ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A2*

Owner of the Declaration	Hansgrohe Group
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-HAN-20240193-ICC1-EN
Issue date	26.09.2024
Valid to	25.09.2029

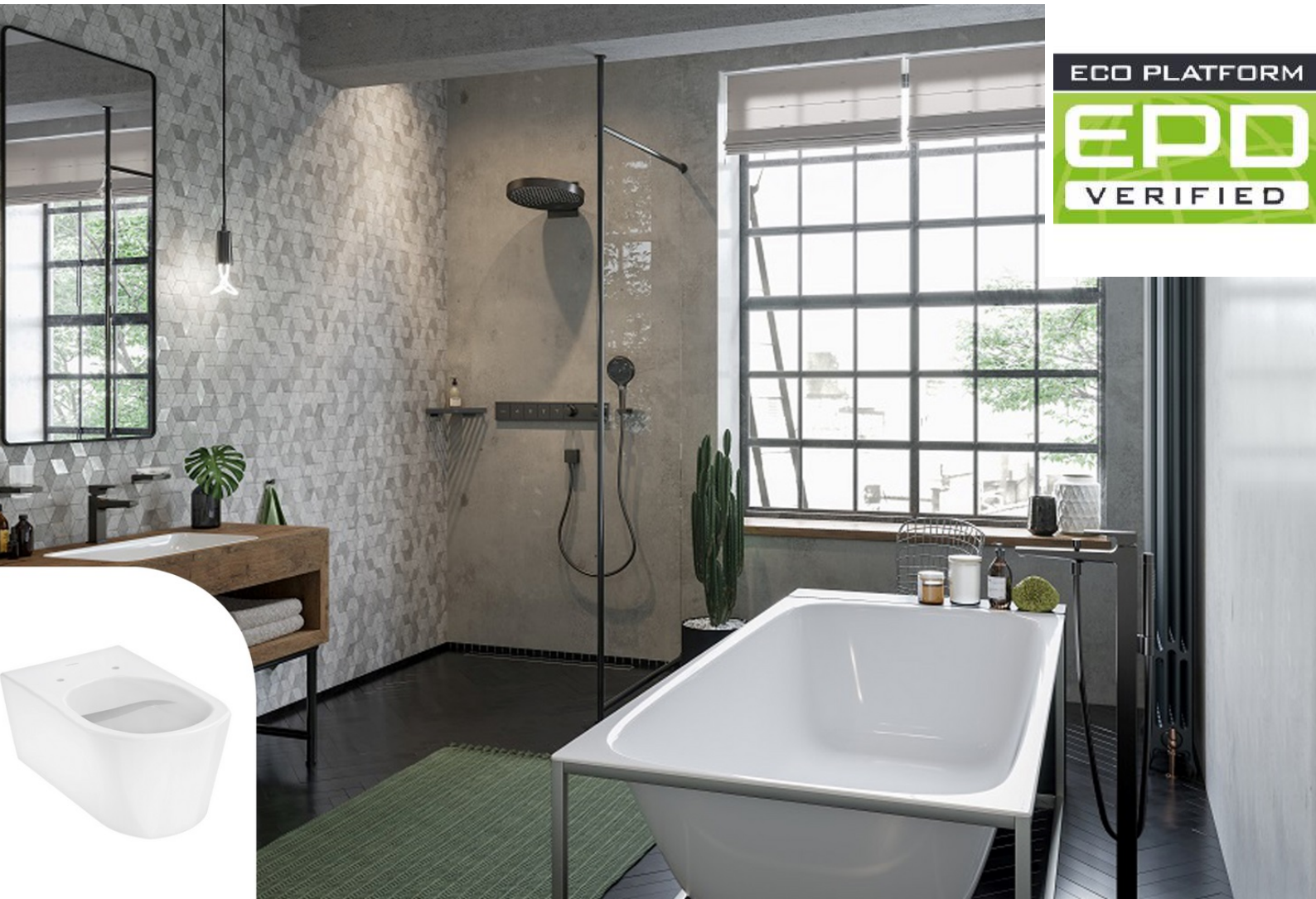
Toilets

Hansgrohe Group

Institut Bauen und Umwelt e.V.

