



PEP ecopassport® PROGRAM

PSR

SPECIFIC RULES FOR STORAGE TANKS

PSR-0016-ed1-EN-2019 03 14

According to PSR-model-ed1-EN-2015 03 20

© 2019 Association P.E.P.

Copyright of PSR

Product Specific Rules are © PEP ecopassport® Program property, if nothing else has been specified (e.g. the cross-publication of PSRs from other programs). The use of the PSRs for any other purpose than to develop and register PEPs in the International PEP ecopassport® Program are subject to approval by the General Secretariat, which may be contacted at contact@pepecopassport.org



Contents

1.	Introduction	3
2.	Scope	4
2.1.	Description of the covered product families	4
2.2.	Taking into account of technological developments	5
3.	Product life cycle assessment	5
3.1.	Functional unit and reference flow description	5
3.2.	System boundaries	6
3.3.	Cut-off criteria	8
3.4.	Specific allocation rules	8
3.5.	Development of scenarios (default scenarios)	8
3.6.	Rules for extrapolation to a homogeneous environmental family	11
3.7.	Rules applying to joint environmental declaration	14
3.8.	Requirements concerning the collection of primary and secondary data	14
3.9.	Data quality evaluation	15
3.10.	Calculation of environmental impact	15
4.	Drafting of the Product Environmental Profile	16
4.1.	General information	16
4.2.	Constituent materials	16
4.3.	Additional environmental information	16
4.4.	Environmental impacts	17
5.	Appendices	18
5.1.	Terms and definitions	18
5.2.	References	18
5.3.	Declaration of conformity	19


1. Introduction

This reference document complements and explains the PEP ecopassport® program Product category rules (PEP-PCR ed.3-EN-2015 04 02), available at www.pep-ecopassport.org.

It defines the additional requirements applicable to storage tanks. Compliance with these requirements is necessary to:

- Qualify the environmental performance of these products on an objective and consistent basis,
- Publish PEPs compliant with the PEP ecopassport® program and international reference standards.¹

This reference document was drawn up in compliance with the open, transparent rules of the PEP ecopassport® program with the support of stakeholders and professionals of the storage tank market and the interested parties.

	www.pep-ecopassport.org
PSR reference	PSR-0016-ed1-EN-2019 03 14
Critical review	The third-party Critical review was carried out by Julie ORGELET - DDemain. The declaration of conformity published on 31/01/2019 can be found in the Appendices.
Availability	The Critical review report is available on request from the P.E.P. Association contact@pep-ecopassport.org
Scope of validity	The critical review report and the declaration of conformity remain valid within 5 years or until the PEP Drafting Rules, or the normative reference texts to which they refer, are modified.

¹ ISO 14025, ISO 14040 and ISO 14044 standards

2. Scope

In accordance with the General Instructions of the PEP ecopassport® program (PEP-General Instructions-ed-4.1-EN-2017 10 17) and additional to the PCR, "Product Category Rules" of the PEP ecopassport® eco-declaration program (PEP-PCR-ed3 -EN-2015 04 02) , this document sets out the specific rules for the storage tanks and defines the product specifications to be adopted by manufacturers in the development of their PRODUCT ENVIRONMENTAL PROFILES (PEPs) particularly with regard to:

- the technology and its type of application,
- the reference life time (RLT) taken into account for the products Life Cycle Assessment (LCA),
- the conventional use scenarios to be adopted during the product use phase.

The main purpose of those specific rules is to provide a shared basis to manufacturers when developing life cycle assessments for their products.

The various storage tanks technologies available are presented. Storage tanks are technical subsystems that can be used, for example, by systems dedicated to the exclusive production of hot water defined by the PSR-0004-ed3.0-EN-2018 02 09.

2.1. Description of the covered product families

The intended product family is referred as "STORAGE TANKS".

This family includes two products categories. It includes all the tanks for the storage of domestic hot water and all the tanks for the storage of cold or hot technical water. Individual or collective building applications are covered by this PSR:

- Individual building: tanks with a volume of 400 liters or less
- Collective building: tanks with a volume upper than 400 liters and less than 2000 liters.

