

Environmental Product Declaration



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

WPC flooring

from

ZHANGJIAGANG K&C TECH CO., LTD.



Programme:

Programme operator:

EPD registration number:

Publication date:

Valid until:

The International EPD® System, www.environdec.com

EPD International AB

EPD-IES-0015813

2024-12-04

2029-12-03

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





General information

Programme information

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

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

Product Category Rules (PCR)

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)

Product Category Rules (PCR): *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: *Sally Xie, Intertek*
sally.xie@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:

ZHANGJIAGANG K&C TECH CO., LTD.

Contact:

Ward Liu

sales@kctiles.com

Description of the organisation:

Founded in 2005, K&C developed a new factory: Zhangjiagang K&C Tech Co., LTD in 2015, which is located in new energy Industrial Park, Tangqiao Town, Zhangjiagang City, Jiangsu Province.

The company specializes in the production and sales of PVC flooring, including LVT/WPC/SPC, and now PP product is coming soon. The factory covers an area of 45000m², equipped with the industry's advanced production line and related supporting equipment, mainly including backing material production line; SPC extrusion lines; WPC extrusion lines; semi-automatic hot-pressing machines; UV coating lines; profiling lines, imported from Germany and Japan; IXPE/Cork padding lines, painting line; glue backing machine; automatic package machine and etc.

With full capacity around 400 containers per month, our existing products are 100% exported, mainly distributed to Germany, Belgium, Romania, Portugal, Netherland, Poland, America, south-east Asian markets and etc. From 2020, the company's sales reached to 40 million US dollars.

Certificated with ISO 9001 quality management system, CE certification. K&C takes quality into first consideration, and we assure advanced technology, standard management, high-level quality control system and customer satisfaction.

Product-related or management system-related certifications:

ISO 9001, EN 14041:2004/AC:2006(CE)

Name and location of production site(s):

Zhangjiagang K&C Tech Co., Ltd.

No.225 Shangcheng road, Miaoqiao, Tangqiao, Zhangjiagang, Jiangsu, China

Product information

Product name:

WPC flooring



Figure 1 Image of the product



Physical properties of the product:

Characteristics	Test Method	Properties
Reaction to fire	EN 13501-1	Class B _{fl} -s1
Formaldehyde emissions	EN 14041, EN 717-1	Class E1
Slip resistance	EN 14041, EN 13893	Class DS

Product description:

WPC flooring product is made primarily from polyvinyl chloride (PVC), calcium carbonate (limestone), plasticizers and some additives. 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 cork layer to improve acoustic performance and increase comfort underfoot. The product is waterproof, easy to install and maintain. It is a lighter, quieter and high-level product, and environmentally friendly.

Characteristics		Nominal value
Product thickness, mm		8.0
Wear layer thickness, mm		0.5
Backing layer (Cork) thickness, mm		1.5
Product weight, kg/m ²		8.329
Product form, tiles or planks	Width, mm	120~470
	Length, mm	600~2400

Products application:

The products provide the primary function of flooring for interior applications. The flooring products are used in various residential and commercial applications including retail, healthcare, education, and hospitality.

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 m² of installed WPC flooring

The conversion factor is 8.329 kg per m² (0.120 m²/kg) based on the product of WPC flooring.

Reference service life:

15 years

Time representativeness:

1st January 2023 to 31st December 2023 (12 months)

Database(s) and LCA software used:

