Environmental Product Declaration

Of multiple products, based on worst-case results,
In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

Vinyl Flooring (LVT, SPC)

from

Jiangsu Success Wood Products CO., LTD

SPC/WPC/LVT/LAMINATE

Programme:	The International EPD® System, www.environdec.com
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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
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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 (version 1.3.4)* *and c-PCR-004 Resilient, textile and laminate floor covering (EN 16810:2017), version 2024-04-30* *UN CPC code: 36910 Floor coverings of plastics, in rolls or in the form of tiles*
PCR review was conducted by: *The Technical Committee of the International EPD® System. See www.environdec.com for a list of members. Review chair: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat www.environdec.com/contact.*
Life Cycle Assessment (LCA)
LCA accountability: *Lucia Zhang, Intertek* *lucia.zhang@intertek.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: *Rui Wang, IVL Swedish Environmental Research Institute* 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:
Jiangsu Success Wood Products Co., LTD

Contact:
yun@zhongxin.net

Description of the organisation:
Jiangsu Success Wood Products Co., LTD (also known as Zhongxin Pridon) found in 1997. It is located at Changzhou City, Jiangsu Province. With a total area of 120,000 m^2 factory, it has an annual production capacity of 16,800,000 m^2 of resilient flooring. It is a leading modern manufacturing enterprise integrating R&D, production and sales of resilient flooring in China.

Product-related or management system-related certifications:
ISO14001, ISO9001, ISO45001

Name and location of production site(s):
Jiangsu Success Wood Products Co., LTD
NO97 Changhong East Road, Henglin Town, Wujin District, Changzhou City, Jiangsu Province, People's Republic of China

Product information

Product name:
Vinyl Flooring (LVT, SPC)

LVT SPC

Figure 1 Image of the products

Product identification
Resilient Floor Coverings

Product description:
Vinyl Flooring is made primarily from polyvinyl chloride (PVC), calcium carbonate (limestone), additives (such as plasticizers, stabilizers, lubricants, pigments, etc.). It is composed of one clear PVC embossed wear layer with a final UV coating, printing film layer for décor, substrate layer for structural strength and stability, and may include a backing (such as IXPE) to improve acoustic performance and increase comfort underfoot. The product is waterproof, easy to install and maintain.

Vinyl Flooring is a perfect choice for high traffic areas due to its incredible durability and resilience, but also it has an impressive realistic appearance. It provides the perfect balance between aesthetics and performance, as well as the suitability for both commercial and residential areas.

In this EPD, it covers two types of vinyl flooring, LVT (luxury vinyl tile flooring) and SPC (stone plastic composite vinyl flooring). All these two types of floorings have belonged to the vinyl flooring family. They were considered as similar products as they were manufactured by the same manufacturing site with the same major steps in the core processes. In this EPD, the result of each declared environmental performance indicator was based on the worst-case result of the included products, for the included modules from A to C.

Characteristics		LVT	SPC
Product thickness, mm		2.5	7.0
Wear layer thickness, mm		0.55	0.55
Backing layer (IXPE) thickness, mm		None	1.0
Product weight, kg/m^2		4.505	12.315
Product form, tiles or planks	Width, mm	128~450	128~450
	Length, mm	600~2400	600~2400

Products application:
The products are set apart from other types of flooring by its uniquely rigid core layer with super durable and dimensional stability performance, which provide the primary function of flooring for interior applications. The flooring products are widely used in residential and commercial using, including home, hotel, restaurant, hospital, which is more healthy, low VOC, sound reduction and easy maintaining.

UN CPC code:
36910 Floor coverings of plastics, in rolls or in the form of tiles

Geographical scope:
A1-A3 China; A4 From China to EU; A5 EU; B EU; C EU; D EU.

LCA information

Functional unit:
1 m^2 of Vinyl Flooring (LVT, SPC)
The conversion factor is 4.505kg/1m^2 (0.222 m^2/kg) based on the included product of LVT.
The conversion factor is 12.315kg/1m^2 (0.081 m^2/kg) based on the included product of SPC.

The worst-case result of Vinyl Flooring (LVT, SPC) is justified by the following reasons:
1) Based on the minimum amount of recycled and biogenic content of the included products.
Not relevant as all the included products don't contain biogenic content.
2) Based on the minimum amount of recycled and biogenic content of the included products' packaging.
All the included products use the same packaging. The amount of packaging is linear related to the thickness of products. Thus, the thinner LVT which has less packaging, the less biogenic content in its packaging.
3) Based on the highest results of environmental and hazardous substances contained in the products.
The similar products included in the report are two series in PVC flooring, and their raw material composition and properties are different. Therefore, the highest results of environmental and hazard characteristics of SVHC were reflected and shown in the report.

