

# ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804+A2

Owner of the Declaration	Ideal standard International
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-IDE-20230006-IBD1-EN
Issue date	24.05.2023
Valid to	23.05.2028

**Ceramic Fine Fireclay ISI**  
**Ideal Standard International**

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ECO PLATFORM

**EPD**  
VERIFIED



# 1. General Information

## Ideal Standard International

### Programme holder

IBU – Institut Bauen und Umwelt e.V.  
 Hegelplatz 1  
 10117 Berlin  
 Germany

### Declaration number

EPD-IDE-20230006-IBD1-EN

### This declaration is based on the product category rules:

Sanitary ceramics, 01.08.2021  
 (PCR checked and approved by the SVR)

### Issue date

24.05.2023

### Valid to

23.05.2028



Dipl.-Ing. Hans Peters  
 (Chairman of Institut Bauen und Umwelt e.V.)



Dipl.-Ing. Hans Peters  
 (Managing Director Institut Bauen und Umwelt e.V.)

## Ceramic Fine Fireclay ISI

### Owner of the declaration

Ideal standard International  
 Da Vincilaan 2  
 1935 Zaventem Belgium  
 France

### Declared product / declared unit

1 kg  
 of ceramic fine fireclay product

### Scope:

The EPD contains the result of 1 kg of ceramic Fine fire clay product produced by Ideal Standard. It is representative for the following ceramic products categories: bathroom basin ceramic, bidet, pedestal/semi-pedestal and washstand basin ceramic) manufactured in Armitage (United Kingdom) and Teplice (Czech Republic). As the result is for 1kg of ceramic, the user can easily calculate the results for ceramic products, noted above according to the weight.

Foreground data has been provided directly by Ideal Standard and background LCA data is based on Ecoinvent 3.8 and Industry 2.0 data. The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

The EPD was created according to the specifications of EN 15804+A2. In the following, the standard will be simplified as *EN 15804*.

### Verification

The standard EN 15804 serves as the core PCR		
Independent verification of the declaration and data according to ISO 14025:2011		
<input type="checkbox"/>	internally	<input checked="" type="checkbox"/> externally



Vito D'Incognito,  
 (Independent verifier)

## 2. Product

### 2.1 Product description/Product definition

This declaration covers 1 kg of standard white Fine Fire Clay product. Product categories included in this EPD are: bowls (bathroom basin ceramic, bidet, pedestal/semi-pedestal and washstand basin ceramic, manufactured in Teplice (Czech Republic) and Armitage (UK).

The EPD is based on average data between both plants. A variability study is performed to show the representativeness of the average for both plants.

The manufacturer can - within the framework of the *European Regulation N° 305/2011 (CPR)* - present the Declaration of Performance (DOP) of the product confirming that the product has a CE marking.

### 2.2 Application

The products/solutions are used in private and public bathrooms. The product can be used in new construction and renovation work for hygienic and household use.

### 2.3 Technical Data

#### Constructional data

Name	Value	Unit
Crazing test 1hr in autoclave with 5 bar steam		-
Impact resistance Ball bearing dropped from fixed height	Minimum 1 drop without breaking	N/cm
Resistance to chemicals and staining EN14688 for Wash Basins therefore by extension to other Ceramic Products. Specific chemicals in contact then cleaned with specific apparatus without permanent marking	No remaining chemical evident	-
Resistance to temperature change EN14688 for Wash basins. 1000 hot (75 degC) / cold (15 degC) water cycles without visible damage	No visible damage	-
Load resistance	150	kg
Resistance to abrasion EN14688 for Wash Basins therefore by extension to other Ceramic Products. Loaded diamond tool (scratch) / Loaded abrasive paper wheel (abrasion) for repeated cycles.	No scratches through outer (glaze) layer	

The manufacturer can - within the framework of the *European Regulation N° 305/2011 (CPR)* - present the Declaration of Performance (DOP) of the product confirming that the product has a CE marking.