Are excluded from the scope of the storage tanks equipped with a booster system. These are covered by the PSR 0004 for the Individual and standalone domestic storage water heater from the PEP ecopassport® Program.

2.1.1. Domestic hot water storage tank

A domestic hot water storage tank is a container for storing domestic hot water; it can include one or more exchangers.

2.1.2. Technical water storage tank

A technical water storage tank is a container for storing hot or cold water for heating purposes and / or for producing domestic hot water or cooling premises, via one or more exchangers.

This category includes cold or hot technical water storage tanks, as well as glycolated water storage tanks.

2.1.3. Buffer tank

A buffer tank is a container for storing hot or cold water for the purposes of heating water and / or premises or cooling rooms, for which the container is not in contact with the atmosphere (without exchanger).

2.2. Taking into account of technological developments

The specific rules to storage tanks will take into account any technological advance, as long as it is the subject of a request for inclusion in the specific rules to storage tanks to the PEP Association, which will decide according to the presentation of the new technology and the justification of the claimed performances.

3. Product life cycle assessment

3.1. Functional unit and reference flow description

These specific rules are additional to section "Functional unit and reference flow description" of the current PCR (PEP-PCR-ed3-FR- 2015 04 02).

3.1.1. Functional unit

The functional unit is:

- For the domestic hot water storage tanks:
« **Ensure the storage of 1 liter of domestic water*, with a reference lifetime of XX years of the product (* domestic water heated by another system) »**

With:

XX = 22 years for the domestic hot water storage tanks

- For the technical water storage tanks of the buffer tanks:
« **Ensure the storage of 1 liter of water, with a reference lifetime of XX of the product »**

With:

XX = 25 years for the technical water storage tanks of the buffer tanks

3.1.2. Reference product and reference flow description

The study is realized:

- On a storage tank,
- On a reference lifetime of 22 or 25 years depending on the products category studied,
- Then the impacts are reported to the functional unit according to the method described in paragraph 3.10.

The reference lifetime of domestic hot water storage tanks is 22 years. This duration corresponds to the reference lifetime of hot water production systems for collective housing applications (see PSR-0004-ed3.0-EN-2018 02 09). Manufacturers involved in the development of this PSR consider that the durability of a tank is the same regardless of its application (individual or collective).

The reference lifetime of technical water storage tanks or buffer tanks is 25 years. Manufacturers involved in the development of this PSR believe that the duration of this equipment is at least 25 years. This time is longer than the one of domestic hot water storage tanks due to the conditions of use and the quality of water more favorable to the durability of the equipment.

In the case of a declaration for a homogeneous product family, the environmental statement and the associated study will relate to a reference product with the following characteristics:

- For an individual building application, the study is carried out on a tank with a storage capacity of 200 liters or on the nearest volume product.
- For a building application, the study is carried out on a tank with a storage capacity of 1000 liters or on the nearest volume product.

An extrapolation rule to other products, in accordance with section 3.6, will apply and will be documented in the LCA report and the PEP form.

3.2. System boundaries

These specific rules are additional to section « System boundaries », of the current PCR (PEP-PCR-ed3-FR-2015 04 02).

3.2.1. Manufacturing stage

All the components delivered with the product and allowing its proper functioning must be included in the scope of the study.

In the case of a storage tank, the elements to be included are:

- The storage tank,
- The insulation,
- The element (s) integrated into the device (probes, anode, etc.)

If applicable:

- The exchanger,
- The emergency system (resistance or emergency heat exchanger),
- The regulation system,

- The installation or fixing elements delivered with the product.

On the other hand, it does not take into account the heating system and the additional ones providing the heating of the water. These components are excluded from the scope of the study and have to be considered at the level of the water heater. These elements may be the subject of a specific declaration.

All the elements included in the scope of the declaration must be documented in the LCA report and in the PEP form.

3.2.2. Distribution stage

For this step, the rules defined in the current PCR (PEP-PCR-ed3-FR- 2015 04 02) apply.