ECO PLATFORM EPD VERIFIED

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AXOR hansgrohe

1. General Information

Hansgrohe Group

Programme holder

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

Declaration number

EPD-HAN-20240193-ICC1-EN

This declaration is based on the product category rules:

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

Issue date

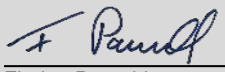
26.09.2024

Valid to

25.09.2029



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



Florian Pronold
(Managing Director Institut Bauen und Umwelt e.V.)

Toilets

Owner of the declaration

Hansgrohe Group
Auestr. 5-9
77761 Schiltach
Germany

Declared product / declared unit

One piece of an average ceramic toilet incl. packaging

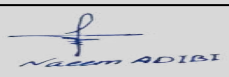
Scope:

This average EPD is valid for the product group of ceramic toilets of the hansgrohe brand sold on the European market. The products are produced in Italy and Egypt.
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
☐ internally ☒ externally



Dr Naeem Adibi,
(Independent verifier)

2. Product

2.1 Product description/Product definition

The product group of toilets refers to ceramic articles in various sizes and designs (excluding E-toilets or bundles).

The basic material of ceramics consists of natural raw materials such as clay, kaolin, quartz and feldspar that are mixed according to a specific recipe. A glaze protects the products from external influences.

Depending on the model, additional components (e. g. made of plastic or metals) may be included in the scope of delivery.
For the placing on the market of the product in the European Union/European Free Trade Association (EU/EFTA) (with the exception of Switzerland) Regulation (EU) No. 305/2011 (CPR) applies. The product needs a declaration of performance taking into consideration

- *EN 997*:2012, WC pans and WC suites with integral trap and the CE-marking.

For the application and use the respective national provisions apply.

2.2 Application

As typical sanitary installations toilets are part of the bathroom and support the water-based physical hygiene. They are connected to a cistern to provide the hygiene function.

2.3 Technical Data

Constructional data

Name	Value	Unit
Width	360	mm
Length	540	mm
Height	320	mm
Maximum heat resistance temperature (if relevant)	1100	°C
Maximum water absorption (if relevant)	6	Vol.-%
Resistance to chemicals and staining	passed	-
Resistance to temperature change	passed	-

Performance data of the product in accordance with the declaration of performance with respect to its essential characteristics according to

- *EN 997*:2012, WC pans and WC suites with integral trap.

2.4 Delivery status

The toilets are delivered singularly packaged. The packaging is customized to the size of the product and supplies. The products with the smallest and the largest volume have dimensions between 390x570x360 mm and 391x580x391 mm.

2.5 Base materials/Ancillary materials

The material composition (incl. packaging and additional parts) of toilets are as follows:

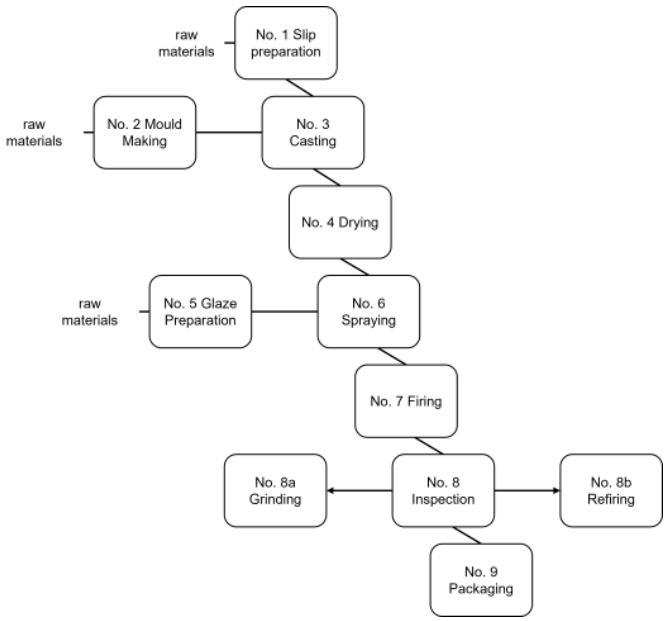
Name	Value	Unit
Ceramic	91 - 94	%
Steel	< 1	%
Plastic	< 1	%
Other	<1	%
Cardboard and paper (packaging)	6 - 8	%
Polyethylene (packaging)	< 1	%

This product contains substances listed in the candidate list (date: 12.12.2023) exceeding 0.1 percentage by mass: **no**.