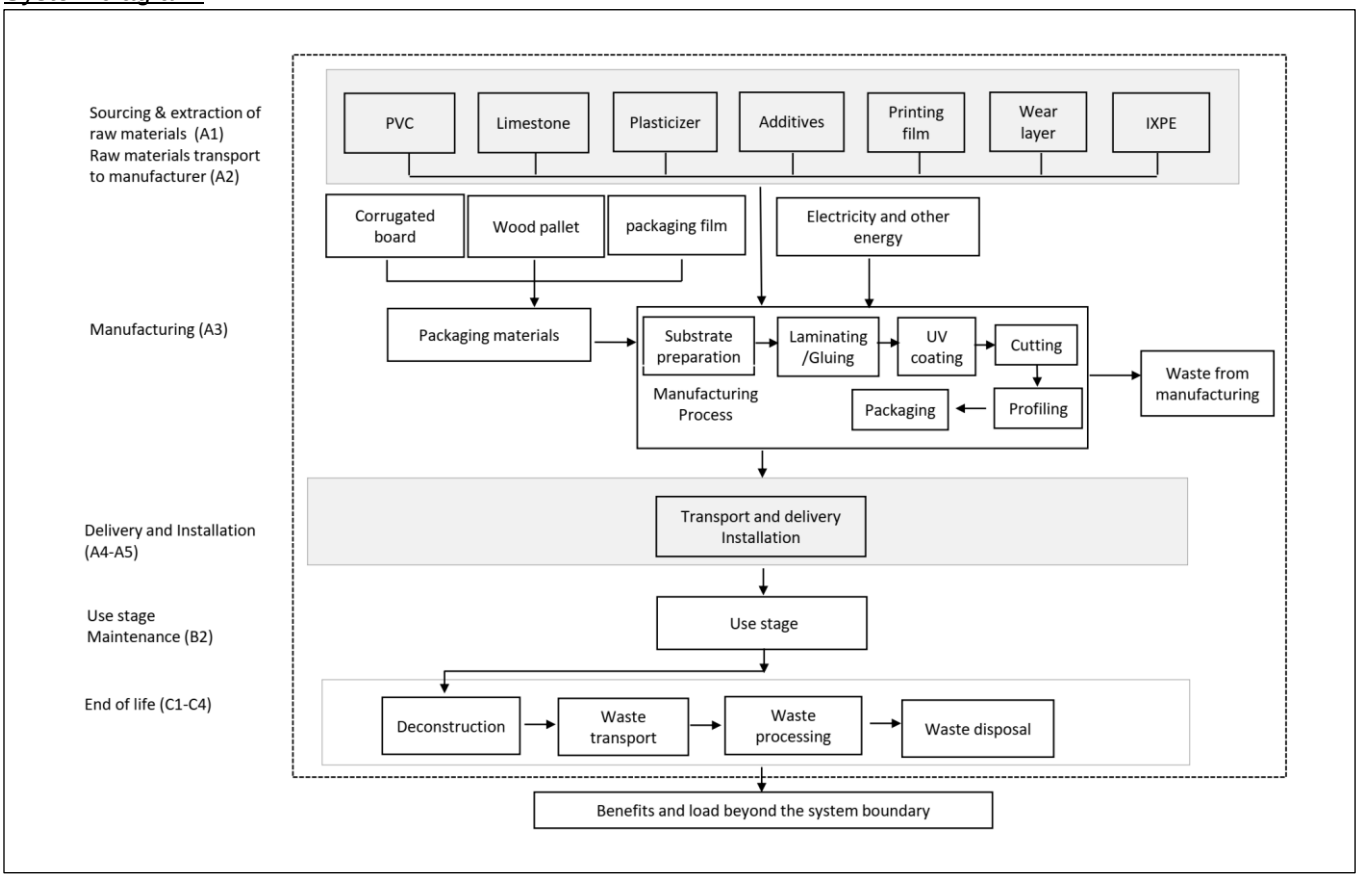
Reference service life:
15 years

Time representativeness:
1st January 2023 to 31st December 2023 (12 months)

Database(s) and LCA software used:
Ecoinvent 3.10 (Allocation, cut-off by classification) and Simapro 9.6.0.1 software

Description of system boundaries:
The system boundary is type c) cradle to grave and module. All life cycle stages are analysed in the study, including: A1-A3 product stage, A4-A5 construction process stage, B use stage, C1-C4 end-of-life stage, and D benefits and loads beyond the system boundary.