### 2.4 Delivery status

The products are packed: wooden pallet, PE plastic and cardboard, and are accompanied with an instruction and guarantee sheet. The products can come in different shapes and dimensions. An overview of all included products in this EPD can be provided by Ideal Standard.

### 2.5 Base materials/Ancillary materials

This EPD includes different product categories: bathroom basin, bidet, pedestal/semi-pedestal, and washstand basin: the Fine Fire Clay ceramic is composed of Chamotte - ground fired clay, Clay - Ball clay, Sand as silica and Glaze.

This product/article/at least one partial article contains

substances listed in the candidate list (date: 16.05.2023) exceeding 0.1 percentage by mass: no

This product/article/at least one partial article contains other carcinogenic, mutagenic, reprotoxic (CMR) substances in categories 1A or 1B which are not on the candidate list, exceeding 0.1 percentage by mass: no

Biocide products were added to this construction product or it has been treated with biocide products (this then concerns a treated product as defined by the (EU) Ordinance on Biocide Products No. 528/2012): no

### 2.6 Manufacture

- Slip preparation  
Production of the ceramic mixture (slip) and unloading/storage of raw materials in the area.
- Glaze preparation  
Production of glaze with needed colour.
- Casting shop  
Casting of ceramic products in different moulds.
- Dryers  
Drying is the process of taking off the humidity and the final results are dried products.
- White inspection  
The first inspection of dried ceramic products. The main focus is checking the quality and cleaning the surface of the products. At the end of the process the products are grouped in three different directions: A grade products, products for repair and scrap.
- Spraying  
Covering the ceramic product with glaze
- Kilns  
Firing of ceramic products
- Gloss inspection  
Final inspection for visual control of all products for visible defects. Separating the products again into three groups: for packaging, for repairing by hand or for grinding machines and scrap (pitcher).
- Packaging  
Different kinds of activities for the packaging of the products.

\*Moulds making  
Development of a new matrix for the production of gypsum moulds for casting and repairing the damaged matrix.

\*Mould shop  
Production of gypsum moulds for casting ceramic products and polyurethane setters for supporting the casting process.

### 2.7 Environment and health during manufacturing

Environmental, occupational health, safety and quality management at the Ideal Standard plants are in accordance with the following standards:

- ISO 14001
- ISO 9001
- ISO 45001

### 2.8 Product processing/Installation

It is considered that there is no assembly waste, based on the fact that the product is prefabricated and installed by hand.

### 2.9 Packaging

A wooden pallet, PE plastic bag and cardboard are used to pack and transport the product to the supplier/customer. The product is also accompanied by an instruction and guarantee

sheet.

### 2.10 Condition of use

The product will not change in material composition over its use.

### 2.11 Environment and health during use

Under normal conditions of use, the product does not cause any adverse health effects or release of volatile organic compounds (VOCs) into indoor air.

No environmental impact on water, air or soil is expected.

### 2.12 Reference service life

The reference service life is not relevant, as module B is not considered.

### 2.13 Extraordinary effects

#### Fire

Not subjected to fire classification

#### Water

No risks are expected to occur in terms of environmental and human health.

### Mechanical destruction

In case of mechanical destruction, no risks are expected to occur in terms of environment and human health.

### 2.14 Re-use phase

It is possible to recycle ceramic products in the production process. This is already applied to production waste. The recycling of post-consumer waste depends on the sorting and take-back of these waste streams at the demolition site.

### 2.15 Disposal

According to the average European end-of-life scenario described in Annex C of the Product Environmental Footprint Pilots (PEFCR) 6.3 guidance, the following disposal scenarios have been considered: 100 % of the ceramic is landfilled.

### 2.16 Further information

Additional information on Fine Fire Clay ceramic products manufactured by Ideal Standard can be found on: <https://www.idealstandard.com/>

## 3. LCA: Calculation rules

### 3.1 Declared Unit

The EPD is relevant to 1kg of Fine Fire Clay ceramic product.

