Environmental Product Declaration

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

Fittings and ball valves

EPD of multiple products, based on the average results of the product group of fittings and ball valves

from

Vatette

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	EPD-IES-0017898
Publication date:	2025-05-27
Valid until:	2030-05-27

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

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): Construction Products 2019:14, Version 1.3.2 and EN 15804:2012+A2:2019 Sustainability of Construction Works
PCR review was conducted by: The Technical Committee on the International EPD ® System. Contact via www.environdec.com info@environdec.com
Life Cycle Assessment (LCA)
LCA accountability: Alexander Kyriakidis, AFRY, www.afry.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: Katrin Molina-Besch. Miljögiraff AB Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

Company information

Owner of the EPD:
Villeroy & Boch Gustavsberg AB
Odelbergs väg 11
134 40 Gustavsberg
Tel: +46 8-570 391 00

Contact:
Mattias Virsgård

Description of the organisation:
Vatette is owned by Villeroy & Boch Gustavsberg, which head office is situated on Värmdö, just outside Stockholm, Sweden, and we have production facilities in Gustavsberg and Vårgårda, Sweden. In addition to our production facilities in Sweden, we also have sales offices around the Nordic countries and in the Baltics. The company is a wholly owned subsidiary of the German Villeroy & Boch AG Group and thus belongs to one of the largest manufacturers of bathroom furnishing solutions in Europe.

Product-related or management system-related certifications:
SS-EN ISO 9001:2015 – Quality Management System
SS-EN ISO 14001:2015 – Environmental Management System
SS-EN ISO 45001:2018 – Occupational Health and Safety Management Systems
SS-EN ISO 50001:2018 – Energy Management System
EMAS, Eco Management and Audit Scheme – register, Site Vårgårda

Name and location of production site(s):
Villeroy & Boch Gustavsberg AB, Vårgårda, Sweden

Product information

Product name:
Vatette fittings

Product identification: All Vatette's fittings as presented in table under "Other environmental performance indicators "

Product description:
Vatette Clamp ring fittings consists of screw part, clamping ring and nut for copper pipes, stainless and galvanized steel pipes and PEX pipes in the dimension range Dy6-54. All products with Vatette end can be completed with connection sets for different pipe types, e.g. Vatette Plast and Vatette PE that fit Vatette Wall tiles etc. Some fittings exist in a chromed variant and unchromed

The results are presented for an average product. The average product is calculated as an arithmetic mean by assuming an uniform distribution between all included products.

UN CPC code:
41516 - Tubes, pipes and tube or pipe fittings, of copper

Geographical scope:
Northern Europe and the Baltic region

LCA information

Functional unit / declared unit:
1kg

Reference service life:
No RSL is declared. This EPD is based on a cradle-to-gate assessment

Time representativeness:
The information underlying this EPD is taken from the reference year 2023, taking into account inputs and outputs for the whole calendar year.

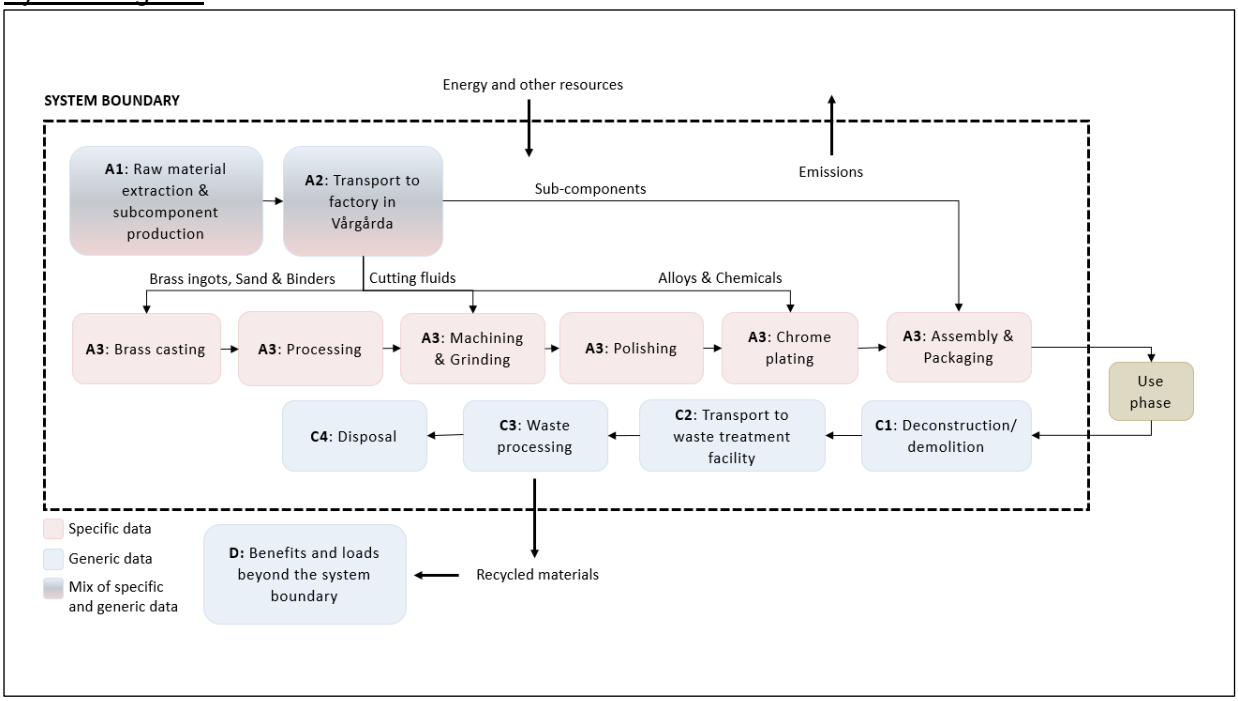
Database(s) and LCA software used:
Ecoinvent 3.10, Industry Data 2.0, ELCD and SimaPro 9.6.0.1