This product/article/at least one partial article contains other 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): **yes**.
In order to get the desired viscosity, fungicides are added to the glaze. These burn completely during the firing process and are not part of the final product.

2.6 Manufacture



No. 1: The "slip" is prepared by mixing raw materials and water.
No. 2: The moulds are made by gypsum.
No. 3: The "slip" is filled into the moulds.
No. 4: The pieces are drying.
No. 5: Glaze is prepared.
No. 6: Glaze is applied.
No. 7: The pieces are fired in the kiln.
No. 8: The pieces are inspected for any defects.
No. 8a: Some parts are reworked, e. g. by grinding certain areas.
No. 8b: Some parts are refired.
No. 9: The products are packed.

2.7 Environment and health during manufacturing

Hansgrohe SE tries to keep the impact on people and the environment as low as possible when manufacturing its products.
For example, state-of-the-art systems (e. g. kilns) are used in the production process of sanitary ceramics and application of

the glaze is partially carried out by robots.
In addition, all production sites are certified according to the *ISO 9001* (quality), *KIWA* and *NF*.

2.8 Product processing/Installation

Mounting of wall hung toilets is carried out in combination with a cistern system, which usually includes attachment parts. Additional required parts are included in the scope of delivery.

- Shorten the drain pipes (tools: pencil, meter stick, saw, file).
- Add the sound insulation mat.
- Insert the drain pipes (tools: grease).
- The toilet is fixed to the mounting parts of the cistern system (tools: hexagonal offset screwdriver).
- Sealing is done with silicone (tools: silicone syringe).

2.9 Packaging

For product protection the toilets are individually packed in a printed cardboard box. The inlay of the packaging consists of folded cardboard or plastic bags, depending on the product. The packaging can be fully recycled. All packaged products fit on a reusable euro pallet.

2.10 Condition of use

To protect the toilets and make them durable, the ceramic material is glazed. If used as intended, there are no unhealthy contaminants caused by the sanitary ceramics. To ensure the longevity of the product, it should be cleaned regularly.

2.11 Environment and health during use

Our products do not emission any contaminants or substances that are harmful to the environment or health during the use phase.

2.12 Reference service life

The quality and durability of our toilets is designed for a product life of about 20 years. Which on average is approximately the duration of use by the consumers.

All products in the scope of this study have a 20-year warranty.

2.13 Extraordinary effects

Fire

Sanitary ceramics are classified as building material class A1 (non-combustible without combustible building materials) in accordance with EN-13501-1.

Fire protection

Name	Value
Building material class	A1
Burning droplets	-
Smoke gas development	-

Water

If a room in which the products offered by Hansgrohe are installed is flooded with water, the products are not affected in their function.
There will be no environmental impact.

Mechanical destruction

Minor mechanical damages have no effect on product function. If the glazed surface of the ceramic is severely destroyed by a mechanical stress and the glaze flakes off, there is a very small possibility of water uptake as usual with ceramic products. In this event the products may need to be replaced.

2.14 Re-use phase

The toilets are not taken back by the manufacturer for the purpose of reuse. Users can disassemble the products repeatedly within the reference utilization period and reuse them elsewhere.

2.15 Disposal

The waste code of the product is *AVV* 17 01 03.
Disassembly of the products consists of the same steps as assembly, in reverse order. Due to the disassembly process, the individual parts may be collected separately.
The ceramic material will mostly be disposed via inert landfills. All metal components can be recycled (as scrap). All plastic components have a high calorific value and can be sent for thermal recycling.
In countries where no thermal recycling or substance recycling is established, disposal takes place via the waste incineration plant.

2.16 Further information

Additional information about our products can be found at https://www.hansgrohe.com.

3. LCA: Calculation rules

3.1 Declared Unit

The results of this EPD are valid for the following declared unit: one (1) wall hung toilet including packaging, used in accordance with the manufacturer's recommendations for a 20-year life, following the manufacturer's operating instructions. The wall frame and toilet lid are excluded.

Weighted averaging based on forecast sales volumes is chosen as the basis for creating the environmental profile. 9 different toilets were considered.

Declared unit

Name	Value	Unit
Declared unit	1	piece
Declared unit (ceramic mass)	0.0247	t
Mass (product)	24.858	kg
Mass (packaging)	1.774	kg

3.2 System boundary

This average EPD follows the EPD type "cradle to grave". The following life cycle modules are declared:

Modules A1-A3

The product stage begins with considering the production of the necessary raw materials and energies, including all corresponding upstream chains and the actual procurement transports. Furthermore, the entire manufacturing phase was mapped, including the treatment of production waste until the end-of-waste status (EoW) was reached. Location-specific electricity mixes were considered.

