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ENVIRONMENTAL PRODUCT DECLARATION

In accordance with
ISO 14025:2006 and
EN 15804:2012+A2:2019/AC:2021 for:

Duroplast Toilet Seats (Urea)

from

Hamberger Sanitary GmbH

HAMBERGER®
SANITARY



GENERAL INFORMATION

Programme information

Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
E-mail:	info@environdec.com

Accountabilities for PCR, LCA and independent, third-party verification

Product Category Rules (PCR)

- CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
- Product Category Rules (PCR): PCR 2019:14 Construction products (EN 15804:A2) (version 1.11)
- PCR review was conducted by: The Technical Committee of the International EPD® System. A full list of members available on www.environdec.com. The review panel may be contacted via info@environdec.com.

Life Cycle Assessment (LCA)

Name and contact information of LCA practitioner: brands & values GmbH. info@brandsandvalues.com

Third-party verification

Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:

EPD verification by individual verifier

Third-party verifier: Doc. Ing. Jan Weinzettel, weinzettel@seznam.cz

Approved by: The International EPD® System

Procedure for follow-up of data during EPD validity involves third party verifier: No

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HAMBERGER
SANITARY

COMPANY INFORMATION

Owner of the EPD:

Hamberger Sanitary GmbH

Contact:

Hamberger Sanitary GmbH
 Sebastian-Tiefenthaler-Straße 2
 83101 Rohrdorf
 E-Mail: info-sanitary@hamberger.de

Description of the organisation:

Hamberger Sanitary GmbH in Rohrdorf near Rosenheim is the largest WC seat manufacturer in Europe. Hamberger has been manufacturing toilet seats since 1912. The development of own designs including sophisticated hinge techniques plus worldwide logistics form the basis of the success. Founded in 1866, the company is now managed by the fifth generation of the Hamberger family, Dr. Peter Hamberger. Today, Hamberger Sanitary is the preferred partner for high-quality and innovative WC seat solutions in the sanitary industry. The product portfolio includes more than 300 toilet seat models, countless hinges and a sophisticated modular principle with numerous fastening options.

In addition to designs and colours, Hamberger quality toilet seats also differ in terms of material and make: thermoset or thermoplastic, with the patented SoftClose® soft-close mechanism or TakeOff® technology, classically elegant, purist or playful and, of course, in exactly the colour shade that suits

the respective ambience. These products are manufactured in state-of-the-art production facilities in Rohrdorf, in Sevlievo (Bulgaria) and also in Kunshan (China). All production facilities comply with the DIN EN ISO 9001 standard. The great know-how, the technological leadership, many patents and renowned design awards are the basis and result of a successful company development.

Sustainability and climate protection are firmly anchored in the corporate strategy. The focus of Hamberger Sanitary's environmental management system is the continuous further development of environmental performance in terms of ecologically sustainable and environmentally friendly production. The long-standing ISO 14001 certification shows that Hamberger has already achieved great success in this area. With the help of an advanced energy management system, Hamberger permanently reduce its own energy consumption and at the same time increase the energy efficiency according to ISO standard 50001.

Hamberger Sanitary GmbH in Rohrdorf is already a climate-neutral company. Climate neutrality means that a company's carbon footprint is calculated according to internationally recognised standards and offset by supporting certified climate protection projects. Also the CO₂ footprint for the production in Bulgaria was analysed and Hamberger Sanitary is striving for climate neutrality there as well.



PRODUCT INFORMATION

Product name:

Duroplast Toilet Seats (Urea)

Product identification:

Toilet seat set made of thermoset material (urea)

Product description:

Toilet seat set consisting of a seat ring, a cover and a fixing hinge for stable attachment to a toilet ceramic. Optionally equipped with SoftClose and TakeOff function.

UN CPC code:

3693 - Baths, wash-basins, lavatory pans and covers, flushing cisterns and similar sanitary ware, of plastics

LCA information

Type of EPD:

Average EPD; the average was weighed by sales volume in 2022.

Declared unit:

1 piece average Duroplast Toilet Seat (2.03 kg)

Reference service life:

Urea WC seats have an average lifespan of 7-10 years

Time representativeness:

Production data was collected for the year 2022.