The EPD is based on average data of the different plants, Teplice (CZ) and Armitage (UK). A variability study is performed to show the representativeness of the average for both plants.

The variability between the Armitage plant against the average is less than 30%.

The variability between the Teplice plant against the average is less than 30%.

#### Declared unit

Name	Value	Unit
Declared unit	0.001	t

As the result is for 1kg of ceramic, the user can easily calculate the results for ceramic products, as noted above according to the weight. The products typically weigh between 4 and 32 kg.

### 3.2 System boundary

Cradle-to-gate with options, including modules A4, A5, C1, C2, C3, C4 and D

### 3.3 Estimates and assumptions

The following processes are excluded because data was not available:

- Packaging of the raw materials used to produce the glaze of the ceramic products
- Transport of Ball clay raw material to CZ plant
- Transport packaging final product
- Ancillary materials in CZ plant
- Packaging and transport of ancillary materials used during the production process
- Packaging and transport of ancillary materials used during installation

No further approximations have been made to replace the missing data, as they were considered to be not relevant based on the first iterations of the results.

### 3.4 Cut-off criteria

The following processes are considered below cut-off:

- Big bags used as packaging of some raw materials for the ceramic production, as they are reused.
- For production waste only the most relevant production waste streams have been considered (waste of ancillary materials and smaller waste flows have been excluded).
- Only the most relevant ancillary materials have been selected based on consumption rate and importance in the production process.
- Environmental impacts caused by the personnel of the production plants are not included in the LCA, e.g. waste from the cafeteria and sanitary installations or environmental effects caused by commuter traffic. Cooling of the plants in order to ensure a comfortable indoor climate for the personnel for example is also neglected.

### 3.5 Background data

Ecoinvent 3.8 and Industry 2.0

### 3.6 Data quality

Foreground data is specific to Ideal Standard and is collected for the reference year 2021. Background data is based on Ecoinvent 3.8 which is released in September 2021.

This LCA study is looking at 1 kg of ceramic Fine fire clay products. This ceramic is manufactured in Armitage (United Kingdom) or Teplice (Czech Republic). The variability between the Armitage plant against the average (between the Armitage and Teplice plant) is less than 30%.

The variability between the Teplice plant against the average (between the Armitage and Teplice plant) is less than 30%.

### 3.7 Period under review

The data collected by Ideal Standard is based on data from the production year 2021.

### 3.8 Geographic Representativeness

Land or region, in which the declared product system is manufactured, used or handled at the end of the product's lifespan: Europe

### 3.9 Allocation

Amounts of the raw materials/components (modules A1 and A2) and the packaging of the final product have been extracted from recipes used in the respective factory. No allocation was necessary. Note that the production losses have been added to the recipe.

The data for the production process (module A3) i.e. input and outputs such as energy consumption, water consumption, production waste, ancillary materials and emissions are based on factory averages (total amount in the factory converted to 1

kg based on the total production volume in kg).

### 3.10 Comparability

Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to *EN 15804* and the building context, respectively the product-specific characteristics of performance, are taken into account.

The used background database are Ecoinvent 3.8 and Industry 2.0.

## 4. LCA: Scenarios and additional technical information

### Characteristic product properties biogenic carbon

The product does not contain biogenic carbon, but its accompanying packaging contains 8.77E-02 kg C per product in the form of paper, cardboard and wooden pallets.

### Information on describing the biogenic Carbon Content at factory gate

Name	Value	Unit
Biogenic carbon content in product	-	kg C
Biogenic carbon content in accompanying packaging	0.0877	kg C

### Transport to the building site (A4)

Name	Value	Unit
Litres of fuel	260	l/100km
Transport distance	2000	km
Capacity utilisation (including empty runs)	-	%
Gross density of products transported	-	kg/m <sup>3</sup>
Capacity utilisation volume factor	-	-

### Installation into the building (A5)

It is considered that there is no assembly waste, based on the fact that the product is prefabricated and installed by hand.

Only the impact of packaging waste has been considered.