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	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Geography	CN	CN	CN	CN to EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU
Specific data used	9%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	88%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

More information:
Electricity data source used in the manufacturing process in A3: Market group for electricity, medium voltage, CN-ECGC, in Ecoinvent 3.10 (cut-off)
Climate impact: 0.857 kg CO_2 eq./kWh

Product stage (A1-A3)

A1, Raw material supply takes into account the extraction and processing of all raw materials and energy which occur upstream to the studied manufacturing process. Specifically, raw material supply covers sourcing of PVC resin, calcium carbonate (limestone), additives (such as pigments, plasticizers, stabilizers, lubricants, etc.), wear layer, printing film, and IXPE backing layer. Electricity and Heating is taken account for at least country specific mix.

A2, Transport to the manufacturer. The transportation of the raw materials to the manufacturing site is studied in this module.

A3, Manufacturing. The manufacturing process of vinyl flooring product mainly includes:

Substrate preparation, the raw materials are first mixed and heated. The mixture is then calendared or extruded into a sheet to create substrate.

Laminating, the substrate is laminated with a printing film, wear layer.

UV coating, the semi-finished product is coated with a lacquer.

Cutting, the semi-finished product is cut into tiles or planks.

Profiling, the edge treatment is processed.

Backing attaching, an acoustic backing (IXPE) is bonded on the back side of the product if required.

Packaging, the finished product is packed into the corrugated board box, stacked on the wood pallet, and wrapped around with packaging film.

Quality checks are made at each step of the production process.

Packaging-related flows in the production process are included in the manufacturing module, i.e. packaging film, wood pallet and corrugated board box. Apart from production of packaging material, the supply and transport of packaging material are also considered in the LCA model.

Construction process stage (A4-A5)

A4, Transport to the building site. This module includes transport from the production gate to the building site. Transport is calculated on the basis of a scenario with the parameters described. The average transportation distance from production plant to building site is 930 km transported by lorry and 10484 nautical miles (equivalent to 9416.4 km) transported by ship.

A5, Installation into the buildings. Installation of the vinyl flooring is accomplished using hand tools. According to the owner, in order to ensure the stability and durability of the LVT flooring, the flooring product uses adhesive to assist the installation. During installation, approximately 5% of the vinyl flooring is lost as off-cuts. The additional production processes to compensate the loss is considered in this study, so the elementary flow with 5% waste should be 1.05m^2 when the functional unit is defined as 1m^2 of installed Vinyl Flooring. All flooring losses are collected for landfill disposal.

The impacts associated with packaging disposal are included with the installation phase. The packaging waste includes wood pallet, packaging film, and corrugated board box in A5. The end-of-life scenario of packaging is followed EU 27 waste management scenario.

Packaging	Recycling	Landfill	Incineration
Wood pallet	32.0%	38.4%	29.6%
Packaging film	40.7%	22.4%	36.9%
Corrugated board box	82.5%	9.3%	8.2%

Use and maintenance (B1-B7):

This comprises the stages B1 to B7, but for floor coverings only stage B2 is considered as specified in the c-PCR. For B1, and B3-B7, they are neither not applicable nor negligible.

The reference service life (RSL) of the vinyl flooring product is 15 years for commercial heavy use as stated by the owner. The service life of the flooring may vary depending on the amount and nature of flooring traffic and the type and frequency of maintenance. This RSL is applicable as long as the product

use complies with that defined by EN ISO 10582:2018 and EN ISO 10874:2012 for commercial heavy use.
B2, Maintenance stage. According to the owner, typical maintenance involves regular sweeping and damp mopping. The present assessment is based on a recommended weekly cleaning schedule including sweeping and mopping with a neutral detergent. The B2 scenario is as below, and the impact is studied with RSL of 15 years.