Database(s) and LCA software used:

LCA for Experts (Version 10.7) and Sphera LCA content (Content Version 2023.1)

Description of system boundaries:

Cradle to gate with options, modules C1–C4, module D and with optional modules (A1–A3 + C + D an additional module A5).

LCA scenarios:

In module A5, the waste treatment of the packaging materials is modelled. Cardboard is recycled and polyethylene foil is incinerated.

For waste treatment in module C3, incineration is modelled for plastic components and recycling for metal components.

Loads and benefits resulting from recycling and incineration in modules A5 and C3 are assigned to module D.

For transports to waste treatment, a distance of 100 km is assumed.

Cut-off criteria:

Silicone oil was cut-off (0.2% of mass of product). It is assumed that the cut-off criterion on mass inputs and primary energy at the unit process level (1%) and at the information module level (5%) are met.

Allocations:

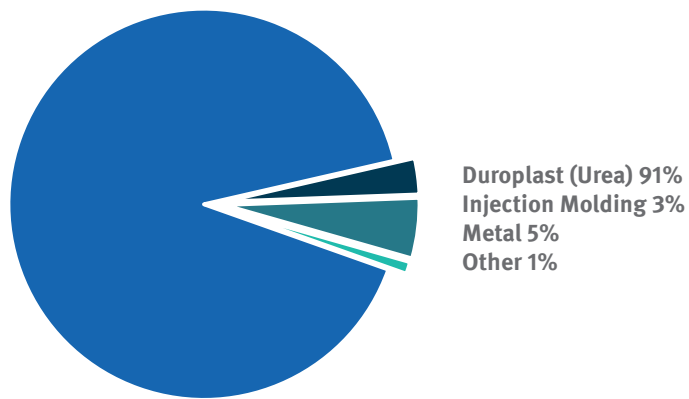
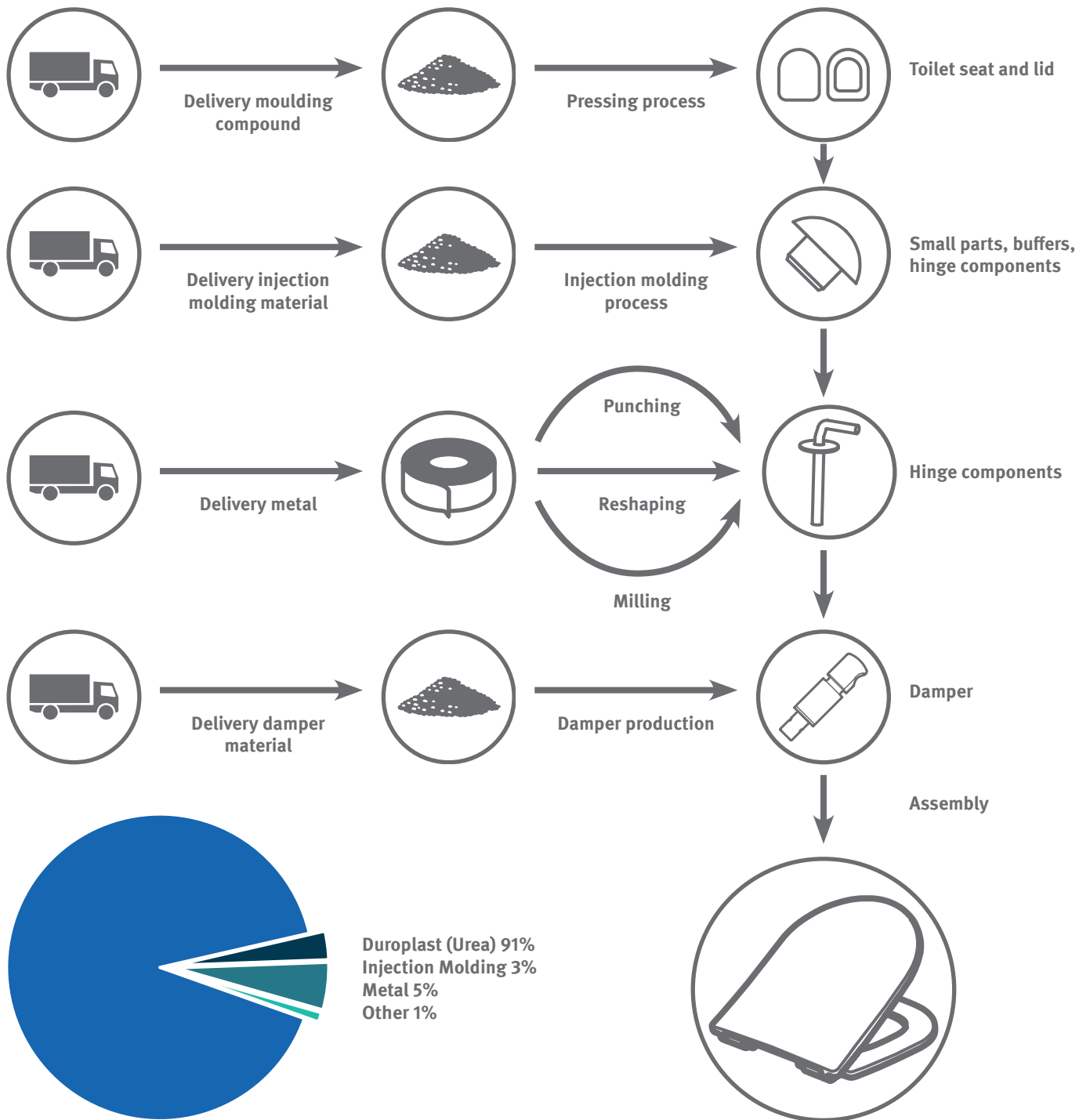
Energy was allocated between Duroplast and Thermoplast toilet seats based on the number of seats produced at each site.