Module A4

Distribution transports (A4) to the customers were considered.

Module A5

This module covers the installation process with the corresponding packaging waste generated that needs to be disposed of.

Module B2
Maintenance expenses are declared in this module and consist of weekly cleaning expenses for these products.

Module B1, B3-B7
These modules were considered, but evaluated as not relevant and therefore considered as zero.

Modules C1-C4
The modules include the environmental impacts for dismantling and the treatment of the waste fractions until the end-of-waste status (EoW) is reached, including the associated transports at the end of the product life cycle.

Module D
Identification of the benefits and costs of the product outside the system boundary. For plastics, these consist of energy credits from thermal utilization in the form of the average European electricity mix or thermal energy from natural gas. Recycling of steel results in material credits.

3.3 Estimates and assumptions
For the incineration with energy recovery (thermal and electric) of waste, an r1 value of >0.6 is assumed. The net efficiency for the average waste incinerated is 44 %.

All products are assumed to be first shipped to the warehouse and then shipped to the customers. This is a conservative assumption since some products are shipped directly from the manufacturing site to the customer. However, no reliable data is available.

3.4 Cut-off criteria
The effect associated with the neglected mass shares is less than 5 % of the effect categories per module. The minimum limit of 1 % total mass and the use of renewable and non-renewable primary energy is not exceeded.

3.5 Background data
The LCA software *LCA for Experts* 10.7 was used to model the life cycle. The entire manufacturing process, as well as energy consumption, were modelled on the basis of manufacturer-specific data.

However, generic background datasets were used for the upstream and downstream processes. The majority of the background datasets used were taken from the content version 2023.2 of the *Sphera Managed LCA Content* database. *Ecoinvent* Version 3.9.1 datasets were only used when suitable datasets were not available.

3.6 Data quality
The data for the examined products was captured on the basis of evaluations of internal production and environmental data, the collection of LCA relevant data within the supply chain, as well as the evaluation of relevant data for the energy supply. The collected data were checked for plausibility and consistency. Good representativity can be assumed.

3.7 Period under review
Life cycle assessment data were collected for a 12-month period in the years 2022 and 2023.

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: Global

3.9 Allocation
For the production of the ceramic, supplier-data was gathered for a 12-month period and then allocated to the products under consideration by weight. This applies to the material inputs and outputs as well as energy demands.
The composition of the products under consideration was modelled based on BOMs. Therefore, no further allocation was necessary.

Allocation of co-production processes is not relevant.

Recycled materials enter the product system without any loads in the modules A1-A3 and therefore do not generate any benefits in module D.

Loads and benefits beyond the system boundary resulting from production waste in module A1-A3 are cut-off.

Loads and benefits beyond the system boundary resulting from the treatment of packaging materials in module A5 and the product in the C-modules are assigned to module D.

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 background database used is *LCA for Experts* content version 2023.2.

4. LCA: Scenarios and additional technical information

Characteristic product properties of biogenic carbon

Information on describing the biogenic carbon content at factory gate
Note: 1 kg of biogenic carbon is equivalent to 44/12 kg of CO_2.

Name	Value	Unit
Biogenic carbon content in product		kg C
Biogenic carbon content in accompanying packaging	0.718	kg C

Transport to the building site (A4)

Name	Value	Unit
Transport distance (truck)	1915	km
Capacity utilisation (including empty runs) (truck)	55	%
Transport distance (ship)	914	km

Installation into the building (A5)

Name	Value	Unit
Silicone	0.052	kg
Output substances following waste treatment on site (packaging materials)	1.744	kg

Maintenance (B2)

Name	Value	Unit
Information on maintenance (weekly cleaning with soapy water)		-
Maintenance cycle	1043	Number/RSL
Water consumption	0.522	m^3
Other resources (soap)	7.827	kg
Information on maintenance (replacement of silicone)		
Maintenance cycle	1	Number/RSL
Other resources (silicone)	0.052	kg

Reference service life

Name	Value	Unit
Life Span according to the manufacturer	20	a

End of life (C1-C4)

Name	Value	Unit
Collected as mixed construction waste	24.858	kg
Recycling	0.037	kg
Landfilling	24.821	kg

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

Name	Value	Unit

5. LCA: Results

The LCA results of the module B2 are declared for the service life of 20 years.

