4.3. Consulting

Within the process of creating PCR, all developed documents must be subject to an “open” consulting procedure before its final version being published in the DAPHabitat System database. This consulting phase is the responsibility of the program operator and the PCR coordinator, being divided into the following tasks:

-  Identify the interested parties to be involved in the discussion (communicate to the identified members as potential interested parties);
-  Prepare the open consulting procedure through the PCR Forum at www.daphabitat.pt;
-  Gather and validate the comments, adding up the collected contributions to the draft.

4.3.1. Identifying the Interested Parties

The intervention of the interested parties in the discussion process of the draft PCR is vital to its development. So, it is relevant that the interested parties of this project are a private individual or an interested entity in a specific features about the PCR document in development, as long as they are registered as members in the DAPHabitat System.

4.3.2. Consulting Procedure – PCR Forum





The consulting procedure is prepared trough the PCR Forum, a tool available at www.daphabitat.pt. This part of the registration program allows the creation of participatory discussions of the different national or international interested parties, which make the consulting process and the interventions of the members belonging to the DAPHabitat System easier.

4.3.3. Comments Gathering

As result of the consulting phase emerge contributions and suggestions of improvement of the draft of the PCR. From these results it is important to gather all the relevant contributions and comments to improve the draft. It is the responsibility of the moderator of the PCR document along with the PO to develop a summary with all contributions and to identify which the most relevant changes to apply to the document that will be delivered to the Technical Committee.

4.4. Validation and Approval

The validation and approval of the final PCR is one of the final phases of the process of PCR development and is divided into the following sub phases:

-  Final draft of the PCR;
-  Validating procedure of the final version;
-  PCR approval;
-  Validation of the PCR document.

4.4.1. Final Draft of the PCR

The Moderator is responsible for the final draft of the PCR document, which should attach to the proposed version the contributions considered relevant for the final document. If there are comments of the interested parties that are not considered in final version of the document, the decision should be properly justified by the Moderator of the PCR document along with the PO.

4.4.2. Validation and Approval

The validation procedure of the PCR document is the responsibility of the Technical Committee, which should approve the final version of the document proposed by the Moderator. If necessary the members of the TC can ask for explanations to the Moderator of the document concerning the presented proposal and its considerations. If the Technical Committee suggests alterations to the proposed version, the moderator of the PCR document is responsible for the new final version of the document for validation.

The approval phase of the document corresponds to the final phase of all the process. After the official validation of the proposed document by the Technical Committee, it will be approved and available at www.daphabitat.pt.

4.4.3. Validation of the PCR Documents

A PCR document is valid for a period up to 5 years since its issue date. The period during which the document is valid should be described in it, safeguarding always the variations of the market requirements and the development of new production and technological processes.

When the final phase of the validity period of a PCR document nears, the PO and the responsible Moderator must initiate the revision process, in order to develop a new version of the document with the needed changes and afterwards proceeding to the revision and validation of the updated version.

4.5. Publication

After finalizing the process of creating and validating the PCR documents, these must be published in the DAPHabitat System database at www.daphabitat.pt. The program operator is responsible for the publication and promotion of the document. The PCR publication also implies the publication of all the documentation and relevant information that support its development, which must be disclosed along with the final PCR document.




4.6. Revision

A PCR document is valid up to 5-year period, thus it must be subject to a revision process when this period expires or the need for updating arises.

There are some reasons that justify this procedure, like the appearance of new information from the industrial sector that influence the LCA study, the changes of the market requirements to the comments received through the PCR Forum during the validation period of the document, which expresses the relevant motives for the alteration. When this necessity is predetermined, the revision of the document before the ending of the validation date, this intention should be mentioned in the published document.

The revision of a PCR document should initiate before the end of the validation date, previously announcing the start of the revision time in the **PCR Forum**. In the **PCR Forum** should be announced the opening and expiration date of the revision so that the interested parties have knowledge and can contribute. If there is a sectorial panel for the product category in question, this should be previously notified to be involved in the revision works.

In an initial phase, the updating process of a PCR document must show that the document:

-  Is written accordingly with the rules of the document (updated version);
-  Is in conformity with the applicable standards;
-  Provides the necessary instructions so that the main environmental features of the product are presented in the EPD's.

The revision process of the PCR document is the responsibility of the members of the Technical Committee. To achieve the main goals of the revision process, the DAPHabitat System should:

- ☰ Allow that all available documents can be reviewed during the validation period;
- ☰ Require that the Moderators of the corresponding documents are alert to the comments and gather them;
- ☰ Allow the extension of the discussion period of a document, if there are no comments until the date initially determined.

4.6.1. Comment of the Available Documents

During the validation period of the documents available on the data base of the DAPHabitat System, these can be commented by any interested parties, which must be members of the DAPHabitat System, at the **PCR Forum**. The comments registered will be gathered and considered on the revision phase of the documents.

The PO should be directly contacted, if there is any necessary alteration in a PCR document. The consideration of the solicited alteration will be evaluated by the Technical Committee and, if approved, the PO will inform the PCR documents Moderator of the urgency of the revision process.

4.6.2. Control of the Comments Gathered

The control and reception of the comments on the PCR documents available on the database of the DAPHabitat System, is the responsibility of the Moderators of the corresponding PCR documents in collaboration with the PO.

4.6.3. Extension of the Revision Period

The revision of a PCR document is characterized by a period of time, during which the proposed version for the document is visible at the PCR Forum. If the period of revision end without any comments, the PO can extend the revision period of the document and the reception period regarding the contributions of the interested parties for updating the document.

4.7. Identification

The PCR documents should be identified accordingly with the indicated parameters on Table 1. The data presented is only an example.

Table 1 - Identification of the document

NAME	PCR 001 – Roof coverings – V.1.0 (2012)	
DATE AND REGISTRATION NUMBER	20-10-2012 / 001	
VERSION	New <input checked="" type="checkbox"/>	Update <input type="checkbox"/>
PCR MODERATOR	name of the moderator	
AUTHORS	Name of the authors or entity	
SECTORIAL PANEL	Identification of the members (entities and/or individuals)	
CONSULTING PERIOD	20-07-2012 to 20-09-2012	
VALID UNTIL	20-10-2017	

5. Procedure of Recognition and Adoption of Others PCR

In Europe, an EPD of construction products should be elaborated based on a PCR document in accordance with the EN 15804:2012+A1:2013 and whose registration program, from which is derived, is based on the requirements of the ISO 14025.