Name	Value	Unit
Packaging waste (paper and cardboard) PEF EOL scenario Europe for coverage carton packaging: 11 % incineration; 75 % recycling; 14 % landfill	0,085	Kg
Packaging waste (PE) PEF EOL scenario Europe for PE packaging: 32 % incineration; 29 % recycling; 39 % landfill	0,039338	Kg
Packaging waste (wooden pallet) PEF EOL scenario Europe for wooden pallets: 32 % incineration; 30 % recycling; 38 % landfill	0,110	Kg

### End of life (C1-C4)

According to the average European end-of-life scenario described in Annexe C of the Product Environmental Footprint Pilots (PEFCR) 6.3 guidance, the following disposal scenarios have been considered: 100% of the ceramic parts are landfilled.

Name	Value	Unit
Collected separately waste type	1	kg
Landfilling	1	kg

### Reuse, recovery and/or recycling potentials (D), relevant scenario information

Module D contains low benefits and loads of recycling of the packaging of the final product and the benefits of energy recovery during the incineration of the plastic. There are no benefits and loads from the end of life of the product, because the product is 100 % landfilled.

Name	Value	Unit
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## 5. LCA: Results

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; ND = MODULE OR INDICATOR NOT DECLARED; MNR = MODULE NOT RELEVANT)

Product stage			Construction process stage		Use stage							End of life stage				Benefits and loads beyond the system boundaries
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	MND	MND	MNR	MNR	MNR	MND	MND	X	X	X	X	X

### RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 Kg Declared unit

Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	kg CO <sub>2</sub> eq	2.82E-01	3.53E-02	1.43E+00	3.93E-01	3.1E-01	1.54E-04	8.15E-03	0	6.08E-03	-1.67E-01
GWP-fossil	kg CO <sub>2</sub> eq	2.81E-01	3.53E-02	1.7E+00	3.93E-01	3.04E-02	1.52E-04	8.14E-03	0	6.06E-03	-4.7E-02
GWP-biogenic	kg CO <sub>2</sub> eq	7.44E-04	1.16E-05	-2.71E-01	1.4E-04	2.79E-01	8.44E-07	2.91E-06	0	1.15E-05	-1.19E-01
GWP-luluc	kg CO <sub>2</sub> eq	9.57E-05	1.62E-05	1.01E-03	1.57E-04	2.77E-06	3.6E-07	3.26E-06	0	4.47E-06	-1.3E-04
ODP	kg CFC11 eq	3.96E-08	7.93E-09	2.07E-07	9.1E-08	1.43E-09	7.66E-12	1.89E-09	0	2.25E-09	-4.67E-09
AP	mol H <sup>+</sup> eq	1.01E-03	3.4E-04	3.8E-03	1.12E-03	3.85E-05	8.65E-07	2.31E-05	0	5.35E-05	-2.07E-04
EP-freshwater	kg P eq	7.51E-06	2.23E-07	5.03E-05	2.8E-06	7.31E-08	1.63E-08	5.81E-08	0	1.86E-07	-2.46E-06
EP-marine	kg N eq	3.51E-04	8.96E-05	8.21E-04	2.22E-04	1.51E-05	1.1E-07	4.6E-06	0	1.83E-05	-5.07E-05
EP-terrestrial	mol N eq	3.92E-03	9.93E-04	9.17E-03	2.47E-03	1.52E-04	1.27E-06	5.12E-05	0	2.02E-04	-5.57E-04
POCP	kg NMVOC eq	1.11E-03	2.75E-04	2.59E-03	9.49E-04	4.55E-05	3.5E-07	1.97E-05	0	5.74E-05	-1.9E-04
ADPE	kg Sb eq	7.75E-07	8.26E-08	2.24E-06	1.06E-06	1.7E-08	8.23E-10	2.21E-08	0	1.44E-08	-1.54E-07
ADPF	MJ	4.22E+00	5.17E-01	3.24E+01	5.95E+00	9.74E-02	3.23E-03	1.23E-01	0	1.73E-01	-1.05E+00
WDP	m <sup>3</sup> world eq deprived	3.97E-02	1.44E-03	4.48E-01	1.81E-02	5.66E-04	3.78E-05	3.76E-04	0	8.11E-04	-4.52E-02

GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources; WDP = Water (user) deprivation potential

### RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 Kg Declared unit

Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ	1.47E-01	6.52E-03	2.51E+00	8.37E-02	6.83E-01	6.41E-04	1.74E-03	0	8.94E-03	0
PERM	MJ	0	0	2.37E+00	0	-1.55E+00	0	0	0	0	8.68E-01
PERT	MJ	1.47E-01	6.52E-03	4.88E+00	8.37E-02	-8.65E-01	6.41E-04	1.74E-03	0	8.94E-03	8.68E-01
PENRE	MJ	4.75E+00	5.19E-01	3.59E+01	5.99E+00	2.15E-01	3.83E-03	1.24E-01	0	1.78E-01	0
PENRM	MJ	0	0	3.59E-01	0	-2.19E-01	0	0	0	0	1.04E-01
PENRT	MJ	4.75E+00	5.19E-01	3.62E+01	5.99E+00	-4.32E-03	3.83E-03	1.24E-01	0	1.78E-01	1.04E-01
SM	kg	0	0	0	0	0	0	0	0	0	6.23E-02
RSF	MJ	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0
FW	m <sup>3</sup>	3.67E-04	3.38E-05	1.33E-02	4.38E-04	5.26E-05	2.43E-06	9.08E-06	0	1.86E-04	-1.08E-03

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

### RESULTS OF THE LCA - WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1 Kg Declared unit

Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	kg	6.68E-06	1.2E-06	4.64E-05	1.55E-05	2.32E-07	2.45E-09	3.22E-07	0	1.9E-07	-8.96E-07
NHWD	kg	1.45E-02	2.23E-02	1.26E-01	3.12E-01	7.03E-02	1.18E-05	6.47E-03	0	1E+00	-5.89E-03
RWD	kg	1.04E-05	3.51E-06	9.76E-05	4.02E-05	6.31E-07	2.36E-08	8.34E-07	0	1.18E-06	-2.86E-06
CRU	kg	0	0	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	6.23E-02	0	0	0	0	-6.23E-02
MER	kg	0	0	0	0	0	0	0	0	0	0
EEE	MJ	0	0	0	0	1.59E-01	0	0	0	0	-1.59E-01
EET	MJ	0	0	0	0	7.95E-02	0	0	0	0	-7.95E-02

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy

## RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional:

1 Kg Declared unit

Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	Disease incidence	1.85E-08	2.65E-09	2.98E-08	3.15E-08	6.7E-10	2.39E-12	6.54E-10	0	1.04E-09	-4.11E-09
IR	kBq U235 eq	7.31E-03	2.24E-03	1.31E-01	2.58E-02	4.32E-04	2.86E-05	5.36E-04	0	8.85E-04	-3.02E-03
ETP-fw	CTUe	1.93E+00	3.89E-01	8.06E+00	4.67E+00	1E-01	2.04E-03	9.69E-02	0	9.95E-02	-4.89E-01
HTP-c	CTUh	1.01E-10	1.5E-11	6.28E-10	1.5E-10	1.93E-11	6.27E-14	3.12E-12	0	2.89E-12	-1.99E-11
HTP-nc	CTUh	1.88E-09	3.86E-10	6.59E-09	4.72E-09	1.41E-10	2E-12	9.79E-11	0	5.84E-11	-4.51E-10
SQP	SQP	1.45E+00	3.06E-01	2.54E+01	4.15E+00	9.1E-02	5.85E-04	8.6E-02	0	3.27E-01	-1.28E+01