Assumptions:

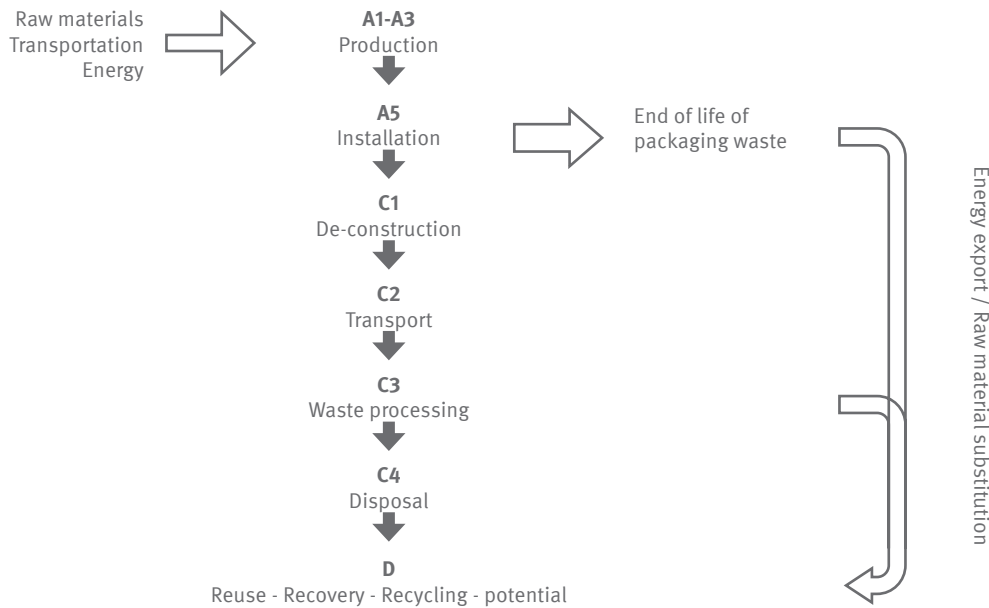
Shares of secondary material input for steel components was used from the LCA datasets. A steel hinge was modelled as a worst-case approach.



DIAGRAM OF THE PRODUCTION PROCESS



System diagram:



Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	ND	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	DE, BG, CN	DE, BG, CN	DE, BG, CN		EU								EU	EU	EU	EU	EU
Specific data used	>90%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	-17% to +38% for GWP-GHG indicator					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	-19% to +38% for GWP-GHG indicator compared to declared average					-	-	-	-	-	-	-	-	-	-	-	-

Variability in the LCIA results is mainly due to the different weights of the products. In general, the lighter the product, the lower the LCIA results. The weight of the unpackaged product varies between 1.4 and 3.5 kg.

