

Environmental Product Declaration



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

SPC

from

Programme:	EPD Global
Programme operator:	EPD Global
EPD registration number:	S-P-0XXXX
Publication date:	202X-XX-YY
Valid until:	202X-XX-YY





General information

Programme information

Programme: EPD Global
Website: www.lca.no
E-mail: post@lca.no

Information **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 2.0. 1; c-PCR-004 Resilient, textile and laminate floor coverings (EN 168 10:20 17), version: 2024-04-30; and, UN CPC code: 36 9 1 0 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. A full list of members is available on www.environdec.com. The review panel may be contacted via support@environdec.com. Chairs of the PCR review are Rob Rouwette (chair) and Noa Meron (co-chair).*

Life Cycle Assessment (LCA)

LCA accountability: *Crissy Xia, SGS*
crissy.xia@sgs.com

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:



Description of the organisation:

[Redacted] Ltd. is a flooring manufacturer and solution provider, with products covering multiple categories, including LVT, Looselay, SPC, WPC, LSPC, wall panels and PET floorings.

Product-related or management system-related certifications:

ISO 9001-, ISO45001 and 14001-certificates.

Name and location of production site(s):



Product information

Product name: SPC



Product description:

SPC flooring is mainly made of polyvinyl chloride (PVC), calcium carbonate, plasticizers, and additives (such as stabilizers and lubricants). It consists of an SPC base material layer, a color film layer, a wear-resistant layer, a UV curing layer, and a back cover. It features better structural stability and sound insulation.



Product Details:

	Thickness	Weight
SPC	3	6.015
	3.5	7.055
	4	8.095
	4.5	9.135
	4+1.0IXPE	8.23
	4.5+1.0IXPE	9.27
	5+1.0IXPE	10.31
	5.5+1.0IXPE	11.35
	6+1.0IXPE	12.39
	6.5+1.0IXPE	13.43
	7+1.0IXPE	14.47
	7.5+1.0IXPE	15.51
	8+1.0IXPE	16.55
	8.5+1.0IXPE	17.59
	9+1.0IXPE	18.63

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 Globe; A5 Globe; B Globe; C Globe; D Globe.

LCA information

Functional unit / declared unit:

1m²

1m² of SPC flooring is 9.9294kg.

Reference service life: 25 years

Time representativeness: 1 January, 2024 to 31 December, 2024.

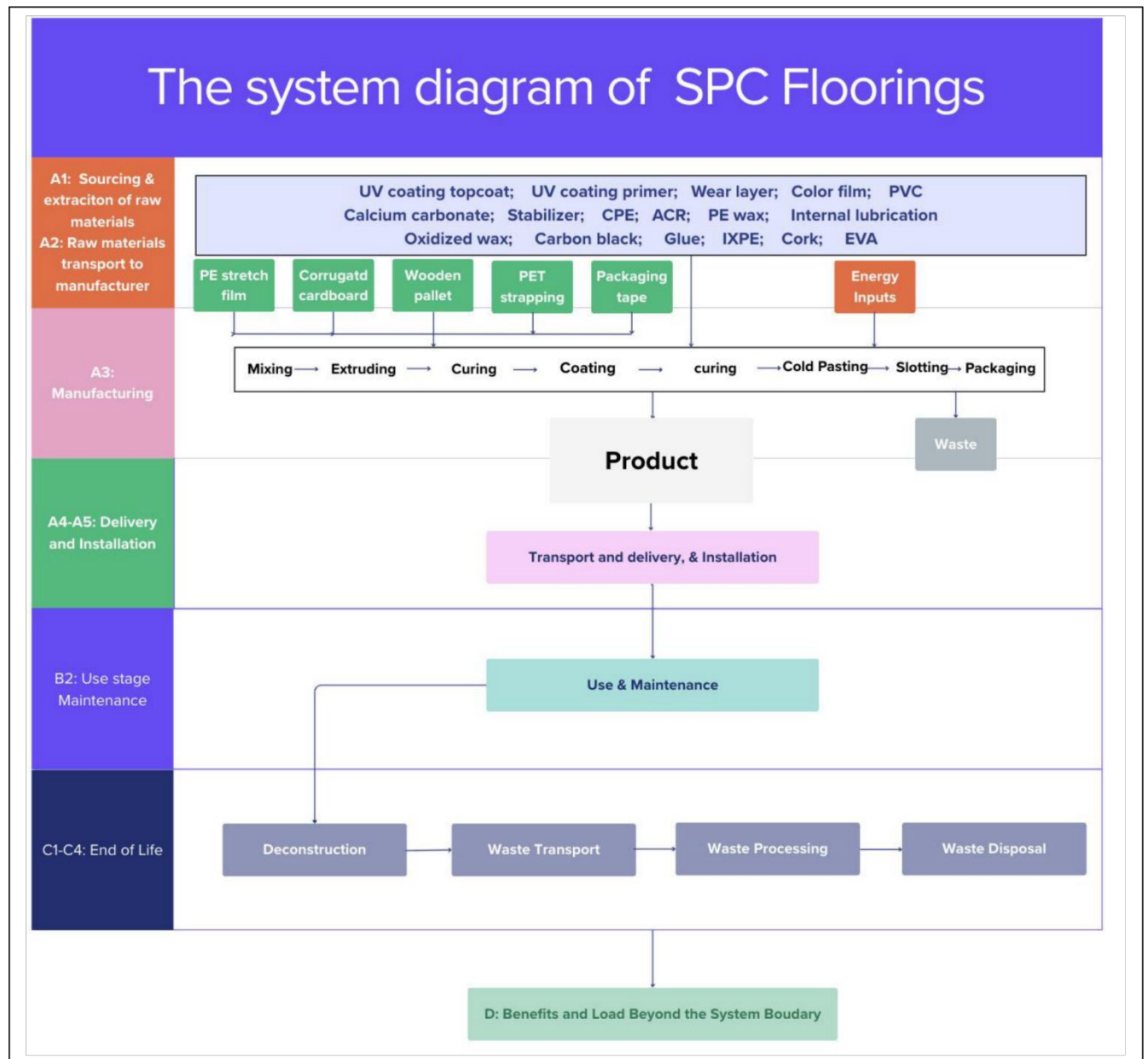
Database(s) and LCA software used: LCA for Experts 10.7.1.28 and Gabi Content Version 2023.2.