Parameter	Value	Unit
Maintenance process	weekly damp mopping	-
Water consumption	5.2	L/m^2/year
Clean detergent consumption	0.0104	kg/m^2/year

End-of-Life Stage (C1-C4):
C1, De-construction. According to the owner, the flooring product can be manually removed from the floor. Hence no impact is considered during demolition.
C2, Transport to waste processing. It is estimated that there is no mass loss during the use of the product, therefore the end-of-life product is assumed that it has the same weight with the declared product. All of the end-of-life product is assumed to be transported as separate construction waste to the closest facilities. Transportation distance to the closest disposal area is estimated as 100 km and the transportation method is lorry which is the most common.
C3, Waste processing for reuse, recovery and/or recycling. It is assumed 100% of the deconstructed products (C1) to be sent to landfill. Hence, no waste processing is required.
C4, Disposal. The 100% of the deconstructed products are assumed to be sent to landfill.

Resource Recovery Stage (D)
D, Reuse/recovery/recycling potential.
100% of the products are assumed to be sent to landfill.
No benefit or load resulting from reuse/recovery/recycling beyond the product system boundary.

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the EN 15804:2012+A2:2019 and the applied PCR. The study does not exclude any hazardous materials or substances.
The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

ALLOCATION

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation.
In this study, as per EN 15804, allocation is conducted in the following order;
1. Allocation should be avoided.
2. Allocation should be based on physical properties (e.g., mass, volume) when the difference in revenue is small.
3. Allocation should be based on economic values.

Allocation used in Ecoinvent 3.10 environmental data sources follows the methodology “allocation, cut-off by classification”. This methodology is in line with the requirements of the EN 15804 standard.

For data sets in this study, the allocation of the inputs is generally carried out via the mass. The consumption and transportation of raw materials was allocated by mass ratio.
In this study one allocation occurs on product production, in allocating the input and output, i.e. energy within the production site such as electricity, heat and auxiliary material such as water, and wastewater, among the various series of flooring products, allocation is done via total production (flooring area with the unit as m^2) of all products produced on a yearly average.

During the production process of the flooring product, there are no other by-products produced from the production line, hence there is no occasion that requires allocation for multi-output processes.

For this project, there is only one production site. So, there is no allocation among plants.

Key assumptions

1. 100 km transportation distance is assumed for the disposal of the deconstructed products.
2. The 100% of the deconstructed products are assumed to be sent to landfill.

Inclusion or exclusion of Infrastructure and/or Capital goods

Depending on the PCR, in general, the production and end-of-life processes of infrastructure or capital goods used in the product system should be excluded, unless there is evidence that they are relevant in terms of their environmental impact, or when a generic LCI dataset includes infrastructure/capital goods, and it is not possible, within reasonable effort, to subtract the data on infrastructure/capital goods from this dataset (directly citation from section 4.3.2 of PCR 1.3.4). In this study, the infrastructure and capital goods are not included in the LCA analysis since they are used plenty of times for several years for the product manufacturing. According to the PCR, it should be excluded.

Content information

Product components		Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/functional unit
UV coating		0.0200	0%	0%
Wear layer		0.7150	0%	0%
Printing film		0.1000	0%	0%
Substrate	PVC	1.1400-3.0120	0%	0%
	Calcium carbonate	2.0900-8.1100	0%	0%
	Additives	0.2080-0.4400	0%	0%
Adhesive for IXPE		0-0.0500	0%	0%
Backing - IXPE		0-0.1000	0%	0%
TOTAL		4.5050-12.3150	0%	0%
Packaging materials		**Weight, kg**	**Weight-% (versus the product)**	**Weight biogenic carbon, kg C/kg functional unit**
Wood pallet		0.1500	3.3296%	0.0588
Corrugated board box		0.1000	2.2198%	0.0425
Packaging film		0.0120	0.0974%	0
TOTAL		0.2620	5.6468%	0.1013

Note: The content declaration of product components is based on qualitative description of ranges.
The content declaration of packaging containing biogenic carbon is based on the lowest amount of the included products' packaging.
The content declaration of packaging that does not contain biogenic carbon is based on the highest amount of the included products' packaging.

Substances, REACH – Very High Concern

The products do not contain any REACH SVHC substances in amounts greater than 0.1% (1000ppm).