The following electricity inputs were modelled:

- Germany: Green electricity (3 g CO₂ eq/kWh)
- Bulgaria: Residual electricity mix (441 g CO₂ eq/kWh)
- China: Electricity mix (811 g CO₂ eq/kWh)

CONTENT INFORMATION

Product components	Weight, kg / piece	Post-consumer material, weight-%	Biogenic carbon, kg / declared unit
Duroplast (urea resin, 30% cellulose)	1.828	0%	0.228
Injection Molding (polyethylene, ethylene vinyl acetate, polypropylene, polyamide, polyethylene, pigment)	0.057	0%	0
Metal (stainless steel, steel)	0.106	58%	0
Other	0.038	0%	0
TOTAL	2.03	3%	0.228
Packaging materials	Weight, kg	Weight-% (versus the product)	Biogenic carbon, kg / declared unit
Polyethylene foil	0.017	0.8%	-
Cardboard box	0.272	13.4%	0.112
TOTAL	0.29	14.2%	0.112

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂.

Dangerous substances from the candidate list of SVHC for Authorisation	EC No.	CAS No.	Weight-% per functional or declared unit
Molding compound			None
Stainless steel			None
Other plastics (dampers, buffers)			None
Silicone oil			None

RESULTS OF THE ENVIRONMENTAL PERFORMANCE INDICATORS

Mandatory impact category indicators according to EN 15804

Results per functional or declared unit								
Indicator	Unit	A1-A3	A5	C1	C2	C3	C4	D
GWP- total	kg CO ₂ eq.	3.48E+00	4.67E-01	0.00E+00	1.89E-02	5.22E+00	0.00E+00	-1.48E+00
GWP-fossil	kg CO ₂ eq.	4.72E+00	5.61E-02	0.00E+00	1.87E-02	4.38E+00	0.00E+00	-1.48E+00
GWP-biogenic	kg CO ₂ eq.	-1.25E+00	4.11E-01	0.00E+00	0.00E+00	8.37E-01	0.00E+00	0.00E+00
GWP-luluc	kg CO ₂ eq.	3.65E-03	2.63E-05	0.00E+00	1.70E-04	7.28E-06	0.00E+00	-9.14E-05
ODP	kg CFC 11 eq.	4.06E-11	2.89E-15	0.00E+00	2.40E-15	3.00E-13	0.00E+00	-1.08E-11
AP	mol H ⁺ eq.	1.91E-02	1.74E-05	0.00E+00	7.29E-05	4.70E-04	0.00E+00	-1.92E-03
EP-freshwater	kg P eq.	3.25E-05	1.10E-08	0.00E+00	6.73E-08	7.63E-08	0.00E+00	-2.24E-06
EP-marine	kg N eq.	5.14E-03	6.81E-06	0.00E+00	3.39E-05	1.42E-04	0.00E+00	-5.38E-04
EP-terrestrial	mol N eq.	5.55E-02	8.86E-05	0.00E+00	3.80E-04	2.29E-03	0.00E+00	-5.69E-03
POCP	kg NMVOC eq.	7.06E-03	1.43E-05	0.00E+00	3.79E-05	3.74E-04	0.00E+00	-1.55E-03
ADP-minerals& metals*	kg Sb eq.	1.43E-05	0.00E+00	6.61E-05	3.91E-04	0.00E+00	-1.55E-03	-1.09E-07
ADP-fossil*	MJ	1.06E+02	4.49E-02	0.00E+00	2.51E-01	7.50E-01	0.00E+00	-2.62E+01
WDP*	m ³	1.60E+00	4.94E-03	0.00E+00	2.22E-04	3.94E-01	0.00E+00	-1.49E-01
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption							

* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.