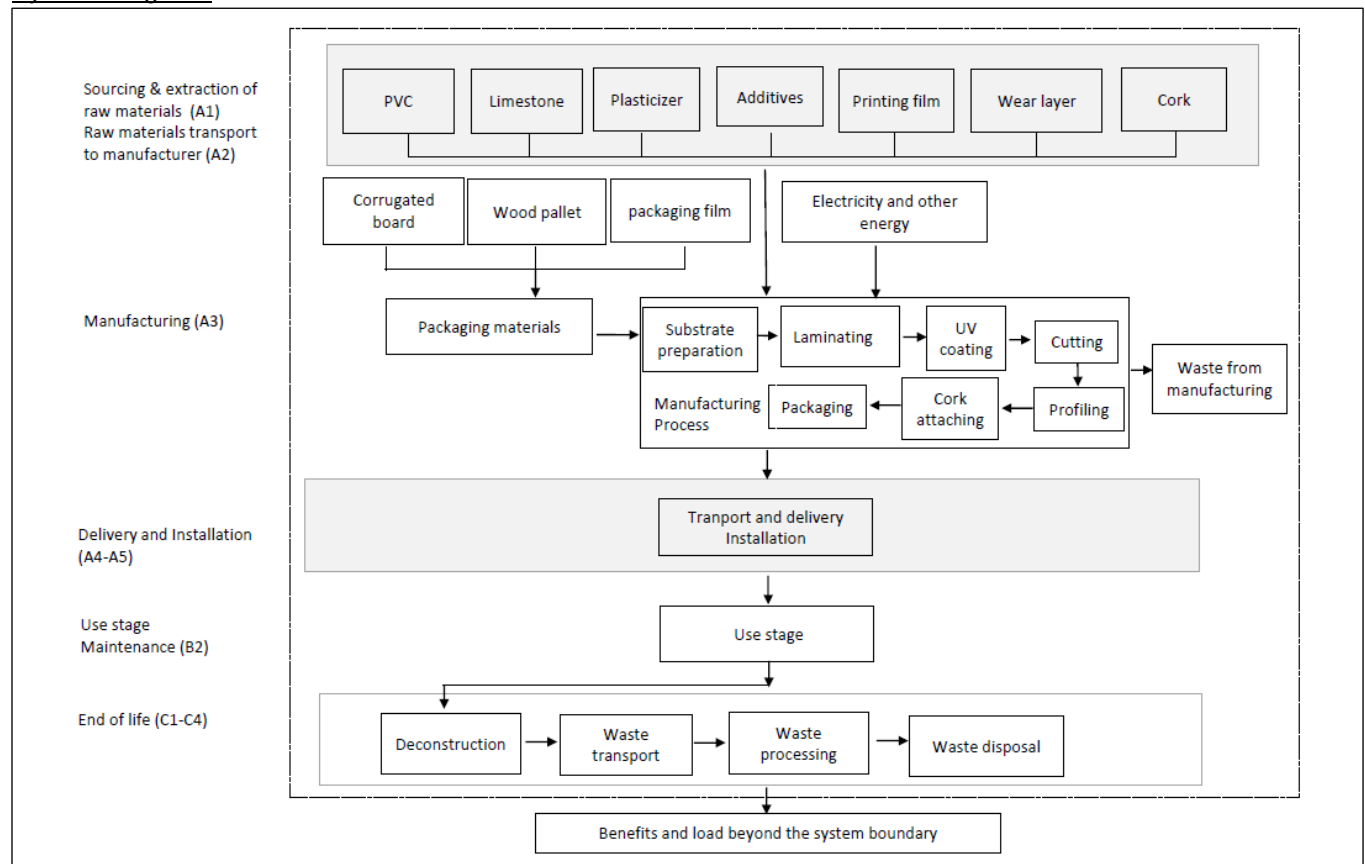
Ecoinvent 3.10 (Allocation, cut-off by classification) and Simapro 9.6.0.1 software



Description of system boundaries:

The system boundary is type c) cradle to grave and module D. 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	28%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

More information:

Electricity data source used in the manufacturing process in A3: Market group for electricity, low voltage, CN-ECGC, in Ecoinvent 3.10 (cut-off)

Climate impact: 0.884 kg CO₂ 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), plasticizers, additives (such as stabilizers, lubricants, foaming agent, etc.), wear layer, printing film, and cork backing layer.

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 WPC flooring product mainly includes:

Substrate preparation, the raw materials are first mixed and heated. Mixtures are then calendared or extruded into a sheet for surface layer substrate and base layer substrate respectively.

Laminating, the surface layer substrate is laminated with printing film and wear layer, then is coated with a lacquer through UV coating. Then it is laminated with the base layer substrate.

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

Profiling, the edge treatment is processed.

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

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 473 km transported by lorry and 10530 nautical miles (i.e., 19502 km) transported by ship.

A5, Installation into the buildings. Installation of the vinyl flooring is accomplished using hand tools with no energy consumption and associated emissions. 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 1.05m² when the functional unit is defined as 1m² of installed WPC 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 general 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 general 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.

No cut-off criteria has been taken into account in this study.

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 waste water, among the various series of flooring products, allocation is done via total production (floor area with the unit as m²) 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.