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = 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	X	X	X	X	X	X	X	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 piece toilet

Parameter	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq	4E+01	5.44E+00	3.04E+00	0	2.48E+01	0	0	0	0	0	0	2.47E-01	3.68E-01	3.74E-01	-2.88E-02
GWP-fossil	kg CO_2 eq	4.25E+01	5.39E+00	4.1E-01	0	1.87E+01	0	0	0	0	0	0	2.45E-01	3.67E-01	3.72E-01	-2.88E-02
GWP-biogenic	kg CO_2 eq	-2.63E +00	0	2.63E+00	0	0	0	0	0	0	0	0	0	0	0	0
GWP-luluc	kg CO_2 eq	4.49E-02	4.79E-02	7.25E-04	0	6.04E+00	0	0	0	0	0	0	2.26E-03	1.2E-03	1.16E-03	-1.88E-06
ODP	kg CFC11 eq	4.23E-07	6.89E-13	2.05E-12	0	1.09E-06	0	0	0	0	0	0	3.17E-14	4.46E-12	9.56E-13	-2.26E-13
AP	mol H^+ eq	1.86E-01	4.22E-02	1.37E-03	0	6.77E-02	0	0	0	0	0	0	1.05E-03	1.2E-03	2.65E-03	-3.6E-05
EP-freshwater	kg P eq	1.06E-03	1.9E-05	8.59E-07	0	5.9E-04	0	0	0	0	0	0	8.91E-07	1.36E-06	1.98E-06	-4.67E-08
EP-marine	kg N eq	5.48E-02	2.05E-02	3.48E-04	0	1.54E-02	0	0	0	0	0	0	4.91E-04	4.56E-04	6.85E-04	-1.05E-05
EP-terrestrial	mol N eq	5.88E-01	2.27E-01	3.79E-03	0	1.84E-01	0	0	0	0	0	0	5.49E-03	4.98E-03	7.54E-03	-1.13E-04
POCP	kg NMVOC eq	1.45E-01	4.1E-02	1.08E-03	0	6.14E-02	0	0	0	0	0	0	9.49E-04	1.02E-03	2.07E-03	-2.94E-05
ADPE	kg Sb eq	4.55E-05	3.45E-07	7E-06	0	2.81E-05	0	0	0	0	0	0	1.62E-08	4.56E-08	1.73E-08	-2.07E-09
ADPF	MJ	6.67E+02	7.34E+01	6.88E+00	0	4.6E+02	0	0	0	0	0	0	3.32E+00	6.79E+00	5.04E+00	-5.32E-01
WDP	m^3 world eq deprived	3.72E+00	6.29E-02	1.26E-01	0	6.75E+00	0	0	0	0	0	0	2.95E-03	5.51E-02	4.07E-02	-2.74E-03

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 piece toilet

Parameter	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	4.87E+01	5.14E+00	3.2E+01	0	9.71E+01	0	0	0	0	0	0	2.42E-01	3.15E+00	8.15E-01	-1.54E-01
PERM	MJ	2.88E+01	0	-2.88E +01	0	0	0	0	0	0	0	0	0	0	0	0
PERT	MJ	7.75E+01	5.14E+00	3.23E+00	0	9.71E+01	0	0	0	0	0	0	2.42E-01	3.15E+00	8.15E-01	-1.54E-01
PENRE	MJ	6.66E+02	7.37E+01	5.85E+00	0	4.6E+02	0	0	0	0	0	0	3.33E+00	6.79E+00	5.05E+00	-5.32E-01
PENRM	MJ	2.32E+00	0	1.03E+00	0	0	0	0	0	0	0	0	0	0	0	0
PENRT	MJ	6.68E+02	7.37E+01	6.88E+00	0	4.6E+02	0	0	0	0	0	0	3.33E+00	6.79E+00	5.05E+00	-5.32E-01
SM	kg	1.52E+00	0	0	0	0	0	0	0	0	0	0	0	0	0	1.92E-01
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FW	m^3	1.09E-01	5.63E-03	4.37E-03	0	1.59E-01	0	0	0	0	0	0	2.65E-04	2.58E-03	1.25E-03	-1.25E-04