For the registration of an EPD in DAPHabitat System, this declaration has to be based on a Life Cycle Assessment (LCA) study based on a PCR document.

The entity that intend to develop an EPD should look for a PCR document to support the LCA study of the product, by contacting with the DAPHabitat System. If the DAPHabitat System has not available the required PCR document and this document exists in another registration program, a **procedure for recognition and adoption described herein**, should be applicable.

If a PCR document that can serve this purpose does not exist, the organization should develop the LCA study according to the **PCR document – Basic Module for Products and Services of Construction of the DAPHabitat System**.

The entity contact the Certification Body (CB) to submit the proposal of the EPD developed for verification. If the CB verifies that the LCA study was not conducted based on a PCR document from DAPHabitat System or other PCR document formally recognized and adopted by the registration program, while performing the documents analysis, the CB must indicate the entity to contact the PO to rectify the situation according with the rules of the program.








The mutual recognition of existing PCR documents between registration programs is a fundamental procedure for the recognition of an EPD in Europe. However, this recognition and adoption of the documents must be carried out consistently and accurately.

If the DAPHabitat System does not have the specific PCR document for elaborating the LCA of the product, the PO verifies the existence of the intended PCR document in another registration program belonging to ECOPlatform (www.eco-platform.org). The PCR document with potential to be used, must be sent by the PO to the Technical Committee (TC) of DAPHabitat System. For a specific PCR document to be formally

recognized and adopted a legal opinion is issued, after the analysis that allows the entity to develop its LCA study based on the formally adopted PCR document.

5.1. Procedure Steps

The procedure of recognition and adoption, in this situation, should be carried out as follows:

- i. **Indication of two representatives of the TC.** The PO must request by e-mail (deptecnico@centrohabitat.net) to TC to indicate which two representatives of the TC are responsible for the analysis of the PCR document. These two representatives should ensure the technical and scientific competences required for the product category concerned.
- ii. **Document analysis.** The two representatives of the TC should ensure the completeness of the PCR document to be adopted by checking in particular whether the document is according to the the General Instructions of the DAPHabitat System and follows the EN 15804:2012+A1:2013, particularly with regard to the following requirements:
 -  rules for the LCA;
 -  definition of the functional unit;
 -  system boundary;
 -  compatibility with national rules;
 -  allocation criteria adopted;
 -  impact categories;
 -  If exists a public consulting procedure.
- iii. **Approval of the recognition and adoption of the PCR document in plenary.** The PO should schedule a meeting to approve the recognition and adoption of PCR document suggested by the two representatives of the TC.
- iv. **Issue a legal opinion of recognition and adoption of the PCR document.** After approval of the recognition and adoption of the PCR document by the Committee a legal opinion must be issued which formalize the recognition and adoption of the PCR document in discussion. The document should be forwarded to the entity that open the process as well to the CB.

After this procedure, the PCR document can be used on the EPD development for the registration in the DAPHabitat System. There should not be two recognized documents for the same category of product.

The recognition and adoption of any specific PCR document from another EPD registration program should be published in the site www.daphabitat.pt.

IV. EPD Development

1. Context

For an EPD to be registered and be available at the database, as a brand of the DAPHabitat, it is necessary that the requiring organization makes: a LCA study of the product(s) accordingly with the requirements mentioned in the PCR documents; develop an EPD based on the results of this study and the model of the EDP available when requested to the PO by e-mail; require the verification of the accuracy of the data used in the study, as well as the results and the validation decision of the document obtained to proceed with the registration.

2. Definition of EPD

The EPD, known as Environmental Product Declaration, are Type III environmental declarations that represent a group of quantified and reliable information, working as an excellent volunteer communication tool concerning the environmental performance of the product during its life cycle. This kind of environmental labelling allows the result comparison regarding the environmental performance between products that have similar functions. The EPD are declarations from the manufacturers, based on the LCA of a product or service, to be considered Type III environmental declarations, accordingly with the standard NP ISO 14025:2009, these declarations must suffer a verification procedure managed by an independent third party (certification body).

3. Typology

All the individual manufacturers and associated groups of manufacturers can declare the environmental performance of their products or services, in the DAPHabitat System. In this registration program an EPD can be of one manufacturer and of an associate group of manufacturers. So to reduce the effort of the manufacturers to obtain declarations for similar products, it is possible to establish a product category by developing only one EPD.

3.1. Product Class Definition

The development of an EPD for a product category, is prepared by definition of an average EPD if the terms for the various products are followed for the products of the same category, once they:

-  Have similar functions, technical performance and use;

- Belong to the same product category in the way that it's possible to use the same PCR document, including the same functional unit and system boundaries, the same cut-off criteria, allocation rules and parameters that describe the environmental performance.

3.2. EPD of One Company

A manufacturer can develop different kind of EPD, such as:

- EPD of a specific product produced in one production unit;
- Average EPD (CEN/TR 15941:2010) of a specific product produced in more than one production unit;
- Average EPD (CEN/TR 15941:2010) of a product category produced in one production unit;
- Average EPD (CEN/TR 15941:2010) of a product category produced in more than one production unit.

3.3. EPD of a Group of Associated Organizations

The industrial and sectorial associations can create the EPD usually based on average data (of the specific data), representing an average value of the product of the associated members. So it is allowed to a specific group of associated manufacturers, to develop different sets of EPD, such as:

- Average EPD (CEN/TR 15941:2010) of an specific product produced in production units of a group of manufacturers;
- Average EPD (CEN/TR 15941:2010) of a product category produced in productions units of a group of manufacturers.

4. Development Methodology

According to the functioning rules of the DAPHabitat System the EPD development is made with a set of well-defined stages, involving various participant parties.

4.1. Procedure

The organizations that want to register an EPD in the national registration System of environmental declarations of products for the habitat – DAPHabitat System, should:

- ☰ Contact the PO in order to obtain information about the development process, verification and registration of EPD;
- ☰ Contact the PO to obtain information about the PCR documents applicable to the product in question;
- ☰ Develop the LCA study accordingly with the PCR document of reference. The LCA report should be written in accordance with the format mentioned in point V;
- ☰ Draw up a draft of the EPD based on the results of the LCA study and following the requirements present in this document and the referenced PCR;
- ☰ Contact the certification body recognized by the DAPHabitat System and handle the verification procedure, giving to this entity all the necessary documentation;
- ☰ Contact the PO after finishing the verification procedure with the favorable result, so that the registration and publication of the EPD can be handle and the EPD available on the data base of the DAPHabitat System. The organization should give to the PO the EPD in paper and in digital format, signed by the verifier and by the certification body.

