

ENVIRONMENTAL PRODUCT DECLARATION

NP Ultra door handles

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

Products included in the EPD:

items 03992, 03991, 03895, 0399301, 03995, 05044, 05245, 05246

An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see www.environdec.com

EPD of multiple products based on a representative product

EPD Owner
GIESSE S.p.A.

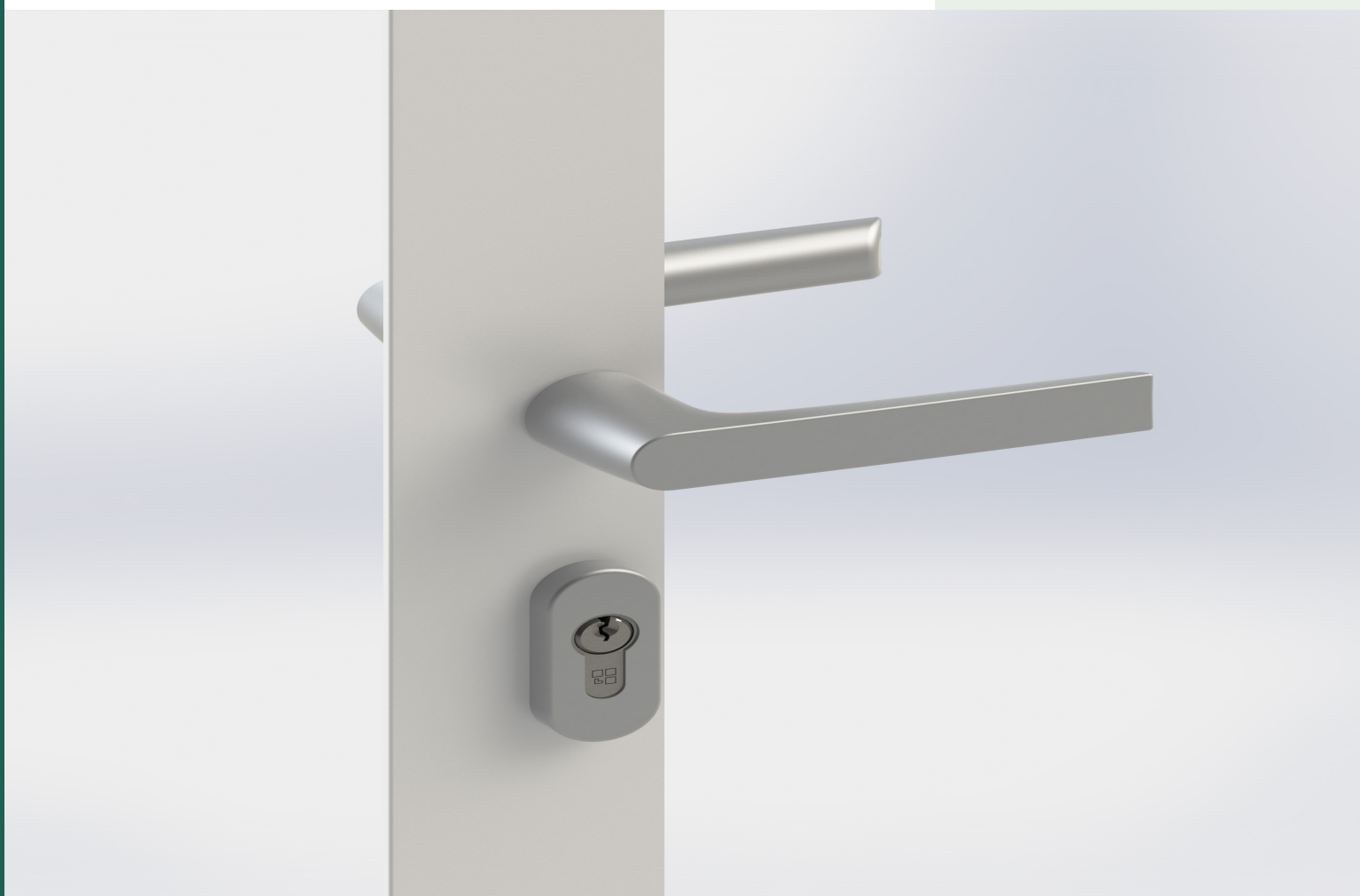
Programme
International EPD System
www.environdec.com

Programme operator
EPD International AB

Registration number
EPD-IES-0025084:003

Version date
2025-11-03

Validity date
2030-11-02



GENERAL INFORMATION

Programme information

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

Product category rules

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)	
Product Category Rules (PCR)	PCR 2019:14 Construction products (EN 15804+A2) (2.0.1)
PCR review was conducted by	The Technical Committee of the International EPD System. See www.environdec.com for a list of members. Review chair: Rob Rouwette (chair), Noa Meron (co-chair). The review panel may be contacted via the Secretariat www.environdec.com/support .
Complementary Product Category Rules (c-PCR)	PCR 2019:14-c-PCR-007 Being updated - Windows and doors (EN 17213) (c-PCR to PCR 2019:14) (1.0.0)
c-PCR review was conducted by	The Technical Committee of the International EPD System

Verification

LCA accountability	Valerio Venturi, valerio.venturi@schlegelgiesse.com, GIESSE S.p.A.
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via	☒ EPD verification through an individual EPD verification ☐ EPD verification through EPD Process Certification* ☐ EPD verification through a fully pre-verified tool
Third-party verifier	Michela Gallo (University of Genoa)
Approved by	International EPD System
Procedure for follow-up of data during EPD validity involves third party verifier	☐ Yes ☒ No
*EPD Process Certification involves an accredited certification body certifying and periodically auditing the EPD process and conducting external and independent verification of EPDs that are regularly published. More information can be found in the General Programme Instructions on www.environdec.com . International EPD System.	

