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-20220322-IBB1-EN
Issue date	03.04.2023
Valid to	02.04.2028

Single lever mixer

Ideal Standard International

Institut Bauen und Umwelt e.V.

ECO PLATFORM EPD VERIFIED

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1. General Information

Ideal Standard International

Programme holder

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

Declaration number

EPD-IDE-20220322-IBB1-EN

This declaration is based on the product category rules:

Fittings and showers, 08.03.2023
(PCR checked and approved by the SVR)

Issue date

03.04.2023

Valid to

02.04.2028

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

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

Single lever mixer

Owner of the declaration

Ideal Standard International NV
Da Vincilaan 2
1935 Zaventem
Belgium

Declared product / declared unit

1 kg of Single lever mixer

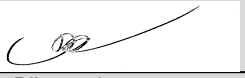
Scope:

The EPD contains the results for 1 kg of a single lever mixer produced by Ideal Standard. The EPD is representative for all single lever mixer produced by Ideal Standard in the factories located in Vidima (Bulgaria) and Wittlich (Germany).
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 bezeichnet*.

Verification

The standard EN 15804 serves as the core PCR
Independent verification of the declaration and data according to ISO 14025:2011
☐ internally ☒ externally



Vito D'Incognito,
(Independent verifier)

Ideal Standard

2. Product

2.1 Product description/Product definition

Single lever mixers. A single-hole mechanical mixer with a fixed or swivel spout includes the aerator, cap, cartridge, fixation set, flexhose, fixation screws, handle, manifold, lift-rod, pop-up waste. The range of mixer taps covers several models and two commercial brands: Ideal Standard and Porcher. 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

A solution used in private and public bathrooms as a plumbing fixture used to mix hot and cold water.

2.3 Technical Data

Constructional data

The tests carried out on single lever mixers included in this EPD are the following:
- EN 248, Sanitary fittings - General specification for Ni-Cr electrolytic coating.
- EN 817, Sanitary fittings - Mechanical mixing valves (PN10) - General technical specifications.

Name	Value	Unit
Maximum load temperature permanent operation	65	°C
Maximum load temperature temporary operation	90	°C
Flow rate (indications for pressure range of 1-3 bar)	0.6 - 1.2	m^3/h
Sound emissions	20	dB/A

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: pallet, PE plastic bag, coverage carton and are accompanied with an instruction and guarantee sheet.

The products can come in very different shapes and dimensions. An overview of all Single lever mixers can be found on Ideal Standard's website and filter on 'Single lever': https://www.idealstandard.co.uk/products/catalog/taps-and-mixers/

2.5 Base materials/Ancillary materials

The main components of the product are: aerator, body, cap, cartridge, flexhose, fixation screws, fixation set, handle, lift rod, manifold and pop-up waste.
The material composition of the product:

- 80-95% Brass
- 0-15% Zinc dye cast
- 5-15% Plastic

A variability study on differences in material composition is described in the LCA background report, and shows that the variance is acceptable. As a result the composition used in this EPD is representative for the full range of Single lever mixers produced by Ideal Standard in Europe.

This product does contain substances listed in the candidate list (date: 26.10.2022) exceeding 0.1 percentage by mass: 7439-92-1 (Pb)

This product does not contain other carcinogenic, mutagenic, reprotoxic (CMR) substances in categories 1A or 1B which are not on the candidate list, exceeding 0.1 percentage by mass,

Biocide products were not added to this construction product and it has not been treated with biocide products as defined by the (EU) Ordinance on Biocide Products No. 528/2012.

2.6 Manufacture

Production brass components:
During the brass production Ideal Standard remelts internal scrap with some purchased metals (eg. Al, Cu ...) to adjust for the recipe. Besides, Ideal Standard also purchases brass rods and tubes from their suppliers. The brass ingots from remelted scrap and the purchased brass rods and tubes are cutted, shaved and/or turned to produce the different brass components. Finally the brass components are plated with nickel and chrome. Also note that Ideal Standard sometimes purchases completely finalized brass components if the demand is higher than the produced quantity.

Production plastic components:
Some plastic components are produced at Ideal Standard. Plastic granulates are injection moulded into the correct shape. Afterwards they are plated with nickel and chrome.

Assembly
The final stage in the production process is the assembly of the different brass components, plastic components and purchased components (i.e screws, cartridges etc …), and the packaging.