Description of system boundaries: Type b)

The system boundary is type b) - Cradle to gate with modules C1–C4, module D and module B2.



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	lition	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	MND	MND	MND	X	MND	MND	MND	MND	MND	X	X	X	X	X
Geography	CN	CN	CN	CN to GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO
Specific data used		28%		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products		0%		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites		0%		-	-	-	-	-	-	-	-	-	-	-	-	-	-

MND:Module Not Declared

More information:

Electricity data source used in the manufacturing process in A3: Electricity grid mix (production mix) CN, in Sphera Solutions GmbH.

GWP-GHG: 0.826 kg CO2 eq./kWh.

Product stage (A1-A3)

A1, Raw material supply covers the extraction and processing of all raw materials and energy, which occur upstream of the manufacturing process under study. Specifically, raw material supply includes UV topcoat, UV primer, wear layer, color film, PVC, calcium carbonate, stabilizer, carbon black, CPE, ACR, PE wax, internal lubrication, oxidized wax, glue, IXPE, cork, EVA, PE stretch film, corrugated cardboard, wooden pallets, PET strapping, and packing tape.

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

A3, Manufacturing. After the raw materials are mixed, they are extruded by an extruder and laminated to obtain SPC slabs. After 24 hours of curing, the coating operation is carried out, and after 12 hours of curing in the natural



environment after the coating, the cold paste operation is carried out to fit the back sticker, and the slitting and slotting are carried out and packaged after 16 hours of lamination.

Packaging-related processes in the production process are included in the manufacturing module, namely packaging film, wooden pallets, and corrugated cardboard boxes. In addition to the production of packaging materials, the supply and transportation of packaging materials are also taken into account in the life cycle assessment (LCA) model.

Use and Maintenance (B2:Maintenance Stage):

According to the property owner, typical maintenance includes regular sweeping and wet mopping. Assuming that a neutral detergent is used for mopping, the impact is studied based on a 25-year RSL.

Water consumption: 5.2 L/m²/year, cleaning detergent consumption: 0.0104 kg/m²/year.

End-of-Life Stage (C1-C4):

C1, De-construction. This flooring product can be dismantled manually without consuming energy. Collection process: 100% collection.

C2, Transport to waste processing. It is estimated that there is no loss of quality during the use of this flooring product, so it is assumed that the scrapped products have the same quality as the declared products. It is assumed that all scrapped products are transported as separate construction waste to the nearest waste treatment plant. Transportation method: truck; transportation distance: 80 km.

C3, Waste processing for reuse, and/or recycling. Assuming that 100% of the products are sent to landfills, waste processing for reuse/ recycling is not necessary.

C4, Disposal. Assuming that 100% of the products are sent to landfills.

Resource Recovery Stage (D):

D, Reuse/recovery/recycling potential. Assuming that 100% of products are sent to landfills, reuse/recycling/recycling beyond the boundaries of the product system will not generate any benefits.