3.2.3. Installation stage

Conventionally, the storage tank installation involves:

- The manufacturing and processing of the components of the equipment necessary for its installation but which would be integrated only at the time of its installation.
- The processes and energies that are implemented at the time of installation. Energy flows related to the use of portable hand tools may be neglected.
- The treatment of packaging waste. In fact, the packaging waste generated during the installation stage is supposed to be eliminated by the installer once the equipment is installed.

Are not considered:

- Any modification of the frame and / or addition of elements not provided for by the manufacturer (eg masonry work, connection to the electrical network). The sanitary installation is also excluded from the scope of the study (examples: sink, faucet, cupboard ...).

The actual impact of these operations has to be calculated by the user of the declaration if he wishes according to the installation elements used during the construction phase.

3.2.4. Use stage

The use stage of a storage tank involves, once the element installed, no energy consumption. The energy consumption required for heating water has to be considered at the system level using the storage tank (see PSR-0004 "Individual and autonomous units for the exclusive production of domestic hot water"). Thus, the technical performance of the storage tank has to be taken into account at the scale of the system using the storage tank.

In addition, the energy consumption related to the emergency backup is neglected because of its exceptional trigger. Emergency backup is only triggered when the generator no longer operates while waiting for maintenance.

The implementation of a hot water storage tank requires maintenance operations whose maintenance scenario is specified in section 3.5.5.

Technical water storage tanks do not require any maintenance operation.

3.2.5. End of life stage

For this step, the rules defined in the current PCR (PEP-PCR-ed3-FR- 2015 04 02) apply.

3.3. Cut-off criteria

The rules specified in the paragraph "Cut-off rules" of the current PCR (PEP-PCR-ed3-EN-2015 04 02) apply.

3.4. Specific allocation rules

These specific rules complement the paragraph "Rules for allocation between co-products" of the current PCR (PEP-PCR-ed3-EN-2015 04 02).

In the case where primary data is shared with products other than those covered by these specific rules, the calculation of impacts is made in proportion to the mass of equipment manufactured.

3.5. Development of scenarios (default scenarios)

3.5.1. Manufacturing stage

A storage tank consists of components supplied by the manufacturer:

- directly shaped by the manufacturer,
- or ready to be assembled.

The rules defined in section 3.8 "Primary and secondary data collection requirements" of these specific rules apply.

3.5.1.1. Wastes from the manufacturing stage

The manufacturing of wastes and their treatment are included in the manufacturing phase.

Manufacturers can eliminate manufacturing wastes themselves, or under their responsibility. The LCA report precise how the manufacturer, or any person working on his behalf, fulfill those steps by distinguishing hazardous from non-hazardous manufacturing wastes, and by providing proof of those allegations.

When they are known, treatment processes ((incineration with energy recovery , landfill, and incineration without energy recovery) must be presented and justified in the LCA report, and the related environmental impacts must be taken into account as defined in the section "End-of-life treatment scenarios" of the current PCR.

The waste treatment processes justification must be defined, in the LCA report, by detailing the treatment sector and the valorization ratio selected for each waste.

Without more precise and justified information, the following values must be used by default:

- Product weight X 0,30 = 50% incinerated without energy recovery and 50% landfill

Where applicable, as this is a default penalty value, no energy recovery shall be taken into account.

As a sectorial convention, the waste collection transport is accounted with a 100km truck transport.

3.5.2. Distribution stage

The distribution stage must be analyzed in accordance with the section "System boundaries / Distribution step" of the current PCR.

3.5.3. Installation stage

3.5.3.1. Waste from the installation stage

Packaging wastes from a storage tank produced during the installation stage falls into the category of non-hazardous waste and are, in principle, removed by the installer once the storage tank is installed.

Their treatment is calculated by default as follow:

On the packaging mass	Cardboard, wood, corn starch, cellulose	Plastics and other products as non-hazardous waste
Percentage of packaging recycled at end of life	89%	21%
Percentage of packaging incinerated with energy recovery at end of life	8%	32%
Percentage of packaging incinerated without energy recovery (50%) and landfilled (50%) at end of life	3%	47%

Plastic film, straps, packing notes, labels or any other paper on or inside the package of the storage tank are considered to be insignificant and will not be included in the life cycle assessment for packaging waste.