Ownership and limitations on use of EPD

Limitations

EPDs within the same product category but published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit 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 identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterisation factors); and be valid at the time of comparison.

Ownership

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

INFORMATION ABOUT EPD OWNER

EPD Owner	GIESSE S.p.A.
Contact person name	Valerio Venturi
Contact person e-mail	valerio.venturi@quanex.com
Organisation address	Italy Budrio (Bologna) 40054 Via Tubertini 1

Description of the organisation of the EPD Owner

GIESSE S.p.A. founded in 1965, in the province of Bologna, is specialized in the production of manual accessories for aluminum windows and doors. In 2016 it was acquired by Schlegel, a leading British company in the sealing systems sector. Both companies were part of the international division of Tyman PLC, a group listed on the London Stock Exchange, with a commercial network capable of reaching customers in over 100 countries and offering them the highest degree of satisfaction, a wide range of standard components and boasts over 150 patents filed.

In 2024, the entire Tyman group and its brands, including Giesse, were acquired by the American multinational Quanex, forming a new major group in the sector, with a turnover of over 2 billion.

Quanex Building Products Corporation, listed on the NY Stock Exchange, is a manufacturing group that offers building product solutions that include hardware solutions (door/window hardware, screens), extruded solutions (spacers, vinyl profiles for doors and windows, gaskets and sealing systems) and custom solutions (solutions for the wood, mixed and building access industries).



PRODUCT INFORMATION

Product name	items 03992, 03991 , 03895, 0399301, 03995, 05044, 05245, 05246
Product identification	item codes 03992, 03991 , 03895, 0399301, 03995, 05044, 05245, 05246 in all different finishes: painted , trend BE or raw to be painted by customer
Product description	NP ULTRA is an ambidextrous door handle without the traditional fixing base in line with the NP Ultra concept. The entire handle mechanism is pre-assembled inside the handle, fixed to the panel without the aid of grub screws so there is no visible hole. The internal mechanism is equipped with a spring to ensure the correct return of the handle to position over time. The handle is fixed to the profile with a quick coupling/release system (Giesse patented) using the device supplied. The profile can be machined using the specific drilling template, which can be adapted to all profile types. NP Ultra handles are designed to be painted independently without the aid of special equipment. • Reversible, right and left hand • 50° opening angle (both directions) for compatibility with all locks on the market • Compatible with the Giesse perimeter lock, ideal for balcony doors • Available in double handle version • Installation on profiles up to 82 mm with the supplied switchboard • Handle and packaging customizable with customer logo Finishes: • Base Painting (allows the customer to paint the product as if it were a raw product), • Powder coatings • TREND BE finishes
Technical purpose of product	Door handle
Manufacturing or service provision description	chemical treatment , painting, pad printing of the lever handle assembly of lever handle and other components packaging
Material properties	Volumetric mass density: 4957 kg/m ³ Mass per piece: 0.487 kg/piece
Manufacturing site	Budrio Italy Budrio (Bologna) 40054 Via Tubertini 1
UN CPC code	42992. Padlocks and locks, of base metal; clasps and frames with clasps, incorporating locks, of base metal; keys and parts thereof, of base metal; base metal fittings for furniture, doors, saddlery and the like
Geographical scope(s)	Global
Actual or technical lifespan	30 year(s)

PRODUCT IMAGES



CONTENT DECLARATION

Content declaration of multiple products	content declaration refers to the representative product
Hazardous and toxic substances	The product does not contain any substances from the SVHC candidate list in concentrations exceeding 0.1% of its weight.

PRODUCT CONTENT				
Content name	Mass, kg	Post-consumer recycled material, mass-% of product	Biogenic material, mass-% of product	Biogenic material ¹ , kg C/declared unit
Aluminium alloy	0.24			
Zinc alloy	0.15			
Steel and polymers	0.09			
Total	0.48	0	0	0
Note 1	1 kg biogenic carbon is equivalent to 44/12 kg of CO ₂			

PACKAGING MATERIALS			
Material name	Mass, kg	Mass-% (versus the product)	Biogenic material ¹ , kg C/declared unit
Cardboard	0.02	4.1	0.01
Wood	0.02	3.4	
Plastic	0.01	2	
Total	0.05	9.5	0.01
Note 1	1 kg biogenic carbon is equivalent to 44/12 kg of CO ₂		

LCA INFORMATION

EPD based on declared or functional unit	Declared unit
Declared unit and reference flow	Handle Mass: 1 kg
Conversion factor to mass	1
Are infrastructure or capital goods included in any upstream, core or downstream processes?	☐ Yes ☒ No
Data sources used for this EPD	ecoinvent database (general) ecoinvent 3.9.1 database
LCA Software	SimaPro SimaPro 9.5
Additional information about the underlying LCA-based information	SimaPro version 9.5.0.2. Cut-off rules 5% cut -off rule was applied, specifically, regarding maintenance materials and related waste. Exclusions: Transports of the employees Replacement parts for machinery used during maintenance, Allocation procedure: All allocations were made considering either total mass production or the mass of products referred to specific processes (e.g. painting, surface pretreatment, pad printing). This procedure was applied to allocate energy consumption (electrical and thermal), packaging, emissions, auxiliary materials, and waste. Electricity used in the manufacturing process in A3 modelled 100% from renewable source as per certificate of origin.
Version of the EN 15804 reference package	EF Reference Package 3.1
Characterisation methods	EN 15804 + A2. Version EF 3.1 July 2022
Technology description including background system	Reversible door handle without fixing base. The product considered consists mainly of die-cast aluminium and zinc alloy.
Scrap (recycled material) inputs contribution level	Less than 10% of the GWP-GHG results in modules A1-A3 come from scrap inputs