An EPD will only be available on the data base of the DAPHabitat System at www.daphabitat.pt after the organization pays the fees regarding the registration procedure (see 6.7.1).

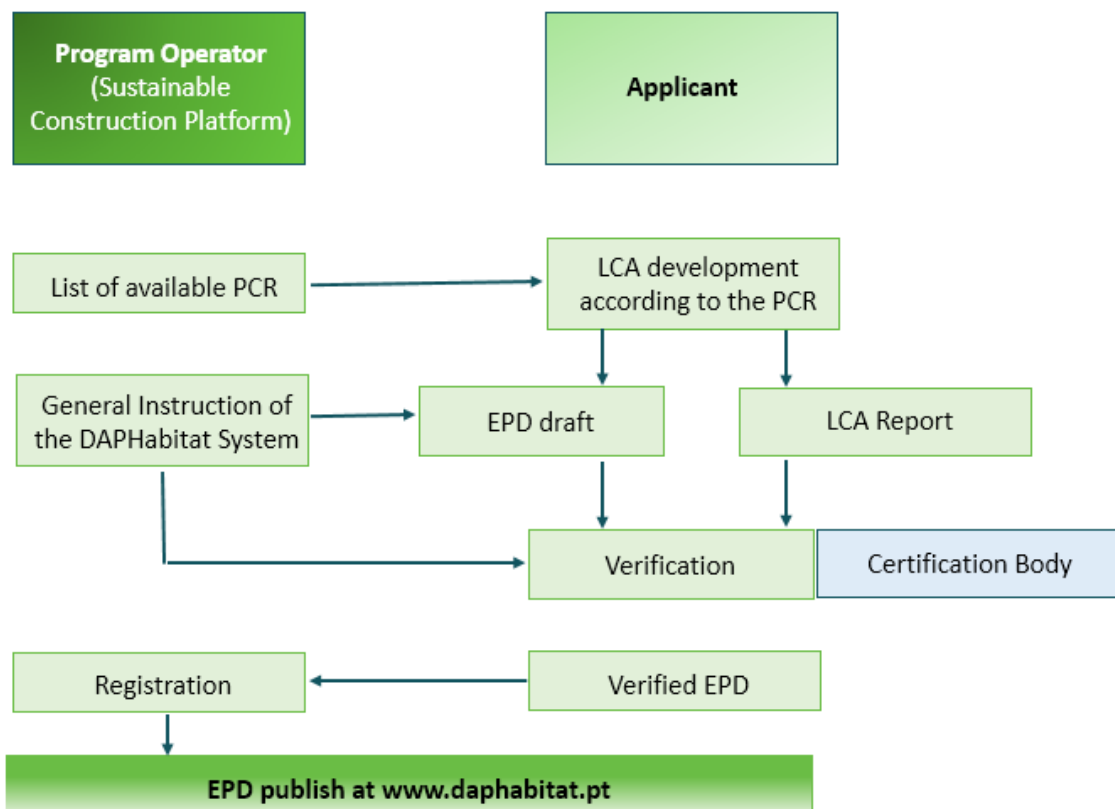








Figure 3. Development procedure, obtaining and registration of an EPD

4.2. Contents and Requirements

The EPD present quantified information about the environmental performance of the products or services of the habitat. This kind of environmental declarations can also provide information concerning the health issues, such as the polluting emissions to the interior air of the buildings, pollutants to the soils and the phreatic surfaces (water contamination) during the products life cycle, besides the additional environmental information.

The main objective of an EPD for products of the habitat is to provide a reliable scientific information supporting the analysis of buildings and other constructions works, allowing to evaluate the negative impacts on the environment.

An EPD should have the following content:






-  General information to declare;
-  Information related to the EPD;
-  Information related to the product;
-  Information related with the environmental performance of the product;
-  Information related with the verification and registration of an EPD;
-  Referencies.

4.2.1. General Information to Declare

The DAPHabitat System requires that an EPD includes some general information regarding the program operator, the owner of the EPD, the manufacturer and the product. These information should be declared accordingly with the requirements present in this document, and should be presented in accordance with the model available if required by e-mail.






4.2.1.1. Information Regarding the Registration Program

An EPD should include information related with the program, such as:



-  Identification of the program operator (website and email);
-  Address of the program operator;
-  Logo of the program operator;
-  Address and email;
-  Logo of the DAPHabitat System.

4.2.1.2. Information Regarding the Requiring Organization/Owner (Producer/Manufacturer)

In an EPD must be reported the identification of the organization that wants to obtain the Type III Environmental Product Declaration, through the following information:










-  Name of the entity;
-  Address and location;
-  Contacts (email, number, fax);
-  Entities logo;
-  Information about the applied management system (e.g.: environmental, quality ...).

There can also be included other type of information about the producer, such as:

-  Specific aspects relating the production;
-  Environmental policies of the entity.




4.2.2. Information Regarding the EPD

The EPD should be identified by the following criteria:

-  Name of the authors of the declaration;
-  Emission date;
-  Registration date;
-  Validation date;
-  Registration number;
-  Representative of the EPD (geographic, group of manufacturer(s) if applicable, etc.);
-  Where to look up the explanatory material;
-  Type of the EPD, accordingly with the information modules included (only the indication of the EPD type);
-  ...

4.2.2.1. Information Regarding the Reference PCR Document

The EPD should be developed based on the PCR produced or adopted by the registration program, in case they are available. This kind of information should be included in the EPD, mentioning the following aspects related with the PCR document used:

-  Name;
-  Date;
-  Registration number;

- ☰ Version (new or updated);
- ☰ Identification of the Moderator(s) of the PCR document and contact;
- ☰ Authors;
- ☰ Sectorial panel;
- ☰ Revision panel (members of the Technical Committee);
- ☰ Validation date of the document.