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

Usually the fitting is installed using an installation kit provided by Ideal Standard (i.e. EasyKit), but it can also be installed without.

2.9 Packaging

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

2.10 Condition of use

The product will not change in material composition over the reference service life.

2.11 Environment and health during use

Under normal conditions of use, the products do 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

Reference service life not relevant, as module B has not been declared.
Description of the influences on the ageing of the product when applied in accordance with the rules of technology.

2.13 Extraordinary effects

Fire

Not subjected to fire classification

Water

No risks are expected to occur in terms of the environment 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

Recycling of the brass components is possible, and considered in this LCA study using the average European end-of-life scenario described in Annexe C of the Product Environmental Footprint Pilots (PEFCR) 6.3 guidance, version March 2018.

Energy recovery of the incineration of the plastic components is also considered in this study.

2.15 Disposal

According to the average European end-of-life scenario described in Annexe C of the Product Environmental Footprint Pilots (PEFCR) 6.3 guidance (version March 2018), the following disposal scenarios have been considered: 5% of the brass and other metals parts are landfilled, 45% of the plastic parts are incinerated and 55% of the plastic parts are landfilled.

2.16 Further information

Additional information on Single lever mixers produced by Ideal Standard can be found at: https://www.idealstandard.co.uk/products/catalog/taps-and-mixers/

3. LCA: Calculation rules

3.1 Declared Unit

Declared unit

Name	Value	Unit
Declared unit	1	kg

This EPD reports the environmental impact of 1 kg of the weighted average single lever mixer produced at the Bulgarian factory plant.

The average has been selected as follows:

- The weighted average is calculated based on the weight and sold quantities of the product in 2021.
- The product that has a weight closest to the average weight is selected.
- The data for the selected single lever mixer is converted to 1 kg of that product

The environmental impact of a specific single lever can be calculated by multiplying the results of 1 kg of the average single lever mixer with the respective weight of the product.

In the background report a variability study has been performed to show the representativeness of the average single lever mixer for the full product range in Europe. This is further described in paragraph 3.6.

3.2 System boundary

Cradle-to-gate with options, including module D

3.3 Estimates and assumptions

The results are for 1 kg of representative single lever mixer. A variability study shows the variance between both factories, respectively in Bulgaria and Germany, and that the variance in the material composition is acceptable.

Besides, some other assumptions have been made:

- 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 the consumption rate and importance in the production process.
- No data was available on the specific packaging per raw material/component. Therefore the packaging of the raw materials have been calculated based on the packaging waste reported in the factory.

3.4 Cut-off criteria

The following processes are excluded because data was not available:

- Transport of some raw materials
- Transport of packaging raw materials
- 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.

The following processes are considered below cut-off:

- For production waste only most relevant production waste streams have been considered (waste of ancillary materials and smaller waste flows have been excluded).
- Only 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, accidental pollution caused by human mistakes, or environmental effects caused by commuter traffic. Heating or 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, and Industry 2.0.
In the background report a variability study has been performed to show the representativeness of the average single lever mixer for the full product range in Europe.

First, the variance with the German plant is investigated and shows a variance of less than 4% over modules A1-C4, and less than 20 % if only module A3 is taken into account.

Secondly the variance in composition of the different single lever mixers is investigated. The study shows that the variance is less than 25 %, and is mainly influenced by a different brass

content.

3.7 Period under review

The data collected by Ideal Standard is based on data from the production year 2021 for Single Lever mixer.

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 the bill of material. No allocation was necessary.
- 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).
- No data was available on the specific packaging per raw material/component (module A1). Therefore the packaging of the raw materials have been calculated based on the packaging waste reported in the factory, and allocated to 1 kg of product based on the total production volume.

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. Ecoinvent 3.8 and Industry 2.0

4. LCA: Scenarios and additional technical information

Characteristic product properties
Information on biogenic carbon

The product does not contain biogenic carbon, but its accompanying packaging contains 0.222 kg C per kg of 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	0.222	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)	Default value Ecoinvent	%
Gross density of products transported	Not calculated	kg/m^3
Capacity utilisation volume factor	Default value Ecoinvent	-

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	0.708	kg
Packaging waste (PE) PEF EOL scenario Europe for PE packaging: 32 % incineration; 29 % recycling; 39 % landfill	0.0073	kg

End of life (C1-C4)

According to the European average PEF scenario, 95% of the brass, steel and zamak are recycled and 5% is landfilled. The European average PEF scenario for plastics describes 45% incineration and 55% landfill.