Content information

Product components		Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/ functional unit
UV coating		0.013	0%	0%
Wear layer		0.630	0%	0%
Printing film		0.100	0%	0%
Substrate	PVC	2.697	0%	0%
	Calcium carbonate	3.825	0%	0%
	Plasticizer	0.140	0%	0%
	Additives	0.489	0%	0%
Adhesive for substrate		0.085	0%	0%
Adhesive for Cork		0.045	0%	0%
Backing – Cork		0.305	0%	100% 0.1647 kg C/functional unit
TOTAL		8.329	0%	3.6619% 0.1647 kg C/functional unit
Packaging materials		Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C/ functional unit
Wood pallet		0.2435	2.9235%	0.0954
Corrugated board box		0.1690	2.0291%	0.0719
Packaging film		0.00796	0.0956%	0
TOTAL		0.42046	5.0482%	0.1673

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

This LCA analysis applied the EN 15804+A2, EF3.1 was used

Mandatory impact category indicators according to EN 15804

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.	1.82E+01	2.19E+00	1.10E+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	8.93E-02	0.00E+00	5.21E-02	0.00E+00
GWP-biogenic	kg CO ₂ eq.	-1.25E+00	3.38E-04	6.47E-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	1.62E-05	0.00E+00	6.87E-01	0.00E+00
GWP-luluc	kg CO ₂ eq.	6.06E-01	1.10E-03	3.04E-02	0.00E+00	3.98E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.06E-05	0.00E+00	2.68E-05	0.00E+00
GWP-total	kg CO ₂ eq.	1.76E+01	2.20E+00	1.77E+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	8.94E-02	0.00E+00	7.39E-01	0.00E+00
ODP	kg CFC 11 eq.	4.47E-06	3.17E-08	2.26E-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	1.80E-09	0.00E+00	1.51E-09	0.00E+00
AP	mol H ⁺ eq.	8.24E-02	5.29E-02	7.01E-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	2.88E-04	0.00E+00	3.69E-04	0.00E+00
EP-freshwater	kg P eq.	4.66E-03	9.04E-05	2.45E-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	6.07E-06	0.00E+00	4.33E-06	0.00E+00
EP-marine	kg N eq.	1.91E-02	1.33E-02	1.76E-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	9.80E-05	0.00E+00	1.41E-04	0.00E+00
EP-terrestrial	mol N eq.	1.69E-01	1.47E-01	1.67E-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	1.07E-03	0.00E+00	1.54E-03	0.00E+00
POCP	kg NMVOC eq.	7.42E-02	4.07E-02	6.11E-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	4.70E-04	0.00E+00	5.50E-04	0.00E+00
ADP-minerals&metals*	kg Sb eq.	1.48E-04	2.90E-06	7.79E-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	2.41E-07	0.00E+00	8.14E-08	0.00E+00
ADP-fossil*	MJ	3.29E+02	2.79E+01	1.87E+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	1.29E+00	0.00E+00	1.28E+00	0.00E+00
WDP*	m ³	6.71E+00	8.24E-02	3.29E-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	6.17E-03	0.00E+00	5.58E-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.	1.89E+01	2.20E+00	1.16E+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	8.94E-02	0.00E+00	5.21E-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 CO₂ is set to zero.



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	5.79E+01	2.35E-01	8.64E+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	2.00E-02	0.00E+00	1.15E-02	0.00E+00
PERM	MJ	5.44E+00	0.00E+00	-5.44E+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	6.34E+01	2.35E-01	3.21E+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	2.00E-02	0.00E+00	1.15E-02	0.00E+00
PENRE	MJ	2.46E+02	2.79E+01	1.91E+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	1.29E+00	0.00E+00	8.32E+01	0.00E+00
PENRM	MJ	8.23E+01	0.00E+00	-3.38E-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	-8.19E+01	0.00E+00
PENRT	MJ	3.29E+02	2.79E+01	1.87E+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	1.29E+00	0.00E+00	1.28E+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	m³	1.33E-01	2.53E-03	6.59E-03	0.00E+00	1.62E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.94E-04	0.00E+00	1.33E-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	1.17E-02	4.79E-04	1.58E-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	3.62E-05	0.00E+00	1.79E-05	0.00E+00
Non-hazardous waste disposed	kg	2.61E+00	5.82E-01	7.18E-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	1.11E-01	0.00E+00	8.33E+00	0.00E+00
Radioactive waste disposed	kg	2.71E-04	3.77E-06	1.43E-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	3.89E-07	0.00E+00	1.99E-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.



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