4.2.3. Information Regarding the Product

An EPD should include information related with the product (or the product category), such as:

- ☰ **Identification of the product** (e.g.: model number, code);
- ☰ **Illustrative identification of the product** (images of the product with quality);
- ☰ **Technical requirements** (should refer to the applicable regulation of the product, including national rules);
- ☰ **Description of the main technical characteristics of the product** (material and type of product, in fabrication course, final product, description of the technical and functional characteristics);
- ☰ **Description of the use of the product** (the description of the use of the product should refer to the product ready for delivery, ready to apply and do its function, in the use stage, even if this comes from a process afterwards);
- ☰ **Reference Service Life;**
- ☰ **Market placement** (applicable regulation, national rules should be mentioned);
- ☰ **Quality control** (if applicable, it should be mentioned if there is a quality control systems related with the product to declare);
- ☰ **Special delivery conditions** (the special conditions or characteristics of delivery should be declared in the EPD. To describe these parameters the reference base should be the normalized product and other technical information);
- ☰ **Components and substances to declare** (components and substances of the product that can be relevant in its characterization, including information about materials and substances that can cause harmful effects to the human and environmental health, in all the stages of the life cycle. It should also include information about present substances in the “Candidate List”, at least when its nature exceeds the threshold necessary for the notification of substances in items (concentration level superior to 0.1% in mass (m/m)) to the European Chemicals Agency)
- ☰ **Historical of the LCA study** (in case the LCA study of the product is already developed, there should be developed a brief summary of those studies).

4.2.4. Information Regarding the Environmental Performance of the Product

The information related with the environmental performance of the product has the LCA study of the product as support. All the important information to be included in an EPD is described in this document. However the PCR of reference should always be consulted, once it depends on the product category, there can exist more specific requirements for the part of an EPD.

4.2.4.1. Functional Unit or Declared Unit

A functional unit and a declared unit are a reference to the organization of the input and output data, allowing that these should be expressed on a common base. On an EPD should be mentioned which units were used on the LCA study and why the choice.

4.2.4.2. Stages of the Life Cycle Assessments

In this part of the EPD should be mentioned which environmental parameters to be included in an EPD, considered essential the description and presentation of all type of information concerning the product life cycle, since the upstream aspects of the manufacturing process, the manufacturing process of the product, until its use and end of life stage.

4.2.4.2.1. Diagram of Inputs and Outputs of the LCA Included Processes

In a body of a Type III Environmental Product Declaration must be presented a simple flowchart that illustrates all the studied inputs and outputs of the production system. This flowchart should be divided in the different stages of the life cycle, namely, production stage, and when applicable construction, use and end of the life. The main stages can also be subdivided.

4.2.4.3. Parameters that Describe the Potential Environmental Impacts

The life cycle of the different products of the habitat use natural resources in different ways and can produce different kinds of pollutants for the environment. These aspects can origin potential different environmental impacts, this is, different categories of impact.

The information related with the environmental impact is expressed by categories of impact coming from the LCA study. The categories of impact are calculated through the characterization factors (conversion factors) that allow to convert/translate, for example, the quantity of polluting elements produced in impact categories.

The main categories of impact used and the corresponding units in which they are converted are:

- Global warming potential (GWP) | **kg of carbon dioxide (CO₂) equivalent**
- Ozone depletion potential | **KG CFC⁻¹¹ equiv.**
- Acidification of the soil and water potential (AP) | **kg of Sulphur (SO₂) equivalent**
- Eutrophication potential (EP) | **kg phosphate (PO₄³⁻) equivalent**
- Photochemical Oxidation Tropospheric ozone formation potential (POCP) | **kg ethylene (C₂H₄) equivalent**
- Potential for abiotic depletion of resources – elements (ADP elements) for non-fossil resources | **kg Sb equiv.**
- Potential for abiotic depletion of resources – fossil fuels (ADP fossil fuels) | **MJ, calorific value ([Hi] lower calorific value)**

In case it is necessary to characterize other potential environmental impacts for a product category through other impact categories, these should be described in the corresponding PCR and should be included in the EPD.

4.2.4.4. Parameters that Describe the Use of Resources

The gathering of information about the data that characterizes the resources consumption during the life cycle of the product results from the inventory work. The following parameters describe the use of renewable and non-renewable materials, renewable and non-renewable primary energies and of water, gathered based on the data of the LCA study inventory.




- Use of renewable primary energy (except renewable primary energy used as raw material) | **MJ, inferior calorific power**
- Use of renewable primary energy resources used as raw material | **MJ, inferior calorific power**
- Total use of renewable primary energy resources (primary energies and primary energy resources used as raw material) | **MJ, inferior calorific power**
- Use of non-renewable primary energy (except non-renewable primary energy used as raw material) | **MJ, inferior calorific power**
- Use of non-renewable primary energy resources used as raw material | **MJ, inferior calorific power**
- Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw material) | **MJ, inferior calorific power**
- Use of secondary materials | **kg**
- Use of renewable secondary fuels | **MJ, inferior calorific power**
- Use of non-renewable secondary fuels | **MJ, inferior calorific power**
- Use of net freshwater | **m³**

The parameters should not be grouped, they should be reported individually.

When the use of resources contributes in less than 5% in each impact category, this parameter should be included in the list “other parameters”.

4.2.4.5. Parameters that Describe the Waste Production

The production of waste results from the life cycle stages of the product should be declared mentioning:

-  Hazardous waste;
-  Non-hazardous waste;
-  Final disposal.

4.2.4.6. Other Environmental Parameters






The selection of other environmental parameters to be included in an EPD should be considered accordingly with the relevance of a product category and also accordingly with the scope of a developing EPD. All the parameters considered relevant to a product category should be mentioned in the corresponding PCR.

The references used to consider other environmental parameters should be mentioned in the PCR.

4.2.4.7. Additional Environmental Information

An EPD can include additional environmental information, which is related to the environmental aspects (in case they are relevant), besides the environmental information of LCA, LCI or information modules. The additional environmental information should be only related to the environmental aspects. The instructions concerning the security of the product not related with the environmental performance should not be declared.