Description of system boundaries:
Cradle to gate with modules C1–C4 and module D (A1–A3 + C + D)

Allocation:
The "polluter pays principle" has been used to allocate recycled materials in accordance with the standards used. The recycling of materials does not imply benefits for the system, and the effects of using recycled materials do not have a negative impact on the results, but rather an environmental gain. The allocation procedure applied is based on the cut-off approach, where the environmental burdens associated with recycling processes are attributed to the previous product system, while the recycled material enters the system burden-free.

According to data provided by the supplier, the product system includes 64% post-industrial recycled content and 13% post-consumer recycled content. No co-product allocation is applied.

System diagram:



More information:

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	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	GLO	GLO	SE										EUR	EUR	EUR	EUR	
Specific data used	36% of the total GWP-GHG impact stems from specific data					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	+8%					-	-	-	-	-	-	-	-	-	-	-	-

A1: Raw Material
This stage includes raw material extraction and production of bought components. The total input of recycled brass and zinc is 85%. To account for this, the amount of brass and zinc input has been reduced by 25% for 70% of the recycled material, based on supplier communications, and 40% for 30% of the recycled material, based on national recycling profiles where a supplier-specific number could not be found. These values reflect the post-consumer share of recycled material, whereas no action was taken to specifically represent the post-industrial share – it was conservatively assumed to cause the same impact as virgin material extraction. This gives a total input reduction of 25.1%.

A2: Transport
This stage includes transportation of raw materials to production sites and of components to final site of assembly.

A3: Manufacturing
This stage includes resource use in the manufacturing facility in Vårgårda such as use of energy. It also includes treatment of waste generated from the manufacturing processes. The manufacturing includes casting, chrome plating, assembling, and packing. Data from the full year of 2023 has been used in the calculations.

The climate impact of the electricity mix is 13.4 gCO2-eq/kWh.

C1: Deconstruction
No impacts are assumed to be associated with the deconstruction phase.

C2: Waste Transport
Includes the transportation of the discarded product to a waste treatment facility. 100 km transportation is assumed.

C3: Waste Processing
This stage includes sorting of waste and waste incineration with energy recovery. Incineration is assumed for plastics, 95% of the brass is assumed to be recycled, other metals are assumed to have a recycling rate of 90%

C4: Waste disposal
This stage includes waste disposal processes, such as landfill.

D: Benefits and loads outside the system boundary
This stage includes benefits and burdens associated with recovery/recycling that affects future life cycles. For this product it includes benefits from the recycling of brass and metals, as well as energy recovery from waste incineration

Content information

Product components	Weight, g	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Brass	993	35%	
EPDM	1.1		
PES	0.6		
PA6	4.2		
Stainless steel	0.7		
TOTAL	1000		
Packaging materials	**Weight, g**	**Weight-% (versus the product)**	**Weight biogenic carbon, kg C/kg**
Cardboard	20.7	0.2%	0.011
Plastic bag	4.19	0.4%	
TOTAL			

The weighted average content is calculated as an arithmetic mean by assuming a uniform distribution between all included products.

Dangerous substances from the candidate list of SVHC for Authorisation	EC No.	CAS No.	Weight-% per functional or declared unit
Lead	231-100-4	7439-92-1	0.05 - <0.8*

* Lead free products contain maximum 0.1% lead while products with conventional brass contain <0.8% lead.