PM = Potential incidence of disease due to PM emissions; IR = Potential Human exposure efficiency relative to U235; ETP-fw = Potential comparative Toxic Unit for ecosystems; HTP-c = Potential comparative Toxic Unit for humans (cancerogenic); HTP-nc = Potential comparative Toxic Unit for humans (not cancerogenic); SQP = Potential soil quality index

Disclaimer 1 – for the indicator “Potential Human exposure efficiency relative to U235”. This impact category deals mainly with the eventual impact of low-dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Disclaimer 2 – for the indicators “abiotic depletion potential for non-fossil resources”, “abiotic depletion potential for fossil resources”, “water (user) deprivation potential, deprivation-weighted water consumption”, “potential comparative toxic unit for ecosystems”, “potential comparative toxic unit for humans – cancerogenic”, “Potential comparative toxic unit for humans - not cancerogenic”, “potential soil quality index”. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.

This EPD was created using a software tool.

## 6. LCA: Interpretation

The manufacturing process (module A3), in particular the energy consumption, has the largest contribution on all impact categories. Besides the manufacturing, also the transport to the installation site (A4) has a significant contribution, due to the

weight of the products. The impact of the raw materials is less significant. There are no benefits and loads from the end of life of the product, because the product is 100 % landfilled.

## 7. Requisite evidence

## 8. References

### Standards

#### EN 997

WC pans and WC suites with integral trap - constructional and performance requirements.

#### EN 14688

Sanitary appliances. Wash basins. Functional requirements and test methods

#### EN15804

EN15804:2012+A2:2019+AC:2021, Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products.

#### ISO 9001

ISO 9001:2015: Quality management systems — Requirements

#### ISO 14001

ISO 14001:2015: Environmental management systems — Requirements with guidance for use

#### ISO 14025

EN ISO 14025:2011, Environmental labels and declarations — Type III environmental declarations — Principles and procedures.

#### ISO 14040

ISO 14040:2006: Environmental management – Life cycle

assessment – Principles and framework

#### ISO 14044

ISO 14044:2006: Environmental management – Life cycle assessment – Requirements and guidelines.

#### ISO 45001

ISO 45001:2018: Occupational health and safety management systems Requirements with guidance for use

#### PCR Part A

Calculation rules for the Life Cycle Assessment and Requirements on the Background Report, Institut Bauen und Umwelt e.V., [www.bauumwelt.com](http://www.bauumwelt.com).

#### PCR Part B

Institut Bauen und Umwelt e.V, Berlin (pub.): PCR Guidance- Texts for Building-Related Products and Services From the range of Environmental Product Declarations of Institute Construction and Environment e.V. (IBU) : Requirements on the EPD for Toilet set

#### Further references

#### CPR

European Regulation N° 305/2011 (CPR)

#### Ecoinvent

Wernet, G., Bauer, C., Steubing, B., Reinhard, J., Moreno-Ruiz, E., and Weidema, B., 2016. The ecoinvent database version 3

(part I): overview and methodology. The International Journal of Life Cycle Assessment, [online] 21(9), pp.1218–1230. Available at:<http://link.springer.com/10.1007/s11367-016-1087-8>

#### **IBU**

IBU 2021. Institut Bauen und Umwelt e.V.: General Instructions for the EPD programme of Institut Bauen und Umwelt e.V., Version 2.0, Berlin: Institut Bauen und Umwelt e.V., 2021 [www.ibu-epd.com](http://www.ibu-epd.com)

#### **Industry 2.0**

Industry 2.0 (from PlasticsEurope, worldsteel and ERASM) LCA database as integrated in SimaPro 9.3.0.3.

#### **PEFCR**

European commission (2018). Product Environmental Footprint Category Rules PEFCR Guidance, version 6.3.

#### **Pré Consultants (2021)**

SimaPro 9.3.0.3 [Computer Software]. Amersfoort, The Netherlands.

#### **REACH candidate list**

ECHA, REACH Candidate List of substances of very high concern for Au Biocide Products No. 528/2012 EU, REGULATION (EU) No 528/2012 OF THE EUROPEAN PARLIAMENT





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