Data quality assessment

Description of data quality assessment and reference years	Data quality is compliant with ISO 14025:2006, and assessed as per EN15941. All primary data were collected for 2024, there is not data with poor quality.
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DATA QUALITY ASSESSMENT					
Process name	Source type	Source	Reference year	Data category	Share of primary data, of GWP-GHG results for A1-A3
Manufacturing of product	Data collection	EPD Owner	2024	Primary data	80%
Thermal energy	Database	Ecoinvent	<5years	Primary data	13%
Total share of primary data, of GWP-GHG results for A1-A3					93%
Note	The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that supports the use of more primary data to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories.				

Comment on the data sources and other information in the table	Data refer to item code # 03992 in raw finish to be painted by customer
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ELECTRICITY USED IN THE MANUFACTURING PROCESS IN A3 (A5 FOR SERVICES)		
Type of electricity mix	Specific electricity mix as generated, or purchased from an electricity supplier, demonstrated by a contractual instrument	
Energy sources	Hydro	0%
	Wind	0%
	Solar	100%
	Biomass	0%
	Geothermal	0%
	Waste	0%
	Nuclear	0%
	Natural gas	0%
	Coal	0%
	Oil	0%
	Peat	0%
	Other	0%

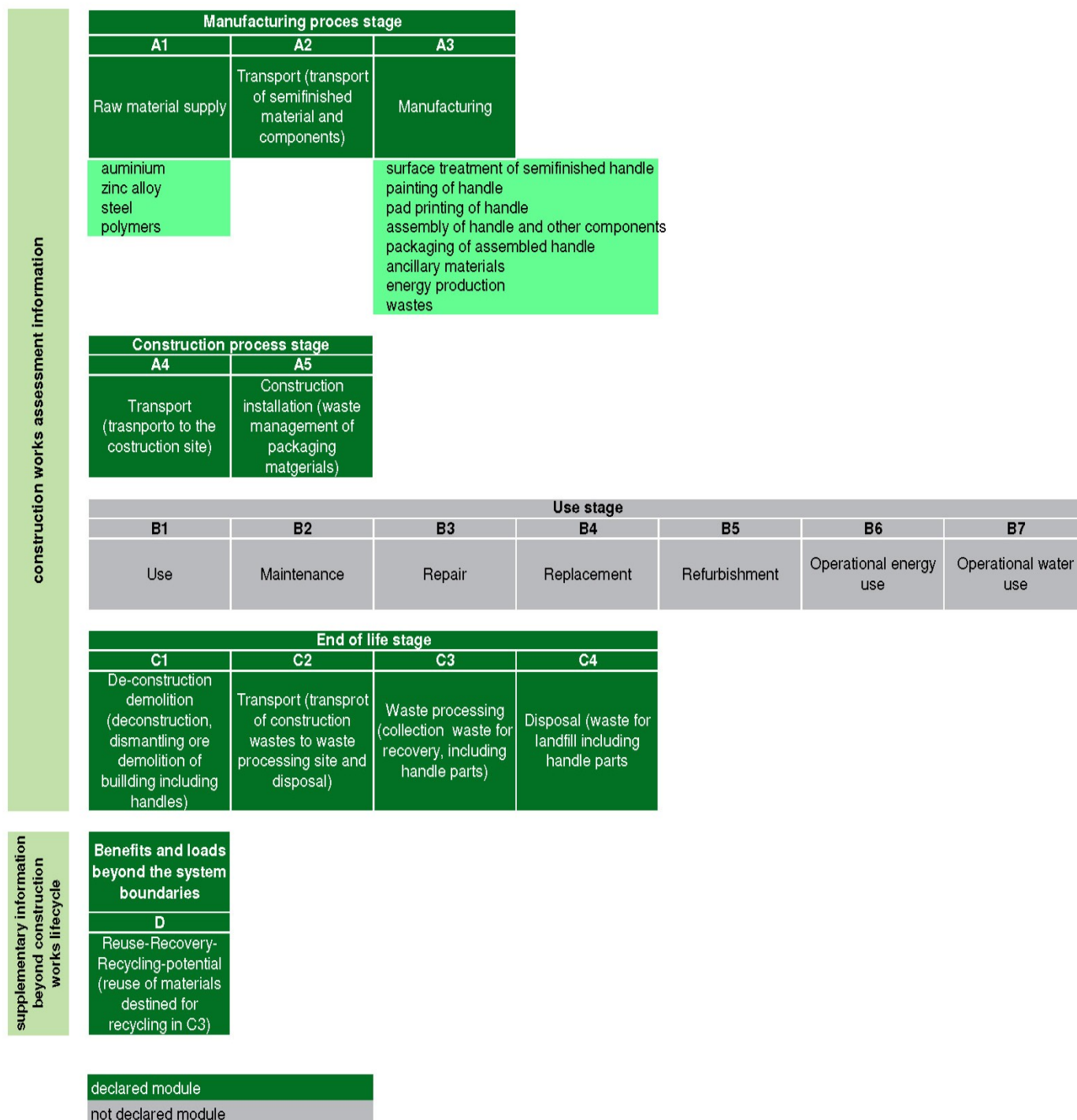
Climate impact (GWP-GHG):	0.08 kg CO ₂ eq./kWh
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SYSTEM BOUNDARY

Description of the System boundary	b) Cradle to gate with options, modules C1-C4, module D and with optional modules (A1-A3 + C + D and additional modules).
Excluded modules	Yes, there is an excluded module, or there are excluded modules
Justification for omission of modules	Modules of use stage excluded as optional

	Product stage			Construction process stage		Use stage							End of life stage				Beyond product life cycle
	Raw material supply	Transport	Manufacturing	Transport to site	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	X	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	Global	Europe	Europe	Europe	Europe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Global	Global	Global	Global	Europe
Share of specific data	93%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation - products	45%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation - sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Disclaimer	The share of specific/primary data and both variations (products and sites) refer to GWP-GHG results only.																