By sector-based agreement, the transport stage for this waste shall be taken into account, assuming that it is trucked over a distance of 100 km.

3.5.4. Use stage

Once the element installed, no direct consumption of energy is considered.

3.5.5. Maintenance stage

Storage tanks require maintenance operations, involving:

Type of STAORAGE TANK	Number of visits	Intervention mode	Nature of intervention on the reference lifetime
Domestic hot water storage tank	1 annual visit	1 person in a van - 100 km return trip	Renewal of the protective anode of the tank once every 2 years (except if active anode or presence of a permanent anti-corrosion system)
Technical water storage tank	None	/	/
Buffer tank	None	/	/

The treatment of any other waste generated by the installation and maintenance steps, which is essential for the proper functioning of the storage tank, and not specified in the table above, must be taken into account and justified in the LCA report.

If a new product on the market requires maintenance or consumables not taken into account, these elements will be included in the study.

Their on-site supply has to be taken into account, considering a transport hypothesis of 100 km return trip in light truck.

3.5.6. End-of-life stage

Storage tanks, when they reach the end of their life, do not fall into the category of equipment covered by the WEEE Directive (Waste Electrical and Electronic Equipment).

After presenting the local requirements for managing of end-of-life storage tanks, the LCA report will detail how the organization deals with the disposal and/or recovery channels. the associated environmental impacts and how the manufacturer shall meet these requirements, if applicable.

With regard to recovery processes, the study will cover all stages until stock constitution before reuse.

Their transport stage shall be taken into account, considering a transport hypothesis of 100 km in a light truck.

In case of lack of specific justified information, the recyclability potential is calculated as follows:

On the mass of the bare drained product	No evidence of recovery
Percentage of product recycled at end of life	20%
Percentage of product incinerated with energy recovery at end of life	20%

Percentage of product incinerated without energy recovery at end of life	30%
Percentage of product landfilled at end of life	30%

3.6. Rules for extrapolation to a homogeneous environmental family

These rules are additional to section "Rule(s) for extrapolation to a homogeneous environmental family" of the PCR (PEP-PCR-ed3-FR- 2015 04 02).

The following sections detail the extrapolation rules applicable to each stage of the life cycle and the conditions of belonging to a homogeneous environmental family. To use these extrapolation rules, the manufacturer must justify in the LCA report that the range of products fulfills all the membership conditions.

The use of any other rule of extrapolation and/or definition of homogeneous environmental family should be justified in the LCA report.

3.6.1. Homogeneous environmental family definition

It is accepted that the PEP covers products other than those that constitute the reference product. These other products, different from the reference product, may be named (commercial references) in the PEP or in the LCA report, provided that they belong to the same homogeneous environmental family as the reference product. A homogeneous environmental family means a group of products satisfying the following characteristics:

- Similar function
- Same product standard
- Similar manufacturing technology: identical type of materials and identical manufacturing processes

3.6.2. Application of extrapolation rules

If the conditions of belonging to a homogeneous environmental family as defined in section 3.6.1 are met, the extrapolation rules to apply for each stage of the life cycle are those indicated in paragraphs 3.6.3 to 3.6.7. These rules are applicable on the scale of the product (or declared unit). The calculation of the extrapolation coefficients at the functional unit scale shall take into account the instructions in paragraph 3.10.2 using the following formula:

$$\begin{aligned}
 & \textit{Coefficient on the FU scale} \\
 & = \textit{Coefficient on the scale of the declared product} \\
 & \times \left(\frac{\textit{Total water storage capacity of reference product (L)}}{\textit{Total water storage capacity of the product considered (L)}} \right)
 \end{aligned}$$

With:

Water storage capacity = total nominal volume of stored water including the volume of domestic water and the volume of the internal exchanger(s) in liters

3.6.3. Extrapolation rule at the manufacturing stage

As part of a product range that respects the characteristics of a homogeneous environmental family as defined in section 3.6.1, the environmental impacts generated during the manufacturing stage are mainly correlated to **the total mass of the storage tank including the accessories and the packaging.**