The identification of the significant environmental aspects must, at least, consider the following:

-  Real and potential impacts on the biodiversity;
-  Geographic aspects related with any stage of the life cycle (e.g.: discussions on the relation between potential environmental impacts and the location of the product system);
-  Data on the product performance if environmentally significant;
-  The accession of the organization to any environmental management system, with a declaration where interested parties can find details on a certification program;
-  Any environmental certification program applied to the product and a declaration about where an interested party can find details on a certification program;

- ☰ Other environmental activities of the organization, such as the participation in recycling or recovery programs, as long as the details of these programs are available to the buyer or user, and the contact information is presented;
- ☰ Information that comes from the LCA but it is not mentioned in the base of the LCI or Assessment of the Impact of the Life Cycle (LCIA) (e.g.: information about the origin of possible recycled raw material, used in the composition of the product);
- ☰ Instructions and limitations for an efficient use;
- ☰ Most suitable option of waste management for used products;
- ☰ Identification of the dangers and hazard analyses for the human and environmental health;
- ☰ Potential incidents that can have impacts in the environment.

This kind of additional information should be presented mentioning, in a clear way, that they are not part of the LCA or LCI and information modules, so they should:

- ☰ Be based on valid and verified information, in agreement with the standards of ISO 14020 and section 5 of the ISO 14021;
- ☰ Be specific, exact and non-misleading;
- ☰ Be verifiable;
- ☰ Be relevant for the product in question;
- ☰ Not be susceptible to wrong interpretations, in particular through the omission of certain facts;
- ☰ Relate only with the existing environmental aspects, or with the existing probability during the life cycle of the product, or be related with the life cycle of the product;
- ☰ Only declare the absence of a substance as “without...” when the level of the specific substance is not superior to those that would be detected with a recognized residual level or pre-defined level;
- ☰ Do not refer the absence of substances or characteristics that are not all associated to the product category;
- ☰ Do not implicit a comparative demand, but should be comparable in the same product category;
- ☰ Follow the requirements mentioned in the ISO 14021 in case the symbols are used.

The PCR can provide more specific instructions of the type of additional environmental information, to be declared in an EPD for a certain product category.

4.2.5. Information Regarding the Verification and Registration

The EPD must include information regarding the verification procedure, such as:

- ☰ Instructions of external verification;
- ☰ Identification of the independent verifier and signature;
- ☰ Identification of the certification body, signature of the person in charge and stamp of the entity;

- ☰ Date of the verification and validation date of the EPD.

4.2.6. References

The references used to develop an EPD should be justified in the end of the document.

5. Conditions of Comparability Between EPD's

The EPD can be comparable as long as certain conditions are carried out, in agreement with the standard NP ISO 14025:2009, such as:

- ☰ The definition and description of the product category are identical (e.g.: function, technical performance and use);
- ☰ The definition of the objective and scope of the product's LCA, in accordance with the ISO 14040, has the following characteristics:
 - ✓ The functional unit is identical;
 - ✓ The boundary of the system is equivalent;
 - ✓ The description of the data is equivalent;
 - ✓ The criteria for the inclusion of inputs and outputs are identical;
 - ✓ The quality requirements of the data including coverage, precision, completeness, representativeness, coherence, reproductively, sources and uncertainties are equivalent;
 - ✓ The units are identical.
- ☰ For the inventory:
 - ✓ The methods of data gathering are equivalent;
 - ✓ The calculation procedures are identical, and
 - ✓ The allocation flow of the materials, energies and the emissions are equivalent.
- ☰ If applicable, the selection of impact category and calculation rules are identical;
- ☰ The predetermined parameters for the LCA data presentation (category of the data of the inventory and indicators of the impact category) are identical;
- ☰ The requirements for the provision of additional environmental information, including any methodological requirements (e.g.: specifications for the identification of dangers and risk analyses) are equivalent;
- ☰ The materials and substances to be declared are equivalent;
- ☰ The instructions for the production of data to develop the declaration (LCA, LCI, information modules and additional environmental information) are equivalent;
- ☰ If the EPD is not based on a LCA that covers all the stages of the life cycle, the information about the phases that are not considered is equivalent;

- The validation period is equivalent.

For the comparability between the EPD to be possible, it's also required that:

- The environmental impacts of the stages omitted in the life cycle of the products are not significant, or the data of the life cycle omitted are identical, in the acceptable limits of the uncertain data;
- In the same category are developed based on the corresponding PCR.

Accordingly with the EN 15804 and the EN 15942, with the EPD of products and construction services should be mentioned that these can't be comparable if they are not developed accordingly with the standard EN 15804.

To guarantee the comparison of results between the EPD the results should be expressed with at least two significant digits (for example, 0, 012), however in case inferior values are verified, it should extend to the first significant digit or use the scientific normalized representation.

6. Verification and Registration

An EPD needs to be verified by an independent third party in order to guarantee the liability of the documents content, considering the consumer as one of the potential target market. The verification procedure is the confirmation, through the proposition of objective evidence that the EPD requirements are satisfied. This process is coordinated by certification bodies recognized as independent from the bodies involved.

Only after the validation of the decision of the EPD it is allowed to register the document at the DAPHabitat System, for the information regarding the environmental performance and quantitative data present in this environmental label to be available at the data base at www.daphabitat.pt.

6.1. Objective and Scope of the Verification Procedure

The main objective of this subchapter is to establish the methodology regarding the verification procedure of an EPD in the field of the DAPHabitat System and the general principles.

The set of rules established by the verification procedure is applicable to every national and international organization that intends to verify the EPD according to the methodology defined by the ISO 14025 standard, with the purpose of registering the declaration and publish it on the DAPHabitat System database.

All the omissions in this document will be analyzed by the PO.

6.2. Certification Bodies and Verifiers

The verification procedure involves verifiers belonging to a pool of verifiers managed by the certification bodies, entities accredited by their competences by the DAPHabitat System operator.

According to the principles and rules established by the PO, the certification body should have a data base with the individual registration of the verifiers for the verification procedure of an EPD in the DAPHabitat System.

6.3. Qualification of the Involved Parties

6.3.1. Certification Bodies

In the operating rules of the DAPHabitat System is establish that for an organization to be recognized as a certification body needs the approval of the PO. This approval goes through an internal evaluation procedure and for which it is necessary that the organization give the PO the following documentation:

- ☰ Identification of the organization;
- ☰ The rules used by the entity in the verification procedure in the scope of the DAPHabitat System, following the General Instructions of the DAPHabitat System, as well as the verification requirements present at the NP ISO 14025:2009;
- ☰ The qualification process of the technicians for the verifiers pool;
- ☰ The rules of the management entity for the pool of verifiers;
- ☰ Competences of the technicians involved;
- ☰ Procedure of the entity for the handling of complaints;
- ☰ Procedure of the entity concerning corrective and preventive actions;
- ☰ Procedure regarding the decision commission or decision process.