Process flow diagram(s) related images



DEFAULT SCENARIO

Name of the default scenario	Standard
Description of the default scenario	Scenario considers the transport of the handle to the building site and the installation in the door

Module A4: Transport to the building site

Explanatory name of the default scenario in module A4	Transport to building
Description of the default scenario in module A4	Given the variability of product sales and consequently at the construction site in various regions of the world, it was decided to adopt the provisions of EN 17610:2022 adapting the capacity utilization

Module A4 information	Value	Unit
Capacity utilization (including empty returns)	56	%
Distance to the construction site	3500	km

Module A5: Installation in the building

Explanatory name of the default scenario in module A5	Installation
Description of the default scenario in module A5	Since this is a manual process, no energy or fuels is needed for installation, then module analyses the recovery of packaging incurred as waste during product installation. Data sourced from Eurostat Packaging waste by waste management operations, 2022

Module A5 information	Value	Unit
Wood waste to landfill	36	%
Wood waste to energy recovery	30	%
Wood waste to recycle	34	%
Plastic waste to landfill	24	%
Plastic waste to energy recovery	35	%
Plastic waste to recycle	41	%
Cardboard waste to landfill	7	%
Cardboard to energy recovery	10	%
Cardboard to recycle	83	%

Reference service life

Description of the default scenario in reference service life	According to EN 17610:2022
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Reference service life information	Value	Unit
Reference service life	30	year(s)

Module C: End-of-life

Explanatory name of the default scenario in module C	Deinstallation
Description of the default scenario in module C	The demolition phase of the building site includes all deconstruction operations, including the initial dismantling and sorting on site of the handle. In the absence of primary data relating to the waste transport to the treatment plant, default data for modelling module were assumed according to relevant PCR 2019:14 2.0.1. A recycle ratio of 90% of metal parts of handle and 75% of plastic parts of handle are considered. Remaining 10% of metal is landfilled, 20% of plastic is recovered and 5% of plastic is landfilled

Module C information	Value	Unit
Recycle, metal	90	%
Recycle, plastic	75	%
Disposal, metal	10	%
Disposal, plastic	5	%
Recovery, plastic	20	km
Transportation distance to the closest disposal area	80	km
Means of transport	16-32 tonne lorry (EURO 5), 50% load factor	N/A

Module D: Beyond product life cycle

Explanatory name of the default scenario in module D	Benefit
Description of the default scenario in module D	This stage, according to the EN 15804:2012 + A2:2019 standard for the analysis "from cradle to gate, with modules C1-C4 and module D" , considers the benefit due to the reuse/recovery of materials. In this stage, the reuse of materials for recycling in stage C3 was considered.

ADDITIONAL SCENARIO 1

Name of the additional scenario	100% recycling
Description of the additional scenario	Scenario considers 100% of recycling at the end of life. Best-case for EoL scenario.

Module A4: Transport to the building site

Description of the additional scenario in module A4	Transport to building
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Module A5: Installation in the building

Description of the additional scenario in module A5	Installation
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Reference service life

Description of the additional scenario in reference service life	According to EN 17610:2022
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Reference service life information	Value	Unit
Reference service life	30	year(s)

Module C: End-of-life

Description of the additional scenario in module C	The demolition phase of the building site includes all deconstruction operations, including the initial dismantling and sorting on site of the handle. In the absence of primary data relating to the waste transport to the treatment plant, default data for modelling module were assumed according to relevant PCR 2019:14 2.0.1. A recycle ratio of 100% is considered for all parts of handle
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Module C information	Value	Unit
Recycle, metal	100	%
Recycle, plastic	100	%
Transportation distance to the closest disposal area	80	km
Means of transport	16-32 tonne lorry (EURO 5), 50% load factor	N/A

Module D: Beyond product life cycle

Description of the additional scenario in module D	This stage, according to the EN 15804:2012 + A2:2019 standard for the analysis "from cradle to gate, with modules C1-C4 and module D" , considers the benefit due to the reuse/recovery of materials. In this stage, the reuse of materials for recycling in stage C3 was considered.
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ADDITIONAL SCENARIO 2

Name of the additional scenario	100% landfill
Description of the additional scenario	Scenario considers 100% of landfill at the end of life. This represents a worst-case scenario for end-of-life handling. The material is collected and transported to an inert landfill site without any further treatment

Module A4: Transport to the building site

Description of the additional scenario in module A4	Transport to building
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Module A5: Installation in the building

Description of the additional scenario in module A5	Installation
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Reference service life

Description of the additional scenario in reference service life	According to EN 17610:2022
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Reference service life information	Value	Unit
Reference service life	30	year(s)