For the manufacturing stage, the extrapolation rule to develop from the reference product scale (or declared unit) - data collection for any other storage tank in the same range is:

Coefficient on the scale of the declared unit	$\left(\frac{\text{Total mass of the product considered} + \text{Mass of packaging of the product considered (kg)}}{\text{Total mass of reference product} + \text{Mass of packaging of reference product (kg)}} \right)$
--	--

With:

Total mass of the product = storage tank mass including accessories, in kg

Mass of packaging = mass of the packaging of the storage tank, in kg.

3.6.4. Extrapolation rule at the distribution stage

As part of a product range that respects the characteristics of a homogeneous environmental family as defined in section 3.6.1, the environmental impacts generated during the distribution stage are mainly correlated to **the total mass of the storage tank including the accessories and the packaging.**

For the distribution stage, the extrapolation rule to develop from the reference product scale (or declared unit) - data collection for any other storage tank in the same range is:

Coefficient on the scale of the declared unit	$\left(\frac{\text{Total mass of the product considered} + \text{Mass of packaging of the product considered (kg)}}{\text{Total mass of reference product} + \text{Mass of packaging of reference product (kg)}} \right)$
--	--

With:

Total mass of the product = storage tank mass including accessories, in kg

Mass of packaging = mass of the packaging of the storage tank, in kg.

3.6.5. Extrapolation rule at the installation stage

As part of a product range that respects the characteristics of a homogeneous environmental family as defined in section 3.6.1, the environmental impacts generated in the installation phase are mainly correlated to **the total mass of the packaging of the storage tank**.

For the installation stage, the extrapolation rule to develop from the reference product scale (or declared unit) - data collection for any other storage tank in the same range is:

Coefficient on the scale of the declared unit	$\left(\frac{\text{Mass of packaging of the product considered (kg)}}{\text{Mass of packaging of reference product (kg)}} \right)$
--	---

With:

Mass of packaging = mass of the packaging of the storage tank, in kg.

3.6.6. Extrapolation rule in the use stage

As part of a range of products that respect the characteristics of a homogeneous environmental family as defined in section 3.6.1, the environmental impacts generated during the use stage are mainly correlated to **the total mass of the anode of the storage tank**.

For the use stage, the extrapolation rule to develop from the reference product scale (or declared unit) - data collection for any other storage tank in the same range is:

Coefficient on the scale of the declared unit	$\left(\frac{\text{Mass of the anode of the product considered (kg)}}{\text{Mass of the anode of the reference product (kg)}} \right)$
--	---

If the homogeneous environmental family studied does not have anode, the use stage does not require any extrapolation rule (coefficient equal to 1).

3.6.7. Extrapolation rule in the end-of-life stage

As part of a product range that respects the characteristics of a homogeneous environmental family as defined in section 3.6.1, the environmental impacts generated in the end-of-life stage are mainly correlated to **the total mass of the storage tank**.

For the end-of-life stage, the extrapolation rule to develop from the reference product scale (or declared unit) - data collection for any other storage tank in the same range is:

Coefficient on the scale of the declared unit	$\left(\frac{\text{Total mass of the product considered (kg)}}{\text{Total mass of the reference product (kg)}} \right)$
--	---

With:

Total mass of the product = storage tank mass including accessories, in kg

3.7. Rules applying to joint environmental declaration

These rules are complementary to the sections "Rules for the preparation of collective environmental declarations" of the PCR (PEP-PCR-ed3-EN-2015 04 02).

For a joint environmental declaration, the study must cover a "typical product ":

- **Individual building:** a storage tank with a volume of **200 liters** or, failing that, any other nearest volume.
- **Collective building:** a storage tank with a volume of **1000 liters**, or, failing that, any other nearest volume.

3.8. Requirements concerning the collection of primary and secondary data

These rules are additional to the sections "Requirements for the collection of primary data" and "Requirements for secondary data" of the PCR (PEP-PCR-ed3-EN- 2015 04 02).