After the evaluation of the organizational competences, on the part of the PO, the acceptance decision of the organization as certification body of the DAPHabitat System, will be announced formally to the organization and will be celebrated an protocol/agreement between the certification bodies and the PO, Sustainable Construction Platform. After this decision, the identification of the certification body will be published by the PO at www.daphabitat.pt.

6.3.2. Verifiers

The verifiers have to be independent to the development of the EPD and should not be involved in the elaboration of the LCA, they should not have conflict of interests resulting from the position in the structural organization of the DAPHabitat System.

Additionally, a verifier should satisfy the following competence requirements:

- Knowledge of the sector, products and environmental aspects related with the products;
- Knowledge of the process and product in the scope of relevant product category;
- Technical knowledge of LCA and methodology LCA developing;
- Knowledge of the relevant standards in the areas of environmental labeling. Environmental declarations and LCA;
- Knowledge of the regulation board in which were prepared the requirements for the Type III environmental declarations, namely the EPD (EN ISO 14025);
- Knowledge of the regulation board in which the concept of the EPD was introduced (namely the NP ISO 14025:2009);
- Knowledge of the functioning of the National System for Environmental Product Declarations for the habitat – DAPHabitat System;
- Frequency in the training programs organized by the PO.

6.3.3. Application for the Integration in the Pool of Verifiers of the Certification Bodies

The application for the integration in the pool of verifiers can be presented by initiative of the candidate, or by invitation of the certification bodies or the Sustainable Construction Platform (Program Operator).

For the integration process the verifier should send to the certification body a request accordingly with the documentation mentioned by the recognized entity by the DAPHabitat System. The integration and qualification procedure of the technicians as qualified verifiers is an important part of the DAPHabitat System and is from the responsibility of the certification bodies.

The decision about the qualification of a verifier should be based on the necessity of carrying out an initial verification of an EPD, so as to prove his competence as verifier in the verification of an EPD (in case there are no references). So, it is acceptable to carry out a verification of an EPD, to be registered in the DAPHabitat System, to evidence the requirements of the necessary competences of the future verifier.

In addition, verifiers are subject to a periodic evaluation performed by the coordinator and director of quality certification and responsible for the management process, according to the following criteria:





- Meeting deadlines / content and quality of reports;
- Attitude demonstrated as a team;
- Complaints made and duly justified by customers;
- Customer satisfaction with the work done during the verification;
- Evaluation of the presence while performing the verification.

6.4. Verification Process

The verification process is essential so that an organization can register their EPD at the DAPHabitat System. The organization should elaborate the EPD and submit it to the verification procedure demanded by the rules established in the General Instructions of the DAPHabitat System. To start this process the demanding organization should contact the PO or contact directly the certification bodies. To contact with this recognized bodies by the DAPHabitat System, the organization should check at www.daphabitat.pt where these are identified. All the documentation required to start the verification of an EPD should be delivered the certification body.

6.4.1. Methodology, Principles and Renewal

The verification procedure should guarantee the liability and the veracity of:



-  The implicit data gathered and used for the LCA calculations;
-  The way of how the calculations of the LCA were done, so that the rules described in the PCR document of reference are followed;
-  The presentation of the environmental performance included in the EPD;
-  The other additional environmental information included in the declaration, if they exist.

After the EPD verification is carried out, this is validated for a period up to 5 years since the date of emission. After this period, the declaration should be reviewed and the verification should be renewed. An EPD can be reevaluated and updated, if necessary, when exists changes in the technology of the production process or other circumstances that can change the content and accuracy of the document. In the renewal of a verification, the focus should concentrated preferably in changes that occurred in the ground conditions of the EPD development or others changes referring internal procedures of the organization, with importance to the EPD.

An EPD must be recalculated after the 5 year period, if significant changes in the implicit data are detected. Using the principles defined in the EN 15804:2012+A1:2013, a reasonable change in the environmental performance of an product should be communicated to the certification body when this change is round 10% in any one of the parameters declared in the EPD (clause 7 of the EN 15804:2012+A1:2013). This change can require an update of the EPD.

In case of a revision of the PCR document of reference in which an EPD has been based, there should be made a renewal of the verification during a transition period of 18 months.

The certification bodies should guarantee that the verification procedure is developed in two distinct stages:

-  Documental analyses and data verification;
-  Verification and validation of an EPD.

6.4.1.1. Documents Analysis and Data Verification

In the documental analysis it is important to analyze all the documents that justify the input data and information included in the EPD, the implicit LCA study as well as the documents that describe other environmental information included in the EPD. This documental analyses should guarantee at least:

- The compliance of the LCA with the PCR document of reference;
- The compliance of the EPD with the standards of the class ISO 14040;
- The compliance of the LCA and the EPD with the General Instructions of the DAPHabitat System;
- The assessment of the data coverage included, precision, integrity, representativeness, consistency, reproducibility , sources and uncertainties;
- The plausibleness, quality and precision of the data base of the LCA;
- The quality and accuracy of the additional environmental information;
- The quality and accuracy of the support information;
- The update of the LCA and EPD information;
- The compliance, accordingly with the relevant environmental legislation, related with the product (if applicable).

6.4.1.1.1. Conformity of the LCA with the Document PCR of Reference

For the verification procedure it is essential that the verifier proves if the calculation base of the LCA were made accordingly with the instructions described in the PCR document of reference. So by this way the verifier should prove if:

- The functional unit was defined in accordance with the PCR document of reference;
- All the relevant information is documented for each unitary process and for the declared information modules (verify if the declared information is coherent and comprehensible to allow an independent evaluation of the importance of the data in compliance with the PCR document of reference);
- The accuracy of the data is reliable.

In the verification of the results on Impact Assessment, the verifier should confirm if the calculations were made correctly, based on the results of the inventory analyses and the characterization factors recommended. This verification can be made by random sample this is, the verifier can confirm if the calculations of one or more indicators of impact category are prepared properly through the selection of a given number of impact categories, focusing on the more determined parameters in the area of each selected category for verification. The identification of more determined parameters can be made through the assessment of their contribution regarding to the total environmental impact of the product in study.