Name	Value	Unit
Collected as mixed construction waste	1	kg
Reuse	-	kg
Recycling Brass, steel and zamak	0.89	kg
Energy recovery Plastics	0.029	kg
Landfilling Brass steel and zamak	0.045	kg
Landfilling Plastics	0.036	kg

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

Module D contains the benefits and loads of recycling Brass, steel and zamak, and the benefits of energy recovery during the incineration of the plastics.

Note that according to EN15804+A2 the recycled content amount of the brass (i.e. 54 %) has been taken into account in module D by subtracting this from the amount of scrap that will be recycled at the end-of-life.

Name	Value	Unit
Loads recycling of brass: Impact of the production process of brass excluding the production of raw materials	0.77-0.43=0.34	kg
Loads recycling of steel: Impact of the electric arc furnace production excluding the prodution of the raw materials	0.01	kg
Loads recycling of zamak: mpact of the electric arc furnace production excluding the prodution of the raw materials	0.11	kg
Benefits recycling of brass: Avoided production of brass using 100 % primary materials	0.77-0.43=0.34	kg
Benefits recycling of steel: Avoided production of steel using 100 % primary materials	0.01	kg
Benefits recycling of zamak: Avoided production of Zinc using 100 % primary materials	0.11	kg
Benefits energy recovery during incineration of plastics: 20 % avoided production of Heat from natural gas	0.18	MJ
Benefits energy recovery during incineration of plastics: 10 % avoided production of European average grid mix	0.09	MJ

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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 single lever mixer

Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq	3.2E+00	6.85E-02	5.84E+00	4.89E-01	7.82E-01	0	3.13E-02	1.35E-03	7.39E-02	-3.16E+00
GWP-fossil	kg CO_2 eq	3.28E+00	6.85E-02	6.46E+00	4.88E-01	2.21E-02	0	3.13E-02	1.33E-03	7.39E-02	-2.5E+00
GWP-biogenic	kg CO_2 eq	-8.39E-02	2.45E-05	-6.29E-01	1.75E-04	7.6E-01	0	1.12E-05	7.22E-06	3.91E-06	-6.52E-01
GWP-luluc	kg CO_2 eq	7.48E-03	2.74E-05	3.9E-03	1.95E-04	8.67E-06	0	1.25E-05	3.08E-06	2.06E-06	-6.1E-03
ODP	kg CFC11 eq	2.03E-07	1.59E-08	5.29E-07	1.13E-07	3.93E-09	0	7.25E-09	6.91E-11	6.92E-10	-1.5E-07
AP	mol H^+ eq	2.11E-01	1.97E-04	3.53E-02	1.39E-03	7.49E-05	0	8.89E-05	7.64E-06	2.41E-05	-1.83E-01
EP-freshwater	kg P eq	6.59E-04	4.88E-07	9.34E-04	3.48E-06	2.21E-07	0	2.23E-07	1.4E-07	6.56E-08	-5.54E-04
EP-marine	kg N eq	8.96E-03	3.92E-05	5.12E-03	2.75E-04	2.17E-05	0	1.77E-05	1.02E-06	1.38E-05	-7.56E-03
EP-terrestrial	mol N eq	1.23E-01	4.37E-04	5.22E-02	3.07E-03	2.41E-04	0	1.97E-04	1.17E-05	1.04E-04	-1.05E-01
POCP	kg NMVOC eq	3.7E-02	1.67E-04	1.54E-02	1.18E-03	7.42E-05	0	7.56E-05	3.27E-06	2.8E-05	-3.16E-02
ADPE	kg Sb eq	3.25E-03	1.85E-07	9.99E-06	1.32E-06	4.96E-08	0	8.47E-08	7.56E-09	9.39E-09	-2.9E-03
ADPF	MJ	4.37E+01	1.04E+00	1.17E+02	7.4E+00	2.57E-01	0	4.74E-01	2.79E-02	3.24E-02	-3.22E+01
WDP	m^3 world eq deprived	4.26E+00	3.16E-03	2.82E+00	2.25E-02	1.61E-03	0	1.44E-03	3.27E-04	1.2E-03	-3.79E+00