As far as possible, the primary data (i.e. all the data associated with the manufacturing stage of the reference product and specific to an organization) is to be preferred and shall be justified in the LCA report, specifying:

- 1) primary data in case of a single supplier,
- 2) in case of procurement from several suppliers, the primary data to be taken into account is the data provided by major suppliers representing at least 50% of the procurement by volume (with respect to the total quantity bought). For example, for ten suppliers each providing 10 % of the procurement volume, at least five suppliers shall be considered in order to obtain an overall view of the primary information provided. Any other distribution rule should be mentioned in the LCA report and in the PEP.

If primary data are shared with products other than those referred to in these specific rules, the calculation of impacts will be done in proportion to the mass of the products manufactured.

This information is not always available to manufacturers of storage tanks: for lack of primary data, secondary data, i.e. data obtained from the life cycle assessment software database shall be used. PCR explains how to select the LCI modules. If the transportation information is not available, the data defined in the section "Transport scenarios" of the current PCR will be used.

The proportion of primary and secondary data used in the life cycle assessment of storage tanks must be indicated in the LCA report and may be included in the PEP, in the section describing the environmental impacts, in addition to the information required in the section 2.12 - Environmental Impacts - of the PCR. This proportion is determined regarding the product mass.

3.9. Data quality evaluation

The specific rules specified in section "Data quality evaluation" in the current PCR (PEP-PCR-ed3-EN- 2015 04 02) apply.

3.10. Calculation of environmental impact

3.10.1. Calculation of environmental impact at product level (declared unit)

The environmental impacts results generated by the life cycle of the reference product correspond to the environmental impacts on the scale of the declared unit.

3.10.2. Calculation of environmental impact at functional unit level (FU)

To ensure consistency of the results of environmental impacts between the functional unit (to store 1 liter of water) and the reference product (200 or 1000 liter tank), the PEP shall show the environmental impacts of the manufacturing, distribution, installation, use (including maintenance) and end-of-life stages as follows:

$$\text{Environmental impacts from the PEP (for 1 liter)} = \frac{\text{Environmental impacts of the reference product}}{\text{Storage capacity of the reference product}}$$

With:

Storage capacity of the reference product = total nominal volume of stored water including the volume of domestic water and the volume of the internal exchanger (s) in liters

4. Drafting of the Product Environmental Profile

4.1. General information

The specific rules specified in section "General information" of the current PCR (PEP-PCR-ed3-EN- 2015 04 02) apply.

In addition to the information required by the current PCR, the PEP must specify:

- The type of tank according to section 2.1
- The elements that make up the tank (to ensure, for example, whether a heat exchanger is included or not)
- The storage capacity of the tank expressed in liters
- The cooling constant "Qpr"
- The type of reference installation considered
- Reference type (s) of use

4.2. Constituent materials

The rules specified in section "Constituent materials" of the current PCR (PEP-PCR-ed3-EN- 2015 04 02) apply.

4.3. Additional environmental information

These specific rules are additional to section "Additional environmental information" of the PCR (PEP-PCR-ed3-EN- 2015 04 02).

In the context of performing Life Cycle Assessments at building level, the environmental impacts of the equipment must be considered at product level and the impacts related to energy consumption in the use stage must be treated separately.

To facilitate the use of the PEP results for LCA of buildings, the PEP may include:

- The table of the environmental impacts of the reference product expressed at product level (or declared unit level) in addition to the table on the functional unit level. The values must then be indicated in numerical values, expressed in the appropriate units to three significant digits (and, optionally, as a percentage) for each stage of the life cycle, and the total for each indicator of the complete life cycle assessment.

The following details must be indicated in the PEP, to ensure clarity and transparency for the user:

- For environmental impacts expressed per functional unit, the following wording is included:
"per kW corresponding to the functional unit"

- For environmental impacts expressed per declared product, the following wording is included: “per device corresponding to the reference product”
- The results of the environmental impacts in the use stage according to a breakdown of Module B (B1 to B7) in compliance with standards EN 15978 and EN 15804.
In the case of storage tanks, the impacts associated with maintenance operations have to be considered in module B2. The impacts of the other modules (B1, B3, B4, B5, B6 and B7) are zero.