Regarding the confirmation of the information from the inventory analyses, the verifier can, by random sampling, validate the conformity with the sources of the original data for the unitary processes and declared information modules. The organization should provide, through a request (by the verifier), the information about the implicit data and the calculations already made.

The control by sampling can be done preferably to:

- ☰ The unitary processes with a significant influence on the inventory analyses, and
- ☰ The unitary processes and declared information modules selected randomly.

In case the certification body considers important other verification procedures, these should be presented to the Program Operator, through a document with the proposed verification rules.

6.4.1.1.2. Visit to the Organization

The verifier should confirm if the information presented in the EPD reveals with precision the information contained in the documents on which the declaration is based on. The verification procedure should also confirm if this information is valid and scientifically solid. To guarantee the reliability of the verification it is necessary that the verifier goes to the organization that requested the EPD verification to confirm the documentation at place. The visit to the organization should occur during a minimum period of 1 day.

To simplify the process of documental analyses at the place, the verifier should in advance articulate and send to the requiring organization a list that identifies the necessary documentation. At the day of the visit the organization should facilitate the visit process of the verifier, having available and organized all the documentation required before.

6.4.1.1.3. Presentation of the Data for Verification

The requiring organization should give to the certification body responsible for the process, all the documentation necessary to verify an EPD.

To simplify the verification procedure of an EPD, it is advised to provide the following information for the verifier (t the data confidentiality, accordingly with point 6.6):

- ☰ The analyses of material and energy flow in the way to justify its inclusion or exclusion;
- ☰ The quantitative description of the unitary processes defined in the processes modeling and life cycle stages, when its defined by a declared unit;
- ☰ The designation of a group of data coming from an LCA software (if used) to processes and data of LCA;
- ☰ The LCIA results by modules of unitary processes (example: by life cycle stages);

- The results of the LCIA by productive/product unit if general data is declared for various units or for a similar product range;
- The documentation justifying the use of a given percentage or value in the calculation of end of life scenarios;
- The documentation justifying the use of a given percentage or value in the allocation process, if it does not correspond to the defined in the reference PCR document.

6.4.1.2. EPD Verification

The verification stage of an EPD should focus on the assessment of the validation of the data and information included in the LCA study and in the EPD. The verification procedure should confirm, at least, that an EPD is in conformity with:

- The applicable requirements of the standards EN 15804, ISO 14020 and ISO 14025;
- The document “General Instructions of the DAPHabitat System”;
- The PCR document of reference applicable.

6.4.2. Report on the Verification Procedure

The verification procedure should be clear. The verifier should write a report mentioning the verification procedure, liable to the obligations of data confidentiality.

The verification report used is a document preconceived based on a document developed by ECOPlatform, the *ECO-verification checklist*.

The process of verification must confirm if the information available in the EPD accurately reflect the information contained in the documents on which the declaration is based. The verification process should also confirm whether the information is valid and scientifically solid.

6.4.3. Decision and Validation of the Verification

The decision about the validation of EPD verification should be made by the certification body. When the decision of validating an EPD is confirmed, the certification bodies should communicate in writing to the Program Operator and the requiring organization, providing the necessary documentation (in the terms of the defined confidentiality) that to corroborate its validation.

Until the decision of validating an EPD must not pass a period of time superior to 6 months counting since the date of the report verification. Otherwise, the procedure of verification should be reevaluated by the

certification bodies, that will decide about the maintenance or closing. This decision should be communicated in writing to the requiring organization, with the motives that justify it.

The costs of the verification work is independent from the registration process of an EPD at the data base of the DAPHabitat System and it is the responsibility of the requiring organization and these should support this expense.

6.4.3.1. Appeal of the Decision

The validation decision of an EPD is the responsibility of the certification body, which by writing informs the requiring organization. If the validation of the EPD is not recognized and the requiring organization considers to appeal the decision, they should contact the Appeal Commission of the DAPHabitat System.

6.5. EPD Renewal

After the EPD verification, the EPD is valid for a period up to 5 years, from the issue date, after which its validation should be reviewed and renewed. During this period, the EPD will only be re-evaluated and updated, if necessary, to reflect changes in technology or other circumstances that could change the content and accuracy of the declaration.

The renewal of the EPD should preferably be focused on changes that may have occurred in the basic conditions for its preparation or other changes referring to the organization's internal procedures, relevant to the EPD.

An EPD can be recalculated, after a period of 5 years, if the underlying data have not changed significantly. For example, according to the defined in the EN 15804, a reasonable change in the environmental performance of a product to be communicated to the TC is $\pm 10\%$, in any of the parameters declared in the EPD (see Section 9 of EN 15804). This change may require an upgrade of the EPD.

In the case of revision of the reference PCR document should be made to renew the EPD validation during a transition period of 18 months.

6.6. Confidentiality of the Data

The specific data of a product is many times confidential, motivated by the requirements of a competitive business, by protected owner information by intellectual property rights or by similar legal restrictions. This confidential data shall not be public, once that an EPD, normally, provides data associated to all or only relevant life cycle stages. The data of the businesses identified as being confidential and that are

provided for the verification procedure, should be kept confidential, accordingly with what is mentioned in this document.

It is considered good practice, accordingly with the requirements of EN 15804, that the owner of the EPD provides the data that support the development of the EPD, to the data base of the DAPHabitat System, allowing the continuous construction of a data base with national values.






Accordingly with the EN 15804 it is also considered good practice provide a group of information to simplify the verification process by the verifier of the EPD with, as mentioned in point 8.4 of the EN 15804:2012+A1:2013, having in consideration the confidentiality of the data as mentioned before.

6.7. Registration Procedure



The process of the EPD registration in the DAPHabitat System is managed by the Program Operator. This process must begin only after the requiring organization receives the EPD verification validation. In order to proceed with the EPD registration, the requiring organization shall contact the Program Operator.

The following documents shall accompany an EPD registration in the DAPHabitat System by the requiring organization given to the PO:

Registration form;

-  Copy of the EPD verification validation emitted by the certification body;
-  EPD (word document);
-  Short description of the organization;
-  Company logo (vector or .jpeg);
-  High resolution pictures of the product(s) or service(s) declared in the EPD.

The registration of an EPD at the DAPHabitat System has the following financial expenses:

-  Registration fee;
-  Annual maintenance fee.