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 single lever mixer

Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ	1.01E+01	1.46E-02	3.53E+00	1.04E-01	9.18E-01	0	6.67E-03	5.49E-03	2.39E-03	0
PERM	MJ	1.01E+00	0	7.18E+00	0	-6.85E+00	0	0	0	0	6.67E+00
PERT	MJ	1.11E+01	1.46E-02	1.07E+01	1.04E-01	-5.93E+00	0	6.67E-03	5.49E-03	2.39E-03	6.67E+00
PENRE	MJ	5.19E+01	1.04E+00	1.4E+02	7.44E+00	3.35E-01	0	4.77E-01	3.32E-02	9.41E-01	0
PENRM	MJ	2.08E+00	0	2E-01	0	-1.34E-01	0	0	0	-9.05E-01	8.33E-02
PENRT	MJ	5.4E+01	1.04E+00	1.4E+02	7.44E+00	2.01E-01	0	4.77E-01	3.32E-02	3.62E-02	8.33E-02
SM	kg	4.07E-01	0	0	0	0	0	0	0	0	9.06E-01
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^3	1.02E-01	7.63E-05	5.17E-02	5.44E-04	8.01E-05	0	3.49E-05	2.08E-05	5.07E-05	-8.18E-02

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 single lever mixer

Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
HWD	kg	2.2E-03	2.71E-06	9.58E-03	1.93E-05	6.27E-07	0	1.24E-06	2.29E-08	7.48E-08	-1.78E-03
NHWD	kg	1.29E+00	5.43E-02	1.17E+00	3.88E-01	8.35E-02	0	2.48E-02	1.09E-04	8.33E-02	-9.56E-01
RWD	kg	1.66E-04	7.01E-06	6.13E-04	5E-05	1.7E-06	0	3.2E-06	2.03E-07	1.72E-07	-1.22E-04
CRU	kg	0	0	0	0	0	0	0	0	0	0
MFR	kg	0	0	5.05E-02	0	3.75E-01	0	0	8.88E-01	0	-1.31E+00
MER	kg	0	0	0	0	0	0	0	0	0	0

EEE	MJ	0	0	6.51E-04	0	9.81E-02	0	0	0	9.05E-02	-1.89E-01
EET	MJ	0	0	1.3E-03	0	1.96E-01	0	0	0	1.81E-01	-3.78E-01

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 single lever mixer

Parameter	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
PM	Disease incidence	4.36E-07	5.5E-09	1.95E-07	3.92E-08	1.48E-09	0	2.51E-09	2.54E-11	2.39E-10	-3.77E-07
IR	kBq U235 eq	2.29E-01	4.51E-03	6.91E-01	3.21E-02	1.17E-03	0	2.06E-03	2.45E-04	1.48E-04	-1.64E-01
ETP-fw	CTUe	1.35E+03	8.14E-01	4.24E+01	5.81E+00	3.3E-01	0	3.72E-01	1.85E-02	2.11E-01	-1.16E+03
HTP-c	CTUh	4.56E-08	2.62E-11	2.03E-09	1.87E-10	2.65E-11	0	1.2E-11	9.32E-13	1.43E-11	-3.54E-08
HTP-nc	CTUh	3.12E-06	8.23E-10	8.76E-08	5.87E-09	3.19E-10	0	3.76E-10	1.82E-11	1.41E-10	-2.79E-06
SQP	SQP	7.81E+01	7.23E-01	5.19E+01	5.16E+00	1.86E-01	0	3.31E-01	1.83E-02	4.15E-02	-1.25E+02

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.

6. LCA: Interpretation

The results show that for the single lever mixer, the raw materials used in the formulation mix have a very significant impact on all impact categories, due to the use of brass. Brass has a dominant impact on 'Resource use – minerals and metals' in particular. Besides the production of the raw materials, also module A3 (mainly energy consumption during the manufacturing) has a significant contribution. For indicators such as ‘Global warming potential’ and ‘Resource use – fossils’ the contribution of module A3 is more than 50 %.

Outside the system’s boundaries, module D shows the benefits from recycling of the brass components and to a lesser extent the energy recovery from incineration of the plastic components. In module D the use of recycled content at the beginning of life has been taken into account in the calculations, as required by EN15804+A2.

7. Requisite evidence

8. References

Standards

EN15804
EN 15804:2012+A2:2019+AC:2021, Sustainability of construction works —
Environmental Product Declarations — Core rules for the product category of
construction products.

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.

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 Fittings and showers

ISO 9001
ISO 9001:2015: Quality management systems — Requirements

ISO 14001
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