Results of the environmental performance indicators

Mandatory impact category indicators according to EN 15804

Results per functional or declared unit							
Indicator	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	9.61E+00	0.00E+00	1.90E-02	1.48E-02	1.15E-03	-4.15E-01
GWP-biogenic	kg CO_2 eq.	9.35E-02	0.00E+00	1.32E-05	2.64E-05	9.19E-07	-2.11E-03
GWP-luluc	kg CO_2 eq.	3.16E-02	0.00E+00	6.31E-06	2.30E-06	5.02E-07	-8.56E-04
GWP-total	kg CO_2 eq.	9.74E+00	0.00E+00	1.90E-02	1.49E-02	1.15E-03	-4.18E-01
ODP	kg CFC 11 eq.	1.15E-07	0.00E+00	3.78E-10	2.01E-11	2.43E-11	-3.97E-09
AP	mol H^+ eq.	6.24E-01	0.00E+00	3.96E-05	8.29E-06	6.63E-06	-2.91E-02
EP-freshwater	kg P eq.	4.96E-02	0.00E+00	1.29E-06	7.31E-07	1.28E-07	-2.32E-03
EP-marine	kg N eq.	3.34E-02	0.00E+00	9.51E-06	2.48E-06	2.93E-06	-1.54E-03
EP-terrestrial	mol N eq.	4.53E-01	0.00E+00	1.03E-04	2.53E-05	2.80E-05	-2.11E-02
POCP	kg NMVOC eq.	1.29E-01	0.00E+00	6.58E-05	7.06E-06	9.53E-06	-5.93E-03
ADP-minerals&metals*	kg Sb eq.	8.59E-03	0.00E+00	6.18E-08	1.10E-08	3.20E-09	-4.04E-04
ADP-fossil*	MJ	1.02E+02	0.00E+00	2.22E-02	1.29E-02	2.34E-03	-2.95E+00
WDP*	m^3	1.14E+01	0.00E+00	1.11E-03	6.68E-04	5.11E-04	-4.86E-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.*

Additional mandatory and voluntary impact category indicators

Results per functional or declared unit							
Indicator	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[1]	kg CO_2 eq.	9.65E+00	0.00E+00	1.90E-02	1.48E-02	1.15E-03	-4.16E-01

Resource use indicators

Results per functional or declared unit							
Indicator	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	1.14E+01	0.00E+00	4.59E-03	4.73E-03	3.59E-04	-1.49E+00
PERM	MJ	3.50E-01	0.00E+00	0.00E+00	-3.50E-01	0.00E+00	0.00E+00
PERT	MJ	1.18E+01	0.00E+00	4.59E-03	-3.45E-01	3.59E-04	-1.49E+00
PENRE	MJ	4.86E+01	0.00E+00	2.32E-02	1.33E-02	2.45E-03	-3.08E+00
PENRM	MJ	1.93E-01	0.00E+00	0.00E+00	-1.93E-01	0.00E+00	0.00E+00
PENRT	MJ	4.88E+01	0.00E+00	2.32E-02	-1.79E-01	2.45E-03	-3.08E+00
SM	kg	2.49E-01	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
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	6.14E-02	0.00E+00	3.95E-05	5.30E-06	3.58E-05	-1.56E-02
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 re-sources; 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 CO_2 is set to zero.

Waste indicators

Results per functional or declared unit							
Indicator	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-hazardous waste disposed	kg	9.00E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Radioactive waste disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Output flow indicators

Results per functional or declared unit							
Indicator	**Unit**	**A1-A3**	**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
Material for recycling	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Other environmental performance indicators

Indicator	Variation (A-C)
Climate change	8%
Climate change - Fossil	8%
Climate change - Biogenic	39%
Climate change - Land use and LU change	46%
Ozone depletion	115%
Acidification	6%
Eutrophication, freshwater	6%
Eutrophication, marine	5%
Eutrophication, terrestrial	5%
Photochemical ozone formation	5%
Resource use, minerals and metals	6%
Resource use, fossils	39%
Water use	13%
Particulate matter	6%
Ionising radiation	73%
Ecotoxicity, freshwater	6%
Human toxicity, cancer	6%
Human toxicity, non-cancer	6%
Land use	6%
Non renewable	38%
Renewable	20%
Fresh water	6%

Additional environmental information

With over 50 years of experience and a complete product range, System Vatette is a long-term supplier of tap water systems with a strong focus on the environment and sustainability. The obvious choice for HVAC-installers. By using common components, the number of articles is reduced, and tap water systems can easily be updated over time, contributing to a more resource-efficient and environmentally friendly installation.

All products are approved according to Säker Vatten and Rise, which underlines our commitment to the highest quality and safety.

Quality and environmental awareness are central to the entire organization, from material selection to production. Every employee is proud and committed, aware of their crucial role in creating sustainable and environmentally friendly tap water system solutions.

References

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www.environdec.com