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 piece toilet

Parameter	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	kg	2.81E-05	2.28E-10	2.15E-10	0	8.53E-03	0	0	0	0	0	0	1.03E-11	-3.91E-10	1.16E-10	-2.85E-11
NHWD	kg	7.26E+00	1.1E-02	8.35E-02	0	8.13E-01	0	0	0	0	0	0	5.08E-04	3.97E-03	2.48E+01	-2.63E-04
RWD	kg	1.89E-03	1.36E-04	3.53E-04	0	4.48E-03	0	0	0	0	0	0	6.24E-06	8.08E-04	5.76E-05	-4.1E-05
CRU	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MFR	kg	0	0	1.74E+00	0	0	0	0	0	0	0	0	0	3.73E-02	0	0
MER	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EEE	MJ	0	0	1.02E-03	0	1.35E-01	0	0	0	0	0	0	0	0	0	0
EET	MJ	0	0	1.81E-03	0	2.46E-01	0	0	0	0	0	0	0	0	0	0

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 piece toilet

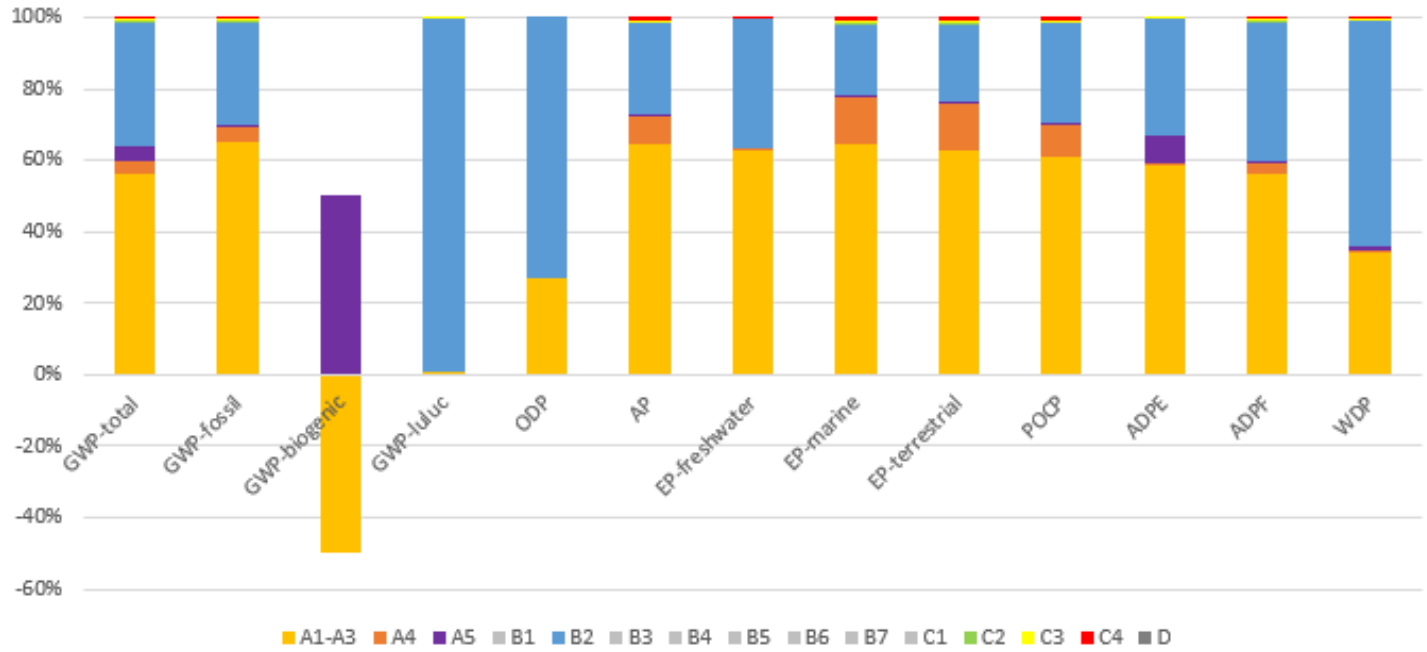
Parameter	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PM	Disease incidence	2.47E-06	2.61E-07	1.33E-08	0	3.33E-06	0	0	0	0	0	0	5.95E-09	6.55E-09	3.26E-08	-3.06E-10
IR	kBq U235 eq	4.5E-01	2.02E-02	5.76E-02	0	2.2E+00	0	0	0	0	0	0	9.3E-04	1.34E-01	6.69E-03	-6.82E-03
ETP-fw	CTUe	1.24E+02	5.25E+01	2.1E+00	0	1.72E+02	0	0	0	0	0	0	2.38E+00	2.64E+00	2.76E+00	-7.4E-02
HTP-c	CTUh	8.46E-09	1.06E-09	1.92E-09	0	2.39E-08	0	0	0	0	0	0	4.83E-11	9.95E-11	4.2E-10	-5.89E-12
HTP-nc	CTUh	2.76E-07	4.68E-08	2.19E-07	0	5.48E-07	0	0	0	0	0	0	2.15E-09	2.3E-09	4.42E-08	-1.45E-10
SQP	SQP	1.72E+02	2.94E+01	1.25E+01	0	3.3E+02	0	0	0	0	0	0	1.39E+00	2.71E+00	1.21E+00	-1.02E-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 or radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, 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 as there is limited experience with the indicator.

