

Environmental Product Declaration



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

[***SPC Flooring Products***]

from

[***FUJIAN SIJIA NEW MATERIAL TECHNOLOGY CO., LTD.***]



Programme:

Programme operator:

EPD registration number:

Publication date:

Valid until:

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
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): Product Category Rules (PCR): *PCR 2019:14 PCR Construction products v1.3.4 issue data 2024-04-30 valid until 2025-06-20*

c-PCR-

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:

FUJIAN SIJIA NEW MATERIAL TECHNOLOGY CO., LTD

Website: <http://www.sijiacn.com/>

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Description of the organisation:

Fujian Sijia New Material Technology Co., Ltd. is a wholly-owned company engaged in new material technology research and development, high-performance fiber manufacturing, composite material manufacturing and other businesses, established on January 19, 2021. The business scope of the enterprise is: new material technology research and development, high-performance fiber and composite material manufacturing, high-performance fiber and composite material sales, synthetic material manufacturing (excluding hazardous chemicals), synthetic materials sales, floor manufacturing, floor sales, building waterproofing membrane product manufacturing, building waterproofing membrane product sales, new building materials manufacturing (excluding dangerous goods), technical services, technology development, technical consultation, technology exchange, technology transfer, technology promotion, industrial textile products sales, Amusement equipment and entertainment products manufacturing (excluding game and amusement equipment), outdoor products sales, new material technology promotion services, housing leasing, import and export of goods, technology import and export, etc.

Product-related or management system-related certifications:

Management system-related certifications: ISO9001, ISO14001

Name and location of production site(s):

Sixth Wei Road, Fuqing City, Fujian Province, China

Product information

Product name:

SPC flooring tiles

Product identification:

Table 1: Product specification

Specification	SPC
Total Thickness	



Product description:

SPC (Stone Plastic Composite) SPC flooring is produced by measuring, heat mixing, cold mixing, feeding, and plasticizing extrusion to create the SPC base material. It is known for its rigidity and toughness, being more stable under temperature variations.

UN CPC code:

363 Semi-manufactures of plastics

Geographical scope:

China for A1-A3, Europe for A4, A5 and C1-

of these compounds, forming the basis for environmental impact assessment in subsequent stages of the life cycle. The major components are sourced directly from suppliers, ensuring that the LCI is as accurate as possible, and background data for upstream processes are modeled using established databases like Ecoinvent.

A2 Raw materials transport

The transportation mainly takes place on the upstream of raw material and packaging material supply. Since there lacks of the detailed transportation type, the transport dataset -
32 metric ton, EURO5 {RoW}] transport, freight, lorry 16-32 metric ton, EURO5 | Cut

of landfilling. For these flooring products, $e_{2,4}$ and $e_{1,4}$ are zeros. For $e_{1,1}$, the parameters for its calculation are given in the following Table

Table 4: Module D modeling for recycling of the packaging materials

Product category	Materials	Mass(kg)	$e_{1,1}$	$e_{2,4}$	$e_{1,4}$
SPC	Paper packaging	0.141	0.85	0	0.120
	Plastic packaging	0.007	0.9	0	0.006

For The parameter of $e_{1,1}$, we follow a conservative approach of substituting a more primitive materials. Thus, no $e_{1,1}$ is needed under this approach.

Table 5: Selection of substituted materials

Product category	Materials		LHV (MJ/kg waste)	Exported electricity(MJ/kg waste)	Exported thermal energy(MJ/kg waste)
SPC	Paper packaging	0.011	15.92	0.017	0.036
	Plastic packaging	0.003	42.47	0.015	0.031

System diagram:

More information:

Cut-off criteria

The following steps/stages were not included in the system boundary5(tem)25Gh(he)-7(-)-7toof n rsoe tt

- 1) Storage phases of flooring products
- 2) Secondary and intermediate packaging.
- 3) Personnel-related processes, such as transportation of employees to and from work are excluded.
- 4) The production and end-of-life processes of infrastructure or capital goods used in the product system are excluded since it has no evidence that it is of relevance in terms of environmental impact.

Allocation

For recycling and disposal process at the end-of-life stage, the Polluters Pay Principle (PPP) has been adopted. PPP indicates that the environmental impacts to dispose the products are allocated to the polluter, i.e., the product manufacturer. The benefits of recycling and recovery is out of boundary of the product system and will not be allocated to flooring product. For data sets in this study, allocation is done via total dimension in m² of the flooring on a yearly average. The principle for choosing the size is based on the linear relationship of the product output to the environmental impacts. In this study, there is no other by products produced from the production line, hence there is quite little occasion that required allocation for multi-output processes.

Key assumptions

The main assumptions and limitations of this LCA study are as follows

In the Life Cycle Assessment (LCA) for SPC, the additives and stabilizers used in the manufacturing process are represented using proxy data due to confidentiality restrictions. These substances play a crucial role in enhancing product performance, but specific details regarding their composition and sourcing are not disclosed. Despite this, their impact is included in the analysis, albeit with generalized data, as they constitute a relatively small fraction of the total materials.

Table 7 Proxy dataset selection

Substances	Proxy data	Dosage in SPC(kg/m ²)
Stabilizer	Chemical, organic {GLO} chemical production, organic Cut-off, U	0.137
Additive	Chemical, inorganic {GLO} chemical production, inorganic Cut-off, U	

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

Product stage	Construction process
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Results of the environmental performance indicators

The results section presents the environmental impact for the worst-case scenario among the peer products, i.e., the A-C modules results are based on a higher impacts values. The variations for environmental impact categories are supplied. The variation is defined as the ratio between the distance of max and min results over the maximum results.

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

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP									



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PENRE	MJ	2.28E+02	3.01E+01	1.14E-01	0.00E+00	2.14E+00	1.76E+00	1.15E+00	-3.52E-01
PENRT	MJ	2.80E+02	3.01E+01	1.14E-01	0.00E+00	2.14E+00	1.76E+00	1.15E+00	-3.52E-01
PERM	MJ	5.96E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERE	MJ	1.62E+01	2.87E-01						

References

- [1] Ecoinvent, 2023. Swiss Centre for Life Cycle Assessment, v3.9 (www.ecoinvent.ch).
- [2] EN 15804:2012+A2:2019/AC:2021, Sustainability of construction works - Environmental product declaration - Core rules for the product category of construction products.
- [3] ISO 14025:2006, Environmental labels and declarations-Type III environmental declarations-Principles and procedures.
- [4] ISO 14040: 2006/Amd 1:2020 Environmental management - Life cycle assessment - Principles and framework Amendment 1 (ISO 2020).
- [5] ISO 14044: 2006/Amd 2:2020 Environmental management - Life cycle assessment - Requirements and guidelines Amendment 2 (ISO 2020).
- [6] ISO 21930:2017, Sustainability in buildings and civil engineering works Core rules for environmental product declarations of construction products and services.
- [7] EPD International. (2021). GENERAL PROGRAMME INSTRUCTIONS FOR THE INTERNATIONAL EPD® SYSTEM Version 4.0.
- [8] EPD International. (2022). PCR 2019:14, Version 1.3.3 Construction Products.
- [9] Plastics - the Facts 2021 [Plasctics - the Facts 2021 \(plasticseurope.org\)](http://Plasctics - the Facts 2021 (plasticseurope.org))