6.7.1. Registration Fees and Maintenance

In order to carry out the registration and publication of an EPD in the DAPHabitat System, there are two different costs associated with the process, the registration fee and the annual maintenance fee. The presented fees concern the administration and maintenance costs of the DAPHabitat System.

To these costs is added VAT to the legal taxes in force and may be reviewed periodically.

6.7.1.1. Registration Fees

This fee is connected to the registration and publication of an approved EPD in the program's database www.daphabitat.pt. This fee applies to each registered EPD and is valid for a period up to 5 years (Table).

Table 2 - Values of the registration fee of an EPD

EPD Registration	Registration Fee
1st Registration	1000 €
2nd Registration	500 €
3rd Registration	400€
4th registration and over	300 €

The registration renewal (after 5 years) at the DAPHabitat System infers the payment of a new fee, that in case the document doesn't suffer any alteration, represents around 70% of the initial registration fee (Table), and that will validate the EPD publication in the System for another 5 years. In case the documents suffers changes, being the EPD renewable, the registration tax for renewing will be the same as the initial registration fee.

6.7.1.2. Annual Maintenance Fee

This fee includes all maintenance costs connected to the EPD in the program's database. This is an independent cost from the number of registered EPD's. The annual fee is connected to the maintenance of every EPD registered by an organization.

Table 3 - Values of the annual maintenance fee of an EPD

Type of organization	Annual fee
Big	350 €
SME	250 €

The payment of the maintenance annual fee guarantees the associated marketing and the EPD availability in the www.daphabitat.pt.

6.7.2. Registration of a Verified EPD Abroad

If an organization requests the registration of an EPD already verified by an independent third party that is not a certification body recognized by the program operator, they should submit the EPD to a validation of the realized verification. This validation of the verification procedure will be made by the certification bodies recognized by the DAPHabitat System and is this entity that decide if the verification procedure is in accordance with the requirements and demands established in this present document.

V. Project Report

The project report should be systematic and complete so it can support the verification procedure on an EPD. The project report should register an LCA and the additional information, as declared in the EPD, accordingly with the EN 15804. This should be made available to the certification body recognized by the DAPHabitat System respecting the requirements of the confidentiality detailed in the EN 14025.

The elements of the project report should follow the requirements of the EN 15804, as well as the recommendations described after.

1. Study Elements of LCA

It is essential to describe in a complete and precise way the elements regarding the LCA study, such as the results, data, methods, assumptions, limitations and conclusions of the study. The report should be strictly detailed in a way that allows the independent verification and the comprehension of the complexity and compromises inherent to the LCA. The report should also allow the use of the results and the interpretation in a coherent way with the aims of the study, supporting the data and the additional environmental information provided in the corresponding EPD. So, the elements to consider in the report should include:

General aspects:

- Authors of the study;
- Data of the report;
- Declaration of the study that was developed accordingly with the requirements of the international standards ISO 14040 and ISO 14044, as well as the EN 15804:2012+A1:2013.

Objectives of the study:

- Reasons of the development of the report;
- The intended use;
- The target market (EPD to communicate business to business or business to customer);
- Declaration indicating if the study supports the comparative demands destined to be released to the public.

Study field:

- Function including the declaration of the characteristics of the product's performance and any omission of additional functions used in the comparisons;
- Functional unit or declared unit coherent with the objective and scope, including the relevant technical specifications and the rules used to calculate average data (for example when the functional/declared unit is defined to: a group of similar products by different manufacturers; the same product produced in different fabrication facility);
- System boundaries, including omissions of the life cycle stages, processes or necessary data, as well as the quantification of the input and output of materials and energy, and the assumptions concerning the production of electricity and other relevant basic data;

- Exclusion criteria including the description of the same assumptions, selection effect on the results and the list of the excluded processes in the study.

Analyses of the life cycle inventory:

- Data gathering procedure;
- Quantitated and qualitative descriptions of the unitary processes necessary in the modelling of the life cycle stages, when a declared unit is defined;
- Source of the general data and bibliography used to develop the study;
- Validation of the data, including the assessment of the quality and treatment of the absent data;
- Allocation rules, including documentation and justification of the allocation, as well as their uniform application.

Impact of the life cycle assessment:

- ILCA procedures, calculations and results of the study;
- The limitations of the ILCA results regarding the objectives and scope of LCA;
- Relation between the results of the ILCA and the LCA results;
- Impact category and considered category indicators, including the reason of the choice and reference of the source;
- Description of all the characterization models, characterization factors and used methods, including all the assumptions and limitations, accordingly with the defined in the corresponding PCR;
- Description of all the choices of value used regarding to the categories of impact, models of characterization, characterization factors, normalization, grouping, weighting and other ILCA points. The explanation for their use and the influence on the results, conclusions and recommendations;
- Declaration mentioning that the ILCA results are relative expressions and do not preview final impacts by category (endpoint), the exceeded threshold, and security or risk limits.

Life cycle interpretation:

- Results;
- Assumptions and limitations related to the interpretations of the results declared in an EPD, concerning the methodology and data;
- Description of the variance of the ILCA results in case the declared generic data coming from various sources or regarding a range of similar products;
- Assessment of the data quality;
- Total transparency in the choice of the data, motive, reason and the experts' opinion.

2. Documentation Regarding Additional Environmental Information

In this report should be included all the documentation regarding to the additional environmental information declared in an EPD, such as:

- Results of the tests in laboratory and/or measurement of the products composition;
- Results of the tests and/or measurement of the technical-functional performance of the product;

- Documentation concerning the declared technical information about the life cycle stages not considered in the LCA study and that can be used for the buildings assessment (for example transport distances, the VUR accordingly to attachment A of the EN 15804:2012+A1:2013, the energy consumption during the use, cleaning cycles, among others);
- Results of the laboratory tests or measurements about the data referring to the emission of substances to the indoor air of the buildings, to the soil and to the phreatic surface during the the construction product use stage.

VI. References

- ISO 14025:2009 – “Labels and environmental declarations – Type III environmental declarations – Principles and Procedures” ;
- ISO 21930:2007 – “Building Construction – Sustainability in building construction”;
- EN 15804:2012 – “Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products”;
- EN ISO 14044:2010 – “Environmental management – Assessment of the life cycle – Requirements and guiding lines”;
- EN ISO 14040:2008 – “Environmental management – Assessment of the life cycle –Principles and Context”;
- General Program Instructions – International EPD System, draft version, 2012-05-14;