Module C: End-of-life

Description of the additional scenario in module C	The demolition phase of the building site includes all deconstruction operations, including the initial dismantling and sorting on site of the handle. In the absence of primary data relating to the waste transport to the treatment plant, default data for modelling module were assumed according to relevant PCR 2019:14 2.0.1. A ratio of 100% to landfill is considered for all parts of handle.
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Module C information	Value	Unit
Landfill, metal	100	%
Landfill, plastic	100	%
Transportation distance to the closest disposal area	80	km
Means of transport	16-32 tonne lorry (EURO 5), 50% load factor	N/A

Module D: Beyond product life cycle

Description of the additional scenario in module D	This stage, according to the EN 15804:2012 + A2:2019 standard for the analysis "from cradle to gate, with modules C1-C4 and module D", considers the benefit due to the reuse/recovery of materials. So in this scenario, the reuse of materials for recycling in stage C3 was not considered.
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ENVIRONMENTAL PERFORMANCE

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

Mandatory environmental performance indicators according to EN 15804

Impact category	Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Climate change - total	GWP-total	kg CO ₂ eq.	1.11E+1	7.28E-1	2.29E-2	ND	ND	ND	ND	ND	ND	ND	0.00E+0	1.51E-2	7.35E-3	3.94E-3	-5.44E+0
Climate change - fossil	GWP-fossil	kg CO ₂ eq.	1.24E-1	2.10E-4	6.78E-3	ND	ND	ND	ND	ND	ND	ND	0.00E+0	4.34E-6	5.19E-8	9.59E-6	-2.22E-2
Climate change - biogenic	GWP-biogenic	kg CO ₂ eq.	8.70E-2	3.53E-4	4.04E-7	ND	ND	ND	ND	ND	ND	ND	0.00E+0	7.31E-6	2.10E-8	4.15E-6	-1.47E-1
Climate change - land use and land-use change	GWP-luluc	kg CO ₂ eq.	1.13E+1	7.29E-1	2.96E-2	ND	ND	ND	ND	ND	ND	ND	0.00E+0	1.51E-2	7.35E-3	3.95E-3	-5.61E+0
Ozone depletion	ODP	kg CFC-11 eq.	2.69E-7	1.58E-8	1.84E-11	ND	ND	ND	ND	ND	ND	ND	0.00E+0	3.28E-10	1.88E-12	4.47E-11	-1.72E-7
Acidification	AP	mol H ⁺ eq.	8.13E-2	2.37E-3	7.82E-6	ND	ND	ND	ND	ND	ND	ND	0.00E+0	4.91E-5	9.55E-7	2.47E-5	-3.62E-2
Eutrophication aquatic freshwater	EP-freshwater	kg P eq.	5.87E-4	5.82E-6	1.24E-8	ND	ND	ND	ND	ND	ND	ND	0.00E+0	1.21E-7	9.66E-10	1.26E-7	-3.09E-4
Eutrophication aquatic marine	EP-marine	kg N eq.	1.19E-2	8.07E-4	1.04E-5	ND	ND	ND	ND	ND	ND	ND	0.00E+0	1.67E-5	4.55E-7	6.27E-6	-3.94E-3
Eutrophication terrestrial	EP-terrestrial	mol N eq.	1.22E-1	8.62E-3	3.49E-5	ND	ND	ND	ND	ND	ND	ND	0.00E+0	1.78E-4	4.93E-6	6.85E-5	-4.28E-2
Photochemical ozone formation	POCP	kg NMVOC eq.	4.34E-2	3.55E-3	1.21E-5	ND	ND	ND	ND	ND	ND	ND	0.00E+0	7.34E-5	1.23E-6	2.27E-5	-1.95E-2
Depletion of abiotic resources - minerals and metals	ADP-minerals&metals ¹	kg Sb eq.	6.99E-4	2.34E-6	1.62E-9	ND	ND	ND	ND	ND	ND	ND	0.00E+0	4.84E-8	1.53E-10	7.76E-9	6.94E-5
Depletion of abiotic resources - fossil fuels	ADP-fossil ¹	MJ, net calorific value	1.45E+2	1.03E+1	1.00E-2	ND	ND	ND	ND	ND	ND	ND	0.00E+0	2.14E-1	6.95E-4	5.53E-2	-8.67E+1
Water use	WDP ¹	m ³ world eq. deprived	1.29E+0	4.21E-2	2.49E-4	ND	ND	ND	ND	ND	ND	ND	0.00E+0	8.70E-4	2.05E-6	1.43E-3	3.87E-1
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																
General disclaimer	The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3/A1-A5 for services).																
Disclaimer 1	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 environmental performance indicators

Impact category	Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Climate change - GWP-GHG	GWP-GHG ¹	kg CO ₂ eq.	1.12E+1	7.24E-1	2.99E-2	ND	ND	ND	ND	ND	ND	ND	0.00E+0	1.50E-2	7.34E-3	3.92E-3	-5.56E+0
Acronyms	GWP-GHG = Global warming potential greenhouse gas.																
General disclaimer	The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3/A1-A5 for services).																
Disclaimer 1	The GWP-GHG indicator is termed GWP-IOBC/GHG in the ILCD+EPD+ data format. The 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.																