CUT-OFF CRITERIA

According to EN 15804, all inflows that have an impact exceeding 1% of the total mass, energy, or environmental impact are included in the life cycle assessment.

The total sum of inflows excluded at each stage shall not exceed 5% of the energy consumption or material consumption.

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.

Allocation should be avoided.

Allocation should be based on physical properties (e.g., mass, volume) when the difference in revenue is small.

Allocation should be based on economic values.

Specifically, the allocation of materials, energy, and waste is based on the production of the product studied (measured by product area). Allocation ratio = the production of the product studied/ the production of total production of floor products = 0.5312.



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/kg
UV coating topcoat	0.0109	0%	0%
UV coating primer	0.0109	0%	0%
Wear layer	0.4168	0%	0%
Color film	0.1628	0%	0%
PVC	1.8420	0%	0%
Calcium carbonate	6.0049	0%	0%
Stabilizer	0.1750	0%	0%
CPE	0.0921	0%	0%
ACR	0.0553	0%	0%
PE wax	0.0258	0%	0%
Internal lubrication	0.0258	0%	0%
Oxidized wax	0.0064	0%	0%
Carbon black	0.0055	0%	0%
Glue	0.0434	0%	0%
IXPE	0.1085	0%	0%
Cork	0.2171	0%	2.33%; 0.063
EVA	0.1085	0%	0%
TOTAL	9.3117	0%	2.33%; 0.063
Packaging materials	Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C/kg
PE stretch film	0.0025	0.0438%	0
Corrugated cardboard	0.2100	3.6805%	0.0945
Wooden pallet	0.4000	7.0105%	0.1960
PET strapping	0.0051	0.0894%	0



Packaging tape	0.0001	0.0018%	0
TOTAL	0.6177	10.8260%	0.2905

Substances, REACH — Very High Concern

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



Results of the environmental performance indicators

Mandatory impact category indicators according to EN 15804

Results per functional or declared 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.	1.86 E+01	ND	ND	ND	6.59 E-01	ND	ND	ND	ND	ND	0.00 E+00	1.75 E-01	0.00 E+00	6.81 E-01	0.00 E+00
GWP-biogenic	kg CO ₂ eq.	9.54 E-01	ND	ND	ND	1.85 E-01	ND	ND	ND	ND	ND	0.00 E+00	8.00 E-03	0.00 E+00	8.40 E-03	0.00 E+00
GWP-luluc	kg CO ₂ eq.	8.00 E-03	ND	ND	ND	7.59 E-02	ND	ND	ND	ND	ND	0.00 E+00	4.86 E-06	0.00 E+00	5.62 E-04	0.00 E+00
GWP-total	kg CO ₂ eq.	1.77 E+01	ND	ND	ND	5.50 E-01	ND	ND	ND	ND	ND	0.00 E+00	1.83 E-01	0.00 E+00	6.73 E-01	0.00 E+00
ODP	kg CFC 11 eq.	2.26 E-10	ND	ND	ND	1.32 E-08	ND	ND	ND	ND	ND	0.00 E+00	1.06 E-14	0.00 E+00	1.15 E-12	0.00 E+00
AP	mol H ⁺ eq.	3.27 E-02	ND	ND	ND	3.12 E-03	ND	ND	ND	ND	ND	0.00 E+00	4.04 E-04	0.00 E+00	2.05 E-03	0.00 E+00
EP-freshwater	kg P eq.	2.92 E-05	ND	ND	ND	9.28 E-06	ND	ND	ND	ND	ND	0.00 E+00	2.27 E-08	0.00 E+00	1.31 E-04	0.00 E+00
EP-marine	kg N eq.	7.67 E-03	ND	ND	ND	4.21 E-04	ND	ND	ND	ND	ND	0.00 E+00	1.70 E-04	0.00 E+00	4.69 E-04	0.00 E+00
EP-terrestrial	mol N eq.	8.34 E-02	ND	ND	ND	7.42 E-03	ND	ND	ND	ND	ND	0.00 E+00	1.88 E-03	0.00 E+00	5.15 E-03	0.00 E+00
POCP	kg NMVOC eq.	2.86 E-02	ND	ND	ND	1.55 E-03	ND	ND	ND	ND	ND	0.00 E+00	3.70 E-04	0.00 E+00	1.49 E-03	0.00 E+00
ADP-minerals&metals*	kg Sb eq.	9.59 E-04	ND	ND	ND	1.99 E-07	ND	ND	ND	ND	ND	0.00 E+00	1.18 E-09	0.00 E+00	1.81 E-08	0.00 E+00
ADP-fossil*	MJ	2.48 E+02	ND	ND	ND	1.69 E+01	ND	ND	ND	ND	ND	0.00 E+00	2.53 E+00	0.00 E+00	1.02 E+01	0.00 E+00
WDP*	m ³	2.04 E+00	ND	ND	ND	5.68 E+00	ND	ND	ND	ND	ND	0.00 E+00	7.93 E-04	0.00 E+00	9.64 E-03	0.00 E+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.*