Results of the environmental performance indicators

Mandatory impact category indicators according to EN 15804, EF3.1

Results per functional unit																
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	1.94E+01	3.84E+00	1.27E+00	0.00E+00	5.78E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.32E-01	0.00E+00	7.70E-02	0.00E+00
GWP-biogenic	kg CO_2 eq.	-3.44E-01	6.06E-04	7.83E-01	0.00E+00	6.32E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.40E-05	0.00E+00	2.08E-05	0.00E+00
GWP-luluc	kg CO_2 eq.	2.20E-02	1.85E-03	1.24E-03	0.00E+00	3.98E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.52E-05	0.00E+00	3.97E-05	0.00E+00
GWP-total	kg CO_2 eq.	1.87E+01	3.84E+00	2.05E+00	0.00E+00	6.24E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.32E-01	0.00E+00	7.71E-02	0.00E+00
ODP	kg CFC 11 eq.	6.62E-06	5.56E-08	3.43E-07	0.00E+00	1.35E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.66E-09	0.00E+00	2.23E-09	0.00E+00
AP	mol H^+ eq.	8.07E-02	7.94E-02	8.32E-03	0.00E+00	3.88E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.26E-04	0.00E+00	5.46E-04	0.00E+00
EP-freshwater	kg P eq.	4.68E-03	1.82E-04	2.75E-04	0.00E+00	2.98E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.98E-06	0.00E+00	6.40E-06	0.00E+00
EP-marine	kg N eq.	1.64E-02	2.01E-02	2.00E-03	0.00E+00	2.55E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.45E-04	0.00E+00	2.08E-04	0.00E+00
EP-terrestrial	mol N eq.	1.64E-01	2.23E-01	2.05E-02	0.00E+00	8.50E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.58E-03	0.00E+00	2.27E-03	0.00E+00
POCP	kg NMVOC eq.	7.16E-02	6.26E-02	7.20E-03	0.00E+00	2.54E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.95E-04	0.00E+00	8.13E-04	0.00E+00
ADP-minerals&metals*	kg Sb eq.	1.39E-04	5.97E-06	8.34E-06	0.00E+00	6.25E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.56E-07	0.00E+00	1.20E-07	0.00E+00
ADP-fossil*	MJ	3.44E+02	4.99E+01	2.09E+01	0.00E+00	9.32E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.91E+00	0.00E+00	1.89E+00	0.00E+00
WDP*	m^3	5.72E+00	1.68E-01	4.25E-01	0.00E+00	4.97E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.12E-03	0.00E+00	8.26E-02	0.00E+00
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.*
Statement: 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.

Additional mandatory impact category indicators

Results per functional unit																
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[1]	kg CO_2 eq.	1.95E+01	3.84E+00	1.31E+00	0.00E+00	6.24E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.32E-01	0.00E+00	7.71E-02	0.00E+00

[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.
Note: The GWP-GHG values come from the results of SPC.

Resource use indicators

Results per functional unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	1.48E+01	4.60E-01	7.72E+00	0.00E+00	2.73E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.95E-02	0.00E+00	1.70E-02	0.00E+00
PERM	MJ	6.59E+00	0.00E+00	-3.30E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	2.14E+01	4.60E-01	1.12E+00	0.00E+00	2.73E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.95E-02	0.00E+00	1.70E-02	0.00E+00
PENRE	MJ	2.53E+02	4.99E+01	2.14E+01	0.00E+00	9.32E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.91E+00	0.00E+00	9.16E+01	0.00E+00
PENRM	MJ	9.03E+01	0.00E+00	-2.12E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-4.21E+01	0.00E+00
PENRT	MJ	3.44E+02	4.99E+01	2.09E+01	0.00E+00	9.32E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.91E+00	0.00E+00	1.89E+00	0.00E+00
SM	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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	0.00E+00	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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	1.08E-01	5.07E-03	1.01E-02	0.00E+00	1.62E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.87E-04	0.00E+00	1.97E-03	0.00E+00
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															

Waste indicators

Results per functional unit															
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.18E-02	9.59E-04	1.84E-03	0.00E+00	1.25E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.36E-05	0.00E+00	2.65E-05	0.00E+00
Non-hazardous waste disposed	kg	2.41E+00	1.63E+00	9.95E-01	0.00E+00	6.76E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.64E-01	0.00E+00	1.23E+01	0.00E+00
Radioactive waste disposed	kg	2.52E-04	7.49E-06	1.81E-05	0.00E+00	1.23E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.75E-07	0.00E+00	2.94E-07	0.00E+00

Output flow indicators

Results per functional unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	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	0.00E+00	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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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	0.00E+00	0.00E+00	0.00E+00	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	0.00E+00	0.00E+00	0.00E+00	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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Disclaimer: it is discouraging the use of the results of modules A1-A3 (A1-A5 for services) without considering the results of module C.