Additional voluntary environmental performance indicators according to EN 15804

Impact category	Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter emissions	PM	Disease incidence	7.23E-7	5.77E-8	7.90E-11	ND	ND	ND	ND	ND	ND	ND	0.00E+0	1.19E-9	5.01E-12	3.81E-10	-4.29E-7
Ionizing radiation - human health	IRP ¹	kBq U235 eq.	4.26E-1	5.17E-3	7.09E-6	ND	ND	ND	ND	ND	ND	ND	0.00E+0	1.07E-4	3.14E-7	9.28E-5	-5.32E-1
Eco-toxicity - freshwater	ETP-fw ²	CTUe	1.83E+2	5.09E+0	3.18E-2	ND	ND	ND	ND	ND	ND	ND	0.00E+0	1.05E-1	1.42E-3	8.17E-1	-2.82E+0
Human toxicity - cancer effects	HTP-c ²	CTUh	2.95E-8	3.31E-10	1.65E-12	ND	ND	ND	ND	ND	ND	ND	0.00E+0	6.84E-12	2.64E-13	3.48E-12	-1.87E-8
Human toxicity - non-cancer effects	HTP-nc ²	CTUh	5.72E-7	7.27E-9	8.08E-11	ND	ND	ND	ND	ND	ND	ND	0.00E+0	1.50E-10	1.12E-11	4.46E-11	-1.49E-7
Land-use related impacts/soil quality	SQP ²	Dimensionless	8.59E+1	6.14E+0	1.38E-2	ND	ND	ND	ND	ND	ND	ND	0.00E+0	1.27E-1	1.95E-4	6.87E-2	-1.51E+0
Acronyms	PM = Potential incidence of disease due to particulate matter emissions; IRP = Potential human exposure efficiency relative to U235; ETP-fw = Potential comparative toxic unit for ecosystems; HTP-c = Potential comparative toxic unit for humans; HTP-nc = Potential comparative toxic unit for humans; SQP = Potential soil quality index.																
General disclaimer	The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3/A1-A5 for services).																
Disclaimer 1	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	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.																

Resource use indicators according to EN 15804

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ, net calorific value	4.09E+1	1.60E-1	2.77E-4	ND	ND	ND	ND	ND	ND	ND	0.00E+0	2.50E-3	1.09E-5	2.50E-3	-3.76E+1
PERM	MJ, net calorific value	1.98E+0	0.00E+0	0.00E+0	ND	ND	ND	ND	ND	ND	ND	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
PERT	MJ, net calorific value	4.29E+1	1.60E-1	2.77E-4	ND	ND	ND	ND	ND	ND	ND	0.00E+0	2.50E-3	1.09E-5	2.50E-3	-3.76E+1
PENRE	MJ, net calorific value	1.45E+2	1.03E+1	1.00E-2	ND	ND	ND	ND	ND	ND	ND	0.00E+0	2.14E-1	6.95E-4	5.53E-2	-8.67E+1
PENRM	MJ, net calorific value	1.07E+0	0.00E+0	0.00E+0	ND	ND	ND	ND	ND	ND	ND	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
PENRT	MJ, net calorific value	1.46E+2	1.03E+1	1.00E-2	ND	ND	ND	ND	ND	ND	ND	0.00E+0	2.14E-1	6.95E-4	5.53E-2	-8.67E+1
SM	kg	0.00E+0	0.00E+0	0.00E+0	ND	ND	ND	ND	ND	ND	ND	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
RSF	MJ, net calorific value	0.00E+0	0.00E+0	0.00E+0	ND	ND	ND	ND	ND	ND	ND	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
NRSF	MJ, net calorific value	0.00E+0	0.00E+0	0.00E+0	ND	ND	ND	ND	ND	ND	ND	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
FW	m ³	1.34E-1	1.47E-3	8.91E-6	ND	ND	ND	ND	ND	ND	ND	0.00E+0	3.04E-5	4.21E-7	4.14E-5	-2.48E-1
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.															
General disclaimer	The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3/A1-A5 for services).															

Waste indicators according to EN 15804

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	kg	8.02E-3	6.57E-5	6.57E-8	ND	ND	ND	ND	ND	ND	ND	0.00E+0	1.36E-6	9.37E-9	1.84E-7	6.46E-3
NHWD	kg	2.32E+0	5.04E-1	2.21E-2	ND	ND	ND	ND	ND	ND	ND	0.00E+0	1.04E-2	7.15E-5	1.01E-1	-1.71E+0
RWD	kg	3.05E-4	3.35E-6	4.47E-9	ND	ND	ND	ND	ND	ND	ND	0.00E+0	6.94E-8	2.04E-10	5.89E-8	-4.30E-4
Acronyms	HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed.															
General disclaimer	The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3/A1-A5 for services).															

Output flow indicators according to EN 15804

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
CRU	kg	0.00E+0	0.00E+0	0.00E+0	ND	ND	ND	ND	ND	ND	ND	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
MFR	kg	1.82E-1	0.00E+0	5.42E-2	ND	ND	ND	ND	ND	ND	ND	0.00E+0	0.00E+0	8.98E-1	0.00E+0	0.00E+0
MER	kg	1.82E-1	0.00E+0	2.04E-2	ND	ND	ND	ND	ND	ND	ND	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
EEE	MJ, net calorific value	0.00E+0	0.00E+0	0.00E+0	ND	ND	ND	ND	ND	ND	ND	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
EET	MJ, net calorific value	0.00E+0	0.00E+0	0.00E+0	ND	ND	ND	ND	ND	ND	ND	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Acronyms	CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy.															
General disclaimer	The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3/A1-A5 for services).															