Additional mandatory and voluntary impact category indicators

Results per functional or declared 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.	1.86 E+01	ND	ND	ND	7.35 E-01	ND	ND	ND	ND	ND	0.00 E+00	1.75 E-01	0.00 E+00	6.81 E-01	0.00 E+00

Resource use indicators

Results per functional or declared unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	6.52 E+01	ND	ND	ND	1.69 E+00	ND	ND	ND	ND	ND	0.00 E+00	7.71 E-03	0.00 E+00	9.20 E-01	0.00 E+00
PERM	MJ	0.00 E+00	ND	ND	ND	0.00 E+00	ND	ND	ND	ND	ND	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PERT	MJ	6.52 E+01	ND	ND	ND	1.69 E+00	ND	ND	ND	ND	ND	0.00 E+00	7.71 E-03	0.00 E+00	9.20 E-01	0.00 E+00
PENRE	MJ	2.48 E+02	ND	ND	ND	1.69 E+01	ND	ND	ND	ND	ND	0.00 E+00	2.54 E+00	0.00 E+00	1.02 E+01	0.00 E+00
PENRM	MJ	0.00 E+00	ND	ND	ND	0.00 E+00	ND	ND	ND	ND	ND	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
PENRT	MJ	2.48 E+02	ND	ND	ND	1.69 E+01	ND	ND	ND	ND	ND	0.00 E+00	2.54 E+00	0.00 E+00	1.02 E+01	0.00 E+00
SM	kg	0.00 E+00	ND	ND	ND	0.00 E+00	ND	ND	ND	ND	ND	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
RSF	MJ	0.00 E+00	ND	ND	ND	0.00 E+00	ND	ND	ND	ND	ND	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
NRSF	MJ	0.00 E+00	ND	ND	ND	0.00 E+00	ND	ND	ND	ND	ND	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
FW	m ³	6.58 E-02	ND	ND	ND	1.34 E-01	ND	ND	ND	ND	ND	0.00 E+00	2.12 E-05	0.00 E+00	1.01 E-04	0.00 E+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 or declared unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D

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.



Hazardous waste disposed	kg	3.55 E-06	ND	ND	ND	4.03 E-04	ND	ND	ND	ND	ND	0.00 E+00	6.33 E-13	0.00 E+00	8.59 E-10	0.00 E+00
Non-hazardous waste disposed	kg	1.69 E-01	ND	ND	ND	4.38 E-02	ND	ND	ND	ND	ND	0.00 E+00	9.64 E-05	0.00 E+00	9.89 E+00	0.00 E+00
Radioactive waste disposed	kg	3.63 E-03	ND	ND	ND	2.34 E-04	ND	ND	ND	ND	ND	0.00 E+00	9.15 E-07	0.00 E+00	1.21 E-04	0.00 E+00

Output flow indicators

Results per functional or declared unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00 E+00	ND	ND	ND	0.00 E+00	ND	ND	ND	ND	ND	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Material for recycling	kg	0.00 E+00	ND	ND	ND	0.00 E+00	ND	ND	ND	ND	ND	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Materials for energy recovery	kg	0.00 E+00	ND	ND	ND	0.00 E+00	ND	ND	ND	ND	ND	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Exported energy, electricity	MJ	0.00 E+00	ND	ND	ND	0.00 E+00	ND	ND	ND	ND	ND	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00
Exported energy, thermal	MJ	0.00 E+00	ND	ND	ND	0.00 E+00	ND	ND	ND	ND	ND	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00	0.00 E+00

ND=Not Declared

References

PCR 2019:14 Construction products, version 2.0.1

c-PCR-004 Resilient, textile and laminate floor coverings (EN 16810:2017), version: 2024-04-30

ISO 14025:2010 Environmental labels and declarations - Type III environmental declarations Principles and procedures.

ISO 14040:2006 Environmental management. Life cycle assessment. Principles and frameworks.

ISO 14044:2006 Environmental management. Life cycle assessment. Requirements and guidelines.

EN 15804:2012+A2:2019/AC:2021 Sustainability in construction works - Environmental product declarations - Core rules for the product category of construction products.