Additional environmental information

In this EPD, the result of each declared environmental performance indicator was based on the worst-case result of the included products. The range of results for all products within this group is provided in the table below.

Variation between the included products in this EPD

LCA result of one functional unit product (A-C)	Min result	Max result	Differ
1. Environmental impact indicators			
00 Global warming potential (GWP-GHG) [kg CO_2 eq.]	1.36E+01	2.55E+01	88%
01 EN15804+A2 Climate Change-total [kg CO_2 eq.]	1.36E+01	2.55E+01	88%
02 EN15804+A2 Climate Change, fossil [kg CO_2 eq.]	1.35E+01	2.53E+01	87%
03 EN15804+A2 Climate Change, biogenic [kg CO_2 eq.]	5.43E-02	9.87E-02	82%
04 EN15804+A2 Climate Change, land use and land use change [kg CO_2 eq.]	5.92E-02	6.50E-02	10%
05 EN15804+A2 Ozone depletion [kg CFC-11 eq.]	4.95E-06	7.00E-06	41%
06 EN15804+A2 Acidification [Mole of H^+eq.]	8.24E-02	1.73E-01	110%
07 EN15804+A2 Eutrophication, freshwater [kg Peq.]	3.43E-03	5.43E-03	58%
08 EN15804+A2 Eutrophication, marine [kg N eq.]	1.99E-02	4.14E-02	108%
09 EN15804+A2 Eutrophication, terrestrial [Mole of N eq.]	1.93E-01	4.20E-01	118%
10 EN15804+A2 Photochemical ozone formation, human health [kg NMVOC eq.]	7.36E-02	1.45E-01	97%
11 EN15804+A2 Resource use, mineral and metals [kg Sb eq.]	1.00E-04	1.59E-04	59%
12 EN15804+A2 Resource use, fossils [MJ]	2.47E+02	4.28E+02	73%
13 EN15804+A2 Water use [m world equiv.]	4.38E+00	6.76E+00	54%
2. Resource use indicators			
01 EN15804+A2 Use of renewable primary energy (PERE) [MJ]	1.63E+01	2.57E+01	58%
02 EN15804+A2 Primary energy resources used as raw materials (PERM) [MJ]	0.00E+00	0.00E+00	
03 EN15804+A2 Total use of renewable primary energy resources (PERT) [MJ]	1.63E+01	2.57E+01	58%
04 EN15804+A2 Use of non-renewable primary energy (PENRE) [MJ]	2.47E+02	4.28E+02	73%
05 EN15804+A2 Non-renewable primary energy resources used as raw materials (PENRM) [MJ]	0.00E+00	0.00E+00	
06 EN15804+A2 Total use of non-renewable primary energy resources (PENRT) [MJ]	2.47E+02	4.28E+02	73%
07 EN15804+A2 Input of secondary material (SM) [kg]	0.00E+00	0.00E+00	
08 EN15804+A2 Use of renewable secondary fuels (RSF) [MJ]	0.00E+00	0.00E+00	
09 EN15804+A2 Use of non renewable secondary fuels (NRSF) [MJ]	0.00E+00	0.00E+00	
10 EN15804+A2 Use of net fresh water (FW) [m^3]	9.72E-02	1.37E-01	41%
3. Output flows and waste categories			
01 EN15804+A2 Hazardous waste disposed (HWD) [kg]	9.45E-03	1.59E-02	68%
02 EN15804+A2 Non-hazardous waste disposed (NHWD) [kg]	7.21E+00	1.76E+01	144%
03 EN15804+A2 Radioactive waste disposed (RWD) [kg]	1.87E-04	2.86E-04	53%
04 EN15804+A2 Components for re-use (CRU) [kg]	0.00E+00	0.00E+00	
05 EN15804+A2 Materials for Recycling (MFR) [kg]	0.00E+00	0.00E+00	
06 EN15804+A2 Material for Energy Recovery (MER) [kg]	0.00E+00	0.00E+00	
07 EN15804+A2 Exported electrical energy (EEE) [MJ]	0.00E+00	0.00E+00	
08 EN15804+A2 Exported thermal energy (EET) [MJ]	0.00E+00	0.00E+00	
LCA result of one functional unit product (A1-A3)	**Min result**	**Max result**	**Differ**
00 Global warming potential (GWP-GHG) [kg CO_2 eq.] (A1-A3)	1.04E+01	1.95E+01	88%

References

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