Results per functional or declared unit

Indicator	Unit	A1-A3	A5	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	4.73E+00	5.61E-02	0.00E+00	1.87E-02	3.34E+00	0.00E+00	1.49E+00

To calculate the results for module A1-A3 for a toilet seat with another weight, the following formula can be applied:

Average Duroplast toilet seat GWP-GHG emissions in kg CO₂e = 2.20 + Product weight (without packaging) in kg * 1.25

Resource use indicators

Results per functional or declared unit

Indicator	Unit	A1-A3	A5	C1	C2	C3	C4	D
PERE	MJ	3.79E+01	4.57E+00	0.00E+00	1.82E-02	9.42E+00	0.00E+00	-7.31E+00
PERM	MJ	1.38E+01	-4.57E+00	0.00E+00	0.00E+00	-9.23E+00	0.00E+00	0.00E+00
PERT	MJ	5.17E+01	4.42E-03	0.00E+00	1.82E-02	1.92E-01	0.00E+00	-7.31E+00
PENRE	MJ	8.12E+01	7.91E-01	0.00E+00	2.52E-01	2.49E+01	0.00E+00	-2.62E+01
PENRM	MJ	2.49E+01	-7.46E-01	0.00E+00	0.00E+00	-2.41E+01	0.00E+00	0.00E+00
PENRT	MJ	1.06E+02	4.51E-02	0.00E+00	2.52E-01	7.50E-01	0.00E+00	-2.62E+01
SM	kg	3.22E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m ³	3.32E-02	1.18E-04	0.00E+00	2.00E-05	9.26E-03	0.00E+00	-6.37E-03

Acronyms 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

¹ This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO₂ is set to zero.

Waste indicators

Results per functional or declared unit								
Indicator	Unit	A1-A3	A5	C1	C2	C3	C4	D
Hazardous waste disposed	kg	8.86E-08	2.62E-13	0.00E+00	7.79E-13	1.83E-11	0.00E+00	-1.35E-09
Non-hazardous waste disposed	kg	1.37E-01	2.17E-04	0.00E+00	3.84E-05	3.06E-02	0.00E+00	1.01E-03
Radioactive waste disposed	kg	4.84E-03	4.53E-07	0.00E+00	4.71E-07	4.48E-05	0.00E+00	-1.95E-03

Output flow indicators

Results per functional or declared unit								
Indicator	Unit	A1-A3	A5	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	0.00E+00	2.72E-01	0.00E+00	0.00E+00	1.06E-01	0.00E+00	0.00E+00
Materials for energy recovery	kg	0.00E+00	1.70E-02	0.00E+00	0.00E+00	1.92E+00	0.00E+00	0.00E+00
Exported energy, electricity	MJ	0.00E+00	1.14E-01	0.00E+00	0.00E+00	6.39E+00	0.00E+00	6.50E+00
Exported energy, thermal	MJ	0.00E+00	2.02E-01	0.00E+00	0.00E+00	1.15E+01	0.00E+00	1.17E+01

Additional impact categories and indicators

Results per functional or declared unit								
Indicator	Unit	A1-A3	A5	C1	C2	C3	C4	D
Incidence of diseases due to particulate matter (PM) emissions	Incidence of disease	ND	ND	ND	ND	ND	ND	ND
Effect from human exposure to U235 (IR)	kBq U235-eq.	ND	ND	ND	ND	ND	ND	ND
Ecosystem Toxicity Comparison Unit (ETP-fw)	CTUe	ND	ND	ND	ND	ND	ND	ND
Toxicity comparison unit for humans (carcinogenic) (HTP-c)	CTUh	ND	ND	ND	ND	ND	ND	ND
Toxicity comparison unit for humans (non-carcinogenic) (HTP-nc)	CTUh	ND	ND	ND	ND	ND	ND	ND
Soil Quality Index (SQP)	dimensionless	ND	ND	ND	ND	ND	ND	ND

Additional environmental information

WC seats from Hamberger are made from high-quality and environmentally friendly materials with care and precision. If you follow a few simple cleaning instructions, you will enjoy this quality product for a long time. The closed, non-porous surface provides the best conditions for optimum hygiene. Do not use any abrasive, chlorine- or acid-based cleaning agents, as these can lead to discolouration, paint peeling or flash rust on the hinges. Neutral soap or mild and natural household detergents are best for thorough cleaning.

References

EN 15804:2012+A2:2019 + AC:2021: Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products

General Programme Instructions of the International EPD® System. Version 3.01.

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

PCR 2019:14 Product category rules (PCR): Construction Products PCR 2019:14 version 1.11.