Results for additional scenarios for modules A4-C4

Additional scenario	100% recycling
Description of the scenario/method	Scenario considers 100% of recycling at the end of life

Impact category	Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Climate change - total	GWP-total	kg CO2 eq.	1.11E+1	7.28E-1	2.29E-2	ND	ND	ND	ND	ND	ND	ND	0.00E+0	1.51E-2	0.00E+0	0.00E+0	-6.05E+0
Climate change - fossil	GWP-fossi	kg CO2 eq.	1.24E-1	2.10E-4	6.78E-3	ND	ND	ND	ND	ND	ND	ND	0.00E+0	4.34E-6	0.00E+0	0.00E+0	-2.46E-2
Climate change - biogenic	GWP-biogenic	kg CO2 eq.	8.70E-2	3.53E-4	4.04E-7	ND	ND	ND	ND	ND	ND	ND	0.00E+0	7.31E-6	0.00E+0	0.00E+0	-1.63E-1
Climate change - land use and land-use change	GWP -luluc	kg CO2 eq.	1.13E+1	7.29E-1	2.96E-2	ND	ND	ND	ND	ND	ND	ND	0.00E+0	1.51E-2	0.00E+0	0.00E+0	-6.24E+0
Ozone depletion	ODP	kg CFC-11 eq.	2.69E-7	1.58E-8	1.84E-11	ND	ND	ND	ND	ND	ND	ND	0.00E+0	3.28E-10	0.00E+0	0.00E+0	-1.90E-7
Acidification	AP	mol H+ eq.	8.13E-2	2.37E-3	7.82E-6	ND	ND	ND	ND	ND	ND	ND	0.00E+0	4.91E-5	0.00E+0	0.00E+0	-4.02E-2
Eutrophication aquatic freshwater	EP-freshwater	kg P eq.	5.87E-4	5.82E-6	1.24E-8	ND	ND	ND	ND	ND	ND	ND	0.00E+0	1.21E-7	0.00E+0	0.00E+0	-3.43E-4
Eutrophication aquatic marine	EP-marine	kg N eq.	1.19E-2	8.07E-4	1.04E-5	ND	ND	ND	ND	ND	ND	ND	0.00E+0	1.67E-5	0.00E+0	0.00E+0	-4.38E-3
Eutrophication terrestrial	EP-terrestrial	mol N eq.	1.22E-1	8.62E-3	3.49E-5	ND	ND	ND	ND	ND	ND	ND	0.00E+0	1.78E-4	0.00E+0	0.00E+0	-4.76E-2
Photochemical ozone formation	POCP	kg NMVOC eq.	4.34E-2	3.55E-3	1.21E-5	ND	ND	ND	ND	ND	ND	ND	0.00E+0	7.34E-5	0.00E+0	0.00E+0	-2.17E-2
Depletion of abiotic resources - minerals and metals	ADP-minerals& metals	kg Sb eq.	6.99E-4	2.34E-6	1.62E-9	ND	ND	ND	ND	ND	ND	ND	0.00E+0	4.84E-8	0.00E+0	0.00E+0	7.71E-5
Depletion of abiotic resources - fossil fuels	ADP-fossil1	MJ, net calorific value	1.45E+2	1.03E+1	1.00E-2	ND	ND	ND	ND	ND	ND	ND	0.00E+0	2.14E-1	0.00E+0	0.00E+0	-9.70E+1
Water use	WDP	m3 world eq. deprived	1.29E+0	4.21E-2	2.49E-4	ND	ND	ND	ND	ND	ND	ND	0.00E+0	8.70E-4	0.00E+0	0.00E+0	4.16E-1
Climate change - GWP-GHG	GWP-GHG(2)	kg CO2 eq.	1.12E+1	7.24E-1	2.99E-2	ND	ND	ND	ND	ND	ND	ND	0.00E+0	1.50E-2	0.00E+0	0.00E+0	-6.19E+0
Acronyms																	
Disclaimers	Disclaimer 2 - The GWP-GHG indicator is termed GWP-IOBC/GHG in the ILCD+EPD+ data format. The 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.																
General disclaimer	The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3/A1-A5 for services).																