PEP ecopassport®	Manufacturing stage (Section 3.5.1)			Distribution stage (Section 3.5.2)	Installation stage (Section 3.5.3)	Use stage (Sections 3.5.4 and 3.5.5)							End-of-life stage (Section 3.5.7)				Benefits
	Production stage			Construction stage		Use stage							End-of-life stage				Benefits
EN 15978 / 15804	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
	Supply of raw materials																
Transport																	
Manufacture																	
Transport																	
Installation process																	
Use																	
Maintenance																	
Repair																	
Replacement																	
Rehabilitation																	
Energy use during use of the building																	
Water use during use of the building																	
Demolition/Deconstruction																	
Transport																	
Waste treatment																	
Disposal																	
Benefits beyond the system boundaries																	

Table 1 – Lookup table showing breakdown of life cycle by stage or by module

- The extrapolation rules at declared product level

4.4. Environmental impacts

In order to comply with the requirements of the current PCR (PEP-PCR-ed3-EN-2015 04 02), the results presented in the table of environmental impacts relate to the implementation of the functional unit, namely the implementation of storage capacity over a period equal to the reference lifetime.

To know the impact of the product on its life cycle, the PEP user must multiply the results obtained for the functional unit by the total capacity of the installed tank.

In addition, the following clarification should be completed and presented in the PEP, to ensure clarity and transparency for the user:

In order to develop the PEP, the impacts were related to a storage capacity of 1 liter of water. The impact of the life cycle stages of the installed product has to be calculated by the user of the declaration by multiplying the impact considered by the storage capacity of the product.

The results of this PEP form cannot be compared directly with the results of another PEP form. The results have to be weighted in the PEP form according to the yield and performance of the storage tank studied by the user.

In the case of a PEP covering a family of products, the extrapolation rules must be mentioned and the notice below must be recorded in the PEP form:

The extrapolation factors are given for the environmental impact of the functional unit, namely the storage of 1 liter of water. For each stage of the life cycle, the environmental impacts of the product under consideration are calculated by multiplying the impacts of the declaration corresponding to the reference product by the extrapolation factor. The "Total" column has to be calculated by adding the environmental impacts of each stage of the life cycle.

5. Appendices

5.1. Terms and definitions

LCA	Life Cycle Assessment
EC	European Community
IEC	International Electrotechnical Commission
ES	European standards
EEE	Electrical and Electronic Equipment
EU	European Union (Union Européenne)
LCI	Life Cycle Inventory
Kg	Kilogram
KWh	Kilo Watt hour
L	Liter
FS	French standard
PCR	Product category rules
PEP	Product environmental profile
PSR	Product specific rules
Qpr	Cooling Constant
°C	Degree Celsius

5.2. References

Chapter	Subject	Sources
Erreur ! Source du	Definition of the product categories	Based on the eco-design regulation n ° 814/2014 EU

renvoi introuvable.		
---------------------	--	--

5.3. Declaration of conformity



PEP ECOPASSPORT® PROGRAMME

Certificate of critical review of the "SPECIFIC RULES FOR STORAGE TANKS"

Critical reviewer: Julie ORGELET – VH15

Document reviewed: PSR - Specific rules for storage tanks

Version and date: PSR-0016-Ed1-EN-2019

Review period: June 2018 - January 2019

Prepared by : Bureau Veritas LCIE on behalf of Uniclimate



Review repository:

The objective of the critical review is to verify the document's compliance with the following standards:

- The rules by product category of the PEP ecopassport® Programme - PEP-PCR ed3-FR-2015 04 02, available on www.pep-ecopassport.org
- The standards NF EN ISO 14020-2002 and NF EN ISO 14 025-2010
- The standards NF EN ISO 14040-2006 and 14 044-2006

Conclusion :

The revised document does not show any non-conformity with the above-mentioned standards. Therefore, the PSR for storage tanks complies with the requirements of these standards.



Julie ORGELET - DDemain

Independent LCA Expert

Le 31/01/2019