6. LCA: Interpretation



The figure above shows the dominance analysis over the considered modules. It can be seen here that the production phase (modules A1-A3) as well as the maintenance (module B2) dominate the LCA results over the life cycle. GWP-biogenic is negative in modules A1-A3 due to biogenic carbon stored in the packaging (cardboard and paper). The biogenic carbon balance is offset with the treatment of the packaging in module A5.
The datasets that have relatively high contributions to many included indicators are the dataset used for the soap in for maintenance (module B2), as well as the energy inputs (gas and electricity) for the production of the ceramic.

Variability
Module B2 is the same for all products. The results in the other modules are mainly dependend on the weight of the products and the production location.

The weight of the products (incl. packaging) varies between 24 and 28.1 kg (ceramic mass between 22.2 and 26.3 kg). In general, heavier products have higher potential environmental

impacts during production (A1-A3) and end-of-life (C-modules) since more materials and energies are required.

Keeping product weight constant there still is variability which is due to different production conditions of the two sites and associated energy mixes.

7. Requisite evidence

8. References

Standards

EN 13501-1
EN 13501-1:2019-05, Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests

EN 14688
EN 14688:2018-12, Sanitary appliances - Wash basins - Functional requirements and test methods

EN 15804
EN 15804:2012+A2:2019 + AC:2021, Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products.

ISO 9001
ISO 9001:2015-11, Quality management systems - Requirements

ISO 14025
ISO 14025:2006-07, Environmental labels and declarations - Type III environmental declarations - Principles and procedures

Further references

AVV
Waste Catalogue Ordinance (Abfallverzeichnis-Verordnung - AVV) of 10 December 2001 (Federal Law Gazette I p. 3379), last amended by Article 2 of the Ordinance of 24 July 2002 (Federal Law Gazette 2833)

CPR
Construction Products Regulation

Candidate list
Candidate List of substances of very high concern for Authorisation, published in accordance with Article 59(10) of the REACH Regulation. Helsinki: European Chemicals Agency

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Managed LCA Content
Managed LCA Content. Content Version 2023.2. Leinfeld-Echterdingen: Sphera Solutions GmbH.

PCR part A
Product Category Rules for Building-Related Products and Services. Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Project Report, Version 1.3. Berlin: Institut Bauen und Umwelt e.V. (ed.), 2021.

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PCR Guidance-Texts for Building-Related Products and Services. Part B: Requirements on the EPDs for Sanitary Ceramics, Version 4. Berlin: Institut Bauen und Umwelt e.V. (publisher.), 19.10.2023.

Publisher

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

+49 (0)30 3087748- 0
info@ibu-epd.com
www.ibu-epd.com

Programme holder

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

+49 (0)30 3087748- 0
info@ibu-epd.com
www.ibu-epd.com

Author of the Life Cycle Assessment

brands & values GmbH
Hollerallee 14A
28209 Bremen
Germany

+49 421 70 90 84 33
info@brandsandvalues.com
www.brandsandvalues.com

Owner of the Declaration

Hansgrohe Group
Auestr. 5-9
77761 Schiltach
Germany

+49 7836 51-0
info@hansgrohe-group.com
www.hansgrohe-group.com