Results for additional scenarios for modules A4-C4

Additional scenario	100% landfill
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Description of the scenario/method	Scenario considers 100% of landfill at the end of life
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Impact category	Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Climate change - total	GWP-total	kg CO2 eq.	1.11E+1	7.28E-1	2.29E-2	ND	ND	ND	ND	ND	ND	ND	0.00E+0	1.51E-2	0.00E+0	4.01E-2	0.00E+0
Climate change - fossil	GWP-fossil	kg CO2 eq.	1.24E-1	2.10E-4	6.78E-3	ND	ND	ND	ND	ND	ND	ND	0.00E+0	7.31E-6	0.00E+0	9.60E-5	0.00E+0
Climate change - biogenic	GWP-biogenic	kg CO2 eq.	8.70E-2	3.53E-4	4.04E-7	ND	ND	ND	ND	ND	ND	ND	0.00E+0	7.31E-6	0.00E+0	4.16E-5	0.00E+0
Climate change - land use and land-use change	GWP-luluc	kg CO2 eq.	1.13E+1	7.29E-1	2.96E-2	ND	ND	ND	ND	ND	ND	ND	0.00E+0	1.51E-2	0.00E+0	4.02E-2	0.00E+0
Ozone depletion	ODP	kg CFC-11 eq.	2.69E-7	1.58E-8	1.84E-11	ND	ND	ND	ND	ND	ND	ND	0.00E+0	3.28E-10	0.00E+0	4.49E-10	0.00E+0
Acidification	AP	mol H+ eq.	8.13E-2	2.37E-3	7.82E-6	ND	ND	ND	ND	ND	ND	ND	0.00E+0	4.91E-5	0.00E+0	2.48E-4	0.00E+0
Eutrophication aquatic freshwater	EP-freshwater	kg P eq.	5.87E-4	5.82E-6	1.24E-8	ND	ND	ND	ND	ND	ND	ND	0.00E+0	1.21E-7	0.00E+0	1.26E-6	0.00E+0
Eutrophication aquatic marine	EP-marine	kg N eq.	1.19E-2	8.07E-4	1.04E-5	ND	ND	ND	ND	ND	ND	ND	0.00E+0	1.67E-5	0.00E+0	6.38E-5	0.00E+0
Eutrophication terrestrial	EP-terrestrial	mol N eq.	1.22E-1	8.62E-3	3.49E-5	ND	ND	ND	ND	ND	ND	ND	0.00E+0	1.78E-4	0.00E+0	6.87E-4	0.00E+0
Photochemical ozone formation	POCP	kg NMVOC eq.	4.34E-2	3.55E-3	1.21E-5	ND	ND	ND	ND	ND	ND	ND	0.00E+0	7.34E-5	0.00E+0	2.28E-4	0.00E+0
Depletion of abiotic resources - minerals and metals	ADPminerals&metals	kg Sb eq.	6.99E-4	2.34E-6	1.62E-9	ND	ND	ND	ND	ND	ND	ND	0.00E+0	4.84E-8	0.00E+0	7.78E-8	0.00E+0
Depletion of abiotic resources - fossil fuels	ADP-fossil	MJ, net calorific value	1.45E+2	1.03E+1	1.00E-2	ND	ND	ND	ND	ND	ND	ND	0.00E+0	2.14E-1	0.00E+0	5.55E-1	0.00E+0
Water use	WDP	m3 world eq. deprived	1.29E+0	4.21E-2	2.49E-4	ND	ND	ND	ND	ND	ND	ND	0.00E+0	8.70E-48	0.00E+0	1.44E-2	0.00E+0
Climate change - GWP-GHG	GWP-GHG(2)	kg CO2 eq.	1.12E+1	7.24E-1	2.99E-2	ND	ND	ND	ND	ND	ND	ND	0.00E+0	1.50E-2	0.00E+0	3.99E-2	0.00E+0
Acronyms																	
Disclaimers	Disclaimer 2 - The GWP-GHG indicator is termed GWP-IOBC/GHG in the ILCD+EPD+ data format. The 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.																
General disclaimer	The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3/A1-A5 for services).																

ADDITIONAL ENVIRONMENTAL INFORMATION

Main materials used to build the accessories are recyclable.

- It is recommended that accessories, packaging, etc. are disposed of accordingly, with local disposal regulations and sent to a recycling unit for recovery and recycling
- Before sent to disposal it's recommended to separate the materials as below:
 - Steel / Stainless Steel: Ferrous metals
 - Aluminium alloy / Zinc alloy: Non-ferrous metals
 - Plastic components (PA, PP, PE, POM, etc): Plastic wastes

The following section shows the variation of each impact indicator compared to the representative product for which the variation is above 10%, results aggregated over all included modules (from A to C)

impact Indicator abbreviation MAX MIN

GWP-fossil 29% -45%

GWP-biogenic 38% -26%

GWP-luluc 23% -77%

GWP-total 29% -45%

ODP 44% -46%

AP 15% -22%

EP-freshwater 21% -12%

EP-marine 25% -21%

EP-terrestrial 16% -17%

POCP 19% -27%

ADPE 134% -14%

ADPF 30% -39%

WDP 69% -148%

GWP-GHG 29% -45%

INFORMATION RELATED TO EPDS OF MULTIPLE PRODUCTS

Justification for why this is representative	Representative product # 03992 NP Ultra handle 005 (base painting) due to its highest annual production volume in the reference year.
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ABBREVIATIONS

Global warming potential - fossil fuels (GWP-fossil)

Global warming potential - biogenic (GWP-biogenic)

Global warming potential - land use and land use change (GWP-luluc)

Global warming potential - total (GWP-total)

Depletion potential of the stratospheric ozone layer (ODP)

Acidification potential, accumulated exceedance (AP)

Eutrophication potential - freshwater (EP-freshwater)

Eutrophication potential - marine (EP-marine)

Eutrophication potential - terrestrial (EP-terrestrial)

Photochemical ozone creation potential (POCP)

Abiotic depletion potential - non-fossil resources (ADPE)

Abiotic depletion potential - fossil resources (ADPF)

Water (user) deprivation potential (WDP)

Global warming potential (GWP-GHG)

REFERENCES

- [1] UNI EN ISO 14040: 2021, Management environmental – Assessment of the life cycle – Principles and frame of reference.
- [2] UNI EN ISO 14044: 2021, Management environmental – Evaluation of the life cycle– Requirements And guidelines .
- [3] UNI EN ISO 14025:2010, Environmental labels and declarations - Type III environmental declarations - Principles and procedures
- [4] UNI EN 15804:2012 + A2:2019, Sustainability from the constructions – Statements environmental Product – Key development rules for product category.
- [5] General Program Instructions of the International EPD® System. Version 5.0
- [6] PCR 2019:14 Construction products (EN 15804+A2) (2.0.1), developed from IVL Swedish Environmental Research Institute, EPD International Secretariat
- [7] c-PCR-020 Building hardware (EN 17610) (version 2024-04-30).
- [8] c-PCR007 Windows and Doors (EN 17213:2020) version 2024-04-30
- [9] EN 17610:2022 Building hardware - Environmental product declarations - Product category rules complementary to EN 15804 for building hardware
- [10] Eurostat Treatment of waste by waste category, hazardousness and waste management operations. Available at https://ec.europa.eu/eurostat/databrowser/product/view/env_wastrt?category=env.env_was.env_wasgt

VERSION HISTORY